WESTERN MEDICAL PRACTICE IN BIHAR: AN ETHNOGRAPHIC STUDY

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Declaration

The thesis titled "**Western Medical Practice in Bihar: An Ethnographic Study**" is submitted in partial fulfillment for the award of the degree of Doctor of Philosophy in Jawaharlal Nehru University, is an original work and has not been submitted so far in part or in full, for any other degree or diploma of this University or any other University or Institution.

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We recommend this thesis be placed before the examiners for evaluation for the award of the degree of Doctor of Philosophy.

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ABSTRACT

Western medical practice takes place in a very complex social, political and cultural environment and it also adapts itself to it. The examples of quacks or pharmacist practicing Western medicine, the health care practitioner and the patients seeking pluralistic medicine, physicians administering injection on demands of patients, over prescription of medicine – is all an adaptation of Western medicine to the local culture of a place. The consequence of such practices is unknown and unmeasured and such practices evolve over the years. Apart from the advancement in medical technologies and innovations, local culture, time, space or geographical location and context have always defined and redefined the nature of western medical practice. People's perception and faith in it have also changed with spatio-temporal changes. The knowledge of the context of medicine in a local place is as eminent as the macro picture of the socio- politico and economic forces shaping the health of the people. As the out-of-pocket expenditures on medicine is very high, hence the role of pharmaceutical industries in influencing the nature of practice especially the prescriptive practice of doctors, needs to be understood. In a state like Bihar which has socio-economic backwardness, poor public health infrastructures, lack of health personnel, and where out-of-pocket expenditure on medicines is high. Therefore, the role of pharmaceutical industries on the nature of practice needs to be understood.

It is observed that before the Christian era Indian science and technology in various fields of science was very much advanced and it was a source of learning for the western world who built on it further. However, such advancements and growth were not able to sustain themselves due to changing political power in the Indian landscape. Medicine was also not an exception and its nature and form changed with changing political allies and economic interests. With the arrival of the British East India company, marginalization of indigenous medicine started in the nineteenth century. This marginalization continued post-independence and the western medicine dominated the health system in India. However, inspite of the continued dominance the patron of indigenous medicine worked hard for professionalization, standardization and sustenance of it. Anther reason for the survival of the indigenous medicine was that it is popular among the masses for its low-cost, and better alleviation of suffering than western medicine.

Owing to the push and pull of western pharmaceutical companies and changing socio-political environment, poor people in Bihar are likely to suffer. The high cost of western medicines because of the companies' huge spending in marketing and promotions increases the out of pocket expenditure of the people. The entry of both global and local pharmaceutical companies dealing with western medicines began a new era of marketing and promotion where doctors became the prominent customers of these pharma companies. The medical community receive inducements in the form of cash, travel grants to foreign locations and other pecuniary benefits from these pharma companies for writing prescriptions of their costly drugs.

This study aims to understand the role of pharmaceutical companies in influencing the prescriptive practices of doctors, and in turn how it impacts the nature of western medical practices that increases the out-of-pocket expenditure of people. How this whole process influences the indigenous medical practices. The researcher tried to understand this problem with the help of ethnographic study. Data was collected with the help of purposive snowball sampling technique in Patna and Saran district in Bihar. Ethnographic tools like interview guide were used to interview medical representatives (MRs), doctors, pharmacist, quacks, and patients to understand the reality of medical practices in the state of Bihar.

The drugs or medicines have a channel of movement right from the company to its end users which is known as drug supply chain. The drug supply chain is one of the crucial determinants of the price of medicines. However, another important factor that influences the price of medicine and its sale, is prescription generation. It also influences the OOPE of the patients. It is a known secret that a large share of pharmaceutical companies' budget is spent on doctors and other healers with prescribing powers as they are considered as the gatekeepers to the sale of medicines. Therefore, marketing through prescription generation is very essential and indispensable for pharmaceutical companies. It is well known that medical representatives appointed by pharmaceutical companies are the important conduits for promoting their drug among doctors and check for the problems in the drug supply chain. These companies adopt various ethical and unethical strategies to promote the sale of their drugs through prescription generation. In the present study it was found that:

Bihar, West Bengal and Orissa belt and North eastern states provide a very huge market for these pharmaceutical companies. The pharmaceutical companies earn huge

profit through sale in volumes of their drugs. As India and specially these regions have a price sensitive market, so pharmaceutical companies reduce the price of their drugs and earn profits through selling large number of drugs. The reason for this is that people in these belts are poor and illiterate. The access to public health services and their quality is also very poor. Increasing the generation of prescription for their drug is the main motive of pharmaceutical representatives.

Each drug division of a pharmaceutical company employ a group of MRs who are posted in such a way in the state of Bihar that they cover each and every nook and corners of the state where a "prescriber" of their product is located. These prescribers may be MBBS or specialized doctors or quacks or indigenous practitioners prescribing western medicine.

The MRs are assisted by an army of people working at the background to equip them and train them with all the necessary skills on each and every aspect of marketing to generate prescription from the prescribers. The MRs are trained in– drug use, skills to understand their customers, product knowledge, good communication skills, smart personality and appearance, good in local influence and local language etc.

The prescribers, MRs and retailers work in a symbiotic relation to increase the sale of a pharmaceutical drug. It is interesting to note that pharmaceutical companies consider prescribers, -doctors and quacks as their customer and not the patients who actually buys the medicine and consume them. For pharmaceutical companies, whoever prescribes their drugs is their customer.

Almost all the doctors agreed that they are dependent on MRs for drug knowledge and new discoveries in medical field and therefore cannot avoid meeting them. They are afraid of being ostracised from this culture of MR visit and gifts giving. Government doctors also in order to oblige the MRs also prescribe costly pharmaceuticals which the patient has to buy from the private pharmacy.

MRs follow aggressive marketing strategies in private institution, which is very less in public institution. There is a huge price difference between the branded medicine and the generic medicine of the same salt combination. Some medicines are 2 times - 50 times costlier than its generic counterpart. According to WHO, about 65% of the Indian population lack regular access to essential medicines. The doctors also under the pressure or lure of the pharmaceutical marketing tactics prescribe branded

medicines. The patients on the other hand do not even know that its generic is cheaply available and they can buy it from any shop.

The poor public health care facilities further push the poor population to private sector, which further increases their out-of-pocket expenditure especially on medicine. The dependence on quacks for low cost of health care, sometimes becomes dangerous for the people. The private health care practice has lesser regulation and control and the unabated aggressive marketing practices of pharmaceutical companies in private sector further complicates the health and socio-economic situation of the poor population of Bihar.

Another impact of pharmaceutical industries is that they are reducing the number of indigenous practitioners by training them into western medicine. In the disguise of promoting their pharmaceuticals to the doctors, they are training and increasing the number of quacks.

As the global pharmaceutical companies are looking at India for market growth. As the people are battling for the improvement in their health, health care access and expenditure, the unethical promotion of the pharmaceutical companies and their marketing practices complicate their situation further. Medicine and health care has become a commodity for profit making and those who have money and political power dominate the medical systems. A profit-based health market is creating more of inequality than equity and the insurance system is creates more or such inequality. Therefore, health should be view as a right and health care should be in the hands of the government. It is recommended that pharmaceutical companies must be regulated and audited by government or top auditing firms. It is further recommended that people should be educated about iatrogenic effect of medicines and more public awareness needs to be developed about availability of generic medicines of the same salt combinations. It is important to note that the efficacy of indigenous medicines is widely known among people of Bihar however due to lack of research data on efficacy they fall behind in claiming the good results. Covid -19 has demonstrated that indigenous medicines across the world have done wonders in the face of adverse situation. The health budget needs to be increased and specially the budget of Ministry of AYUSH, so that medical pluralism reduces the burden of government health system and gives more better choice to people. Infrastructural development and Information Education and Communication would attract more people to AYUSH.

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ABBREVIATIONS

AIIMS	All India Institute of Medical Sciences
AM	Alternative Medicine
ANM	Auxiliary Nurse Midwife
APA	American Psychological Association
ASHA	Accredited Social Health Activist
AYUSH	Ayurveda, Yoga, Unani, Siddha and Homeopathy
BAMS	Bachelor of Ayurvedic Medicine and Surgery
BHMS	Bachelor of Homeopathic Medicine and Surgery
BIMARU	Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh
BMSICL	Bihar Medical Services and Infrastructure Corporation Limited
BPL	Below Poverty Line
BUMS	Bachelor of Unani Medicine and Surgery
C&F/ CFA	Carrying & Forwarding Agent
CAM	Complementary and Alternative Medicine
CBHI	Central Bureau of Health Intelligence
CBR	Crude Birth Rate
CDSCO	Central Drugs Standard Control Organisation
CHCs	Community Health Centres
CMC	Calcutta Medical College
CME	Continuing Medical Education
CSSM	Child Survival and Safe Motherhood
DALYs	Disability Adjusted Life Years
DCGI	Drug Controller General of India
DNA	Deoxyribonucleic Acid
DoB	Date of Birth
DoP	Department of Pharmaceutical
EAG	Empowered Action Group
FCI	Finance Commission India
FDA	Food and Drug Administration
FMCG	Fast Moving Consumer Goods
FSD	Female Sexual Disfunction
GDP	Gross Domestic Product

GMC	'General Medical Council'
GOBI	Growth Monitoring, Oral Rehydration Treatment, Breastfeeding, and Immunization
GOBI-FFF	Adding Food Supplementation, Female Literacy and Family Planning
GOI	Government of India
GOs	Government Organisations
HIV	Human Immunodeficiency Virus
ICPD	International Conference on Population and Development
IEC	Information Education and communication
IFA	Iron and Follic Acid
IGIMS	Indira Gandhi Institute of Medical Sciences
IIPS	International Institute for Population Sciences
IIPS	International Institute of Population Sciences
IMR	Infant Mortality Rate
IMS	Indian Medical Service
ISM	Indian System of Medicine
ISM &H	Indian Systems of Medicine and Homeopathy
LBW	Low Birth Weight
LHV	Lady Health Visitor
LPG	liberalisation, privatisation and globalisation
MBBS	Bachelor of Medicine and Bachelor of Surgery
MBP	Market-Based Pricing
MCH	Maternal and Child Health
MCI	Medical Council of India
MD	Doctor of Medicine
MDR	Multi-drug Resistance
MLA	Member of Legislative Assembly
MNCs	Multi-National Companies
MoHFW	Ministry of Health and Family Welfare
MP	Member of Parliament
MR	Medical Representatives
MSW	Master of Social Work
MTP	Medical Termination of Pregnancy
NFHS	National Family Health Survey

NGOs	Non-Government Organisation
NHM	National Health Mission
NHP	National Health Policy
NHP	National Health Policy
NIHFW	National Institute of Health and Family Welfare
NPPA	National Pharmaceutical Pricing Authority
NPPP	National Pharmaceutical Pricing Policy
NRHM	National Rural Health Mission
NRHM	National Rural Health Mission
NSS	National Sample Survey
NUHM	National Urban Health Mission
OBC	Other Backward Caste
OOP	Out-of-pocket
OOPE	Out-of-pocket Expenditure
OOPE	Out-of-pocket Expenditures
OPD	Out-Patient Department
OTC	Over the Counter
PHCs	Public Health Centres
PMCH	Patna Medical College
PMCH	Patna Medical College
PTI	Press Trust of India
R&D	research and development
RCH	Reproductive Child Health
RMSC	Rajasthan Medical Service Corporation
RNA	Ribonucleic Acid
RSBY	Rashtriya Swasthya Bima Yojana
SC	Sub Centre
SLAs	State Licensing Authorities
SMS	Subordinate Medical Services
TB	tuberculosis
TBA	Traditional Birth Attendant
TFR	Total Fertility Rate
TMS	Temple Medical School
TRIPS	Trade-Related Aspects of Intellectual Property Rights

TV	Television
UCPMP	Uniform Code for Pharmaceutical Marketing Practices
UK	United Kingdom
UP	Uttar Pradesh
US	United States of America
USD	US Dollar
VHSNDs	Village Health, Sanitation, and Nutrition Days
WHO	World Health Organisation
WTO	World Trade Organisation

CHAPTER 1

WESTERN MEDICINE, PHARMACEUTICAL MARKET AND MARGINALISATION OF INDIGENOUS MEDICINES

Health care globally has flourished as an industry with western allopathic medicine being the dominant system of practice. Both the public and private health care has emphasized on western medicine being the one and only solution to the health problems of people. The advancement in medicine, medical technology and pharmaceutical drugs has indeed given solutions to a lot of health problems which otherwise was impossible, like invention of vaccines, heart transplant surgery, chemotherapy, laser surgery etc. It has indeed raised the life expectancy of people and reduced their sufferings. The ability to test the efficacy of medicine and vaccines through different clinical research methods, ability to reproduce the same research results, practice of same kind of clinical treatment on all the patients exhibiting similar symptoms, irrespective of their body type, has given scientific and standardized status to Western Biomedicine.

1.1 Dominance of Western Medicine and Its Consequences

An umbrella of western medical health care institutions in the form of primary, secondary, and tertiary care institutions became part of the national health system and institutions of varied size were distributed across rural and urban areas. Parallel to these the private health care institutions also developed on the same model of western medical health care. This had its own consequences on the health of the people. As Illich (1976) says the development of western medicine has a negative bearing on health of the people, leading to side effects. According to him new set of problems which further need medical interventions, are the iatrogenic effects of medicine. For instance, the medicines and the antibiotics that are given for the symptomatic treatment of the diseases are known to have side effects. For e.g. Antibiotic Azithromycin is known to have side effects like diarrhoea, nausea, vomiting, change of taste, tinnitus, vertigo and pancreatitis[1]. And these problems in some patients need further medical attention. Infection developed in the hospital during treatment of some other disease and out-of-pocket expenditure (OOPE) incurred during treatment of a

[1] https://www.nhs.uk/medicines/azithromycin/side-effects-of-azithromycin/

disease, disrupting the whole economic planning of a patient's family are other examples of iatrogenic effects of medicine.

Since independence there has been significant achievement in health status of India. "Life expectancy has gone up from 30 years in 1946 to 65 years in 2017, crude birth rate (CBR) has been reduced from 37 in 1970 to 21 in 2017 (per thousand population), Infant Mortality Rate (IMR) is down from 146 in 1946 to 34 in 2017 (per thousand live births) and crude death rate has decreased from 39 to 6.4 between 1950 and 2017 (per thousand population). The year 2014 marked a remarkable moment in Indian public health history as India was declared by World Health Organisation (WHO) as the fourth polio free nation in the world (Kumar & Kishore, 2020). The growth and development in the health sector and the rapid gain in public health indicators at present in comparison to the time when India got independence, however does not allow us to be content. At present there are huge differences in the health indicators between the states, within a region, between various social groups, as well in urban and rural areas. There is marked increase in lifestyle diseases. "About 40-45 percent of Indian population suffers from serious diseases or illness. And about 40 percent of the Indian population live below poverty line (BPL) – out of which more than 75 percent lives in rural areas." (Kumar & Kishore, 2020)

1.2 Public Health Infrastructure Inadequacy

Excessive dominance and dependence on western medicine has not altered the health situation towards better for a majority of the population in India, especially the vulnerable population. Majority of medical facilities i.e., about eighty percent of the total medical facilities are available in urban areas, where only 25 percent of the total population lives. However, 40 percent of the urban population lives in slums where health situations are worse than rural areas. Two-thirds of Indian children and more than half of women are suffering from anaemia and malnutrition.

About half of the Indian population is not able to have access to even the essential drugs (Bhargava & Kalantri, 2020). Availability of infrastructure is poor as 54 percent Public Health Centres (PHCs) do not have a labour room and a laboratory; 80 percent PHCs do not have communication and transport facilities. 58 percent of the PHCs have facilities for conducting deliveries which are availed by 30 percent of pregnant

women (70 percent of total deliveries are still conducted at home by the traditional Dai); 6 percent of PHCs conduct Medical Termination of Pregnancy (MTP) and only 22 percent provide antenatal care (International Institute of Population Sciences [IIPS], 2005). Even, the percentage of total health infrastructure in rural areas has been declined over the years such as in 1951, 39 percent of total hospital were in rural areas which becomes 30 percent in 2003-04, similarly hospital and dispensary's beds 23 percent in 1951 becomes 21 percent, dispensaries become 50 percent from 79 percent during the same time. (Kumar, 2015).

In India, hospitals, dispensaries, public health centres and other medical facilities present, are not sufficient to cater to the growing needs of India's substantial population. According to the Planning Commission of India, 20 percent of the population lives in urban areas with 70 percent of the total hospital beds and 80 percent of doctors in the country (Kumar, 2015). The inadequacy in public health infrastructure led to decline in demand for public hospitals or dispensaries.

The skewed presence of health care services in urban areas as compared to rural areas in India and the absence of better functional health services, either public or private, is leading to various unscrupulous practices of western medicine. For instance, the skewed doctor patient ratio in rural areas is leading to bizarre types of western medical practices. As Kale (1996) states, that cut practices among doctors continues in many forms such as

a) giving a share of fees to the referring doctor,
b) unnecessary referral of patients to testing laboratories or consultants; just to ensure some extra fees from the laboratory or consultant,
c) sponsoring a travel or conference for a doctor by a drug company in return for prescription of its drugs.

The inadequate manpower of doctors in public sector hospitals is also a concern for health authorities. The doctor-to-population ratio in India is 1:1511 (Finance Commission India [FCI], Vol. I, 2020). Furthermore, the infrastructure required in the hospitals, like medicine, furniture and equipment, are not adequate to serve the population. Compounding the problem, government spending on healthcare services is not up to the World Health Organization (WHO) norms of gross domestic product

in healthcare. Given so much of dependence on Western medicine, the availability of services and infrastructure is grossly inadequate to cater to the needs of second highest populous country-India.

The political establishment of western medical health care as dominant system led to increased demand for it from the people, especially in private sector. There is higher inclination among people towards Western medical treatment be it public or private sector. According to National Sample Survey (NSS) 71st round data, about 90% of people are willing to opt for Western medical treatment in both public and private sector. According to the National Family Health Survey (NFHS) 4 India report, about 51% of the people seek health care in the private sector and about 45% seek health care and treatment in the public sector. More of the urban people about 56% seek health care in private sector than the rural people which is around 49%. In private sector doctors and clinics are most frequently visited instead of hospitals International Institute for Population Sciences (IIPS & ICF, 2017). The states where highest number of households use private sector is UP (80%) followed by Bihar 78%. It is surprising to see that people rich or poor, prefer to pay out of pocket to private practitioners even in the presence of free government health care institutions (Berendes et al., 2011). The private sector has become a vibrant force in India's healthcare industry, as it accounts for almost 74 per cent outpatient care and 65 per cent of inpatient care in the urban regions of the country (Gandhi, 2021, Chapter 5, p.162). The most common reason for not using government health care is poor quality of services and the government health care centres are located at a far-off distance, hence accessibility is an issue. Another prominent reason is long waiting time to see a doctor or to get medicine if at all it is available. Table 1.1 demonstrates some of the important metrics about usage and non- usage of government hospital in some of the prominent states of India.

Table 1.1 Reasons for not using the Public Sector Facilities

State	Percentage of people not using Govt hospital	No nearby facility	Timing not convenient	Absenteeism of health personal	Waiting time too long	Poor quality of care
India	55.1	44.6	26.4	14.8	40.9	48.0
Delhi	42.5	44.4	33.4	13.3	67.1	34.1
Haryana	60.9	47.4	33.3	23.3	59.1	53.8
Punjab	72.9	41.9	26.4	17.1	66.3	57.5
Rajasthan	34.6	37.6	23.7	13.7	39.9	57.0
M.P	59.6	44.7	28.4	18.0	40.6	48.3
U.P.	80.1	47.7	16.9	11.5	35.7	61.1
Bihar	77.6	42.6	33.8	17.8	38.6	59.6
Odisha	11.3	48.4	13.9	8.7	23.1	34.6
Maharashtra	63.7	45.7	24.5	12.1	40.9	36.4
Kerala	32.5	37.7	28.8	11.4	47.1	25.5
Tamil Nadu	36.7	35.0	33.7	15.4	46.2	37.2

Source: NFHS -4 (IIPS and ICF, 2017) http://rchiips.org/nfhs/nfhs-4Reports/India.pdf accessed on 19.12.2022

1.3 High Out-of-Pocket Expenditure Especially on Medicine

There is decline of patients in the public health centres due to inadequate facilities and poor quality of care. This is forcing them towards private hospitals and clinics which intern leads to high out of pocket expenditures of the people. According to Jana and Basu (2017) the medical expenditure for the outpatient care has increased by 104% due to increased dependence on private sector in health care. These expenditures are mostly spent out of pocket (OOP) of the patients. Such high out-of-pocket

expenditures (OOPE) are catastrophic for the social and economic life of the patient and his family. Various national health insurance schemes like Rashtriya Swasthya Bima Yojana (RSBY), Ayushman Bharat etc are not able to cover the OOP expenditure of the outpatient care which is the main contributor of the medical expenses of the people (Jana & Basu, 2017). The contributory social health insurance is not appropriate for the countries like India where a large segment of the work forces, close to 93 percent is working in the unorganized sector and a vast number are below or near the poverty line (Kumar, 2015).

Studies have shown that in most parts of developed and in developing world OOP expenditure in government and in private sector is often high and is detrimental for the poor (Mclktyre et al., 2021; Kumara & Samaratunge, 2019; Rahman et al., 2013; Baru et al., 2010). According to Baru et al., (2010) in India about 80 per cent of the total health expenditure is through out-of-pocket (OOP) payment. According to Finance Commission India (2020) 70% of health expenditure is through out of pocket and this is one of the highest globally. The OOP expenditure includes payment for doctor's consultation, medicines, medical tests, and travel. The loss of income due to illness is not calculated in OOP payments. The largest component of OOP expenditure is on the purchase of medicines. Estimates from the National Sample Survey (NSS) for 1999-2000 shows that 70% of the total OOP expenditure in urban and 77% in rural areas are spent on medicines (Baru et al., 2010).

About 38 million Indians of low- and middle-income households are pushed into poverty every year in rural and urban areas on account of OOP expenses on health. (Selvaraj et al., 2018). Ahlin et al. (2016) aver that hospitalisation is presumed to be the most important reason for pushing low- and middle-income households to the depths of poverty. They say that the expenditure on drug is however the larger share of the OOP expenses, accounting for 61% to 88% of the total OOP spending. Medicines or pharmaceutical drugs are thus "one of the most important drivers of quality, safety, equity and cost of care (Ahlin et al., 2016). The over prescription or liberal prescription by the prescribers (Porter & Grills, 2016) and rampant use of over the counter (OTC) medication (Marathe et al., 2020) further contribute to OOP expenditure on health which is very damaging for the low and middle income households financially as well as on their health.

1.4 Pharmaceutical Market and Western Medicine

Although expenditure on medicine is one of the major chunks of medical expense of the people the pharmaceutical market is one of the fastest growing markets in the world. The aggressive marketing strategies of pharmaceutical industries have led to further medicalisation of health, pushing people further down in their financial status and class. The Out-of-Pocket (OOP) expenditure of poor be it in developed or developing countries is pushing them further back to poverty and ill-health and this vicious cycle continues, giving pecuniary gain back to the pharmaceutical lobby. In developing countries for example, as Čada says that the average per capita spending on medical drugs in the Czech Republic increased to more than seven folds from 1991 to 2003 whereas the "average per capita food expenditure in an average household rose approximately two-fold over the same period of time and the living costs of employee households rose 3.6 times in 1990–2002" (Cada, 2016)

The global pharmaceutical industry is the third largest in the health industry next to medical equipment industry and health care services market. According to IMS Health[2] pharmaceutical industries' main markets – north America, Japan, and Europe accounting for 82% of drug sales are under serious pressure. Their annual growth is increasing at a sluggish rate. The policy change to promote the growth of generics in these markets is further going to make a dent in the sales of major global pharmaceutical companies (PricewaterhouseCoopers, 2010) Hence the global pharmaceutical companies are looking for avenues in the developing countries to increase the size of their market. As India has one of the fastest growing pharmaceutical market the global pharmaceutical companies are turning to India to explore their growth potentials. **"**The Indian pharmaceutical industry is third largest in the World in terms of volume and tenth largest in terms of value. The total size of the industry (including drugs & medical devices) is around US$43 billion (Rs.3,01,000 crore) and is currently having a growth rate of 7-8% in drug sector and 15- 16% in medical device sector. India is the largest provider of generic drugs globally. Access to affordable Human Immunodeficiency Virus (HIV) disease treatment from India is one of the greatest success stories in medicine. India is one of

[2] IMS Health was an American company. IMS (Intercontinental Medical Statistics) and Quintiles merged in 2016 and this was renamed IQVIA in 2017.

the biggest suppliers of low-cost vaccines in the world. Because of low price and high quality, Indian medicines are preferred worldwide, thereby rightly naming the country "the pharmacy of the world". The Pharmaceutical sector currently contributes around 1.72% to the country's gross domestic product (GDP) (Department of Pharmaceuticals, 2020). The Indian companies dominate the domestic market in selling the generics. About 97% of drugs sold are already off patent. As the global market is opening for generics and vaccines, the Indian pharmaceutical companies are going to give a tough competition to the global pharmaceutical companies (PricewaterhouseCoopers, 2010).

The growth rate of pharmaceutical market in India is driven largely by volume because of low paying capacity of the people. The institutions like hospitals and government are biggest customers of pharmaceutical industries. India is the third largest producer of drugs by volume in the world and it ranks 13 by value of the global drugs[3].

As Indian market is price sensitive hence the global pharmaceutical companies have considered differential pricing strategy wherein, they can gain profit by volume-based pricing strategy. In reaction to the price sensitive Indian market some multinational and national pharmaceutical companies have already reduced their drug prices to increase affordability.

As the pharmaceutical industries are largely private in India with the public pharmaceutical industries at the verge of closure, the commercial nature of private pharmaceutical industries creates health inequity. It is a known secret that pharmaceutical promotions by the companies, influence the prescriptive practices of doctors, which goes unchecked and unregulated. There are many examples of inappropriate and expensive drug being promoted for use in third world, which produce dangerous side-effects (Van der Geest & Whyte (Eds.), 1991). These lead to further economic drain in countries already suffering from limited resources (Doyal and Pennell, 1979). Millions of people are pushed below poverty line every year due to over expenditures on medicines. So, the hegemonic presence of western medicine

[3] https://www.investindia.gov.in/sector/pharmaceuticals

not only creates ripples within itself but it also impacts and marginalises the other systems of medicine.

1.5 Marginalisation of Indigenous Medicine

In India there has been constant effort since the advent of British to introduce Western Allopathic system as the mainstream health care in India. Traditional medicines which were highly advanced in the beginning of the twentieth century assisted many European anthropologists and botanist and zoologist in learning about tropical herbs and medicine. Western medicine learnt a lot on tropical medicine from the Indian Indigenous healers and indigenous pharmacopeia and later to establish itself as the superior medicine consciously marginalised it as unscientific especially after the modern educational reform brought by Lord William Bentik in 1835. Post-independence the indigenous medicines were further marginalised, with the establishment of modern western medicine as the dominant system of practice. Ayurveda, Yoga, Unani, Siddha and Homeopathy also known as AYUSH medicines are considered as the major systems of indigenous medicines in India. These indigenous medical systems also developed alongside Western Medicine but merely as a subsidiary and substitute to western medical health care.

Most of the national health programmes are based on the curative approach of western medicine. One of the reasons for the dominance of western medicine in our national health programs is that - same treatment plan can be administered on all patients irrespective of their social and cultural background, irrespective of other diseases they have and their body characteristics. On the contrary indigenous system of medicine like Ayurveda, Siddha, and Homeopathy are patient specific so implementation of National health programs based on it would be difficult.

Analysis of NSS 2014 data by Jana and Basu (2017) reveal that 90 % of people are inclined towards western medicine in both urban and rural areas and use of other systems of medicines embedded in AYUSH (Ayurveda, Yoga or Naturopathy Unani, Siddha and Homoeopathy) was around 5-7% in both rural and urban areas. However, there are unrecorded or unresearched evidences of people depending on religious practitioners, local indigenous practitioners, and people belonging to the poor socio-economic strata depend heavily on them. Regarding medical pluralism, Gupta's

(1998, as cited in Sujatha & Abraham, 2009) framework envisage that a third-world population's cultural obduracy or ignorance cannot be justified as a reason for their use of numerous methods of alleviation, which was a natural human response to misery in general. It also wasn't caused by a lack of suitable allopathic facilities, as multisystemic approaches are discovered even in the presence of the best facilities. Additionally, he contends that the coexistence of traditional and modern medicine must instead be viewed as "overlapping instrumentalities" rather than as opposites.

The prolonged presence of western medical practice and its cultural adaptation and constant marketing efforts by pharmaceutical companies has led to penetration of its knowledge even in the remote villages thus creating a demand for it among the villagers. Marginalisation of indigenous medicine as well as people's dependency on it, has continued a paradigm in which both the systems of medicine continue to shape each other, although in a disproportionate ratio. In this backdrop, it is imperative to understand the situation in the state where the present research is located, that is Bihar.

1.6 Medicine, Pharmaceutical Industry and Market in Bihar

Bihar is one of the economically backward states of India with a very high population of 10 lakh crore and high population density. About 68.9% of population of Bihar fall in the poorest wealth quintile as evident in NFHS-5 (IIPS &ICS, 2021). It is the third largest populous state in India. Even though the demographic parameters have improved over the last decade, the burden of ill-health is high in the state. According to NFHS-5 about 55% of women and 76.4% of men (aged 15-49 years) are literate. The figures for rural population are 111 and for urban is 982. Sex ratio for 0-6 years is 916 in Bihar, 912 for rural and 940 for urban population. It is evident that the vulnerabilities during 0-6 years is far enhanced than the adult population. In rural areas the vulnerabilities are more as compared to urban areas for the 0-6 years group. The sex ratio as evident from NFHS-5 is 1090 women/ 1000 men. The Total Fertility Rate (TFR) improved from 4.0 in 1998-99 (NFHS-3) to 3.4 in 2015-16 (NFHS-4) and further to 3.0 in 2019-21 (NFHS-5). The Infant Mortality Rate (IMR) (death/ 1000 live birth reduced to 62 in NFHS-3. This further reduced to 48 in NFHS-4 and 47 in NFHS-5. Institutional delivery improved from 64% in NFHS-4 to 76% in NFHS-5. The positive trends are also visible in the deliveries assisted by health personnel. It

improved from 70% during NFHS-4 to 79% in NFHS-5. Institutional delivery in Bihar was 76% and in Patna district it was 89% and in Saran district, it was 73% during NFHS-5. Institutional deliveries have improved in Patna as it is urban region with good health care institutions. Saran being one of the peripheral districts has comparatively lesser institutional deliveries. The trends in vaccination coverage (percent children aged 12-23 months receiving vaccination) has also improved from 33 (NFHS-3) to 62 (NFHS-4) and further to 71 (NFHS-5) (IIPS &ICS, 2021). Life expectancy is 68.9 years in Bihar. Per capita health expenditure is 616, whereas national average is 1218. In spite of the marginal improvement in health of the people of Bihar, the health and education indicators of Bihar are very low as compared to national average (FCI, 2020, Vol IV).

The state gross domestic product which defines the economic well-being of a state is low in comparison to other states and their population. Studies done by Jana and Basu (2017) have shown that there is strong correlation between literacy and health status. The higher the literacy rate the higher is the perception of illness and augmented with it is increased desire to utilise available health care options. Friedman and Somani (2002) in their study done in tribal villages of south Bihar, also found that there is acute shortage of health awareness and health education among the villagers in the basic areas of health and disease. Hence in Bihar due to low education level the general prevention and precaution of the common diseases were low especially for malnutrition, diarrhoea, maternal health and infant health.

Jana and Basu (2017) in their study found that both rural and urban sectors of Bihar lag far behind Kerala in terms of public health care delivery. The poor performance of public hospitals in Bihar is revealed by the fact that use of public health care facilities for treatment of ailment was lowest in the rural areas of Bihar (5%) compared to other states especially Kerela. They further found that 48.8% residents of Bihar felt that required quality services were not available at government facilities and therefore they availed services from private doctor/clinic, as compared to 39.8% for Kerala. The government facilities are less used because of reasons like- too far away, long waiting times, poor quality, absence of services etc.

The doctors, nurses, pharmacists, health care personnel and hospital beds in government hospitals are all below national average and many of the post are vacant.

For example out of the 325 posts of government allopathic doctors only 166 are filled. Out of 1625 posts of Auxiliary Nurse Midwife (ANM) only 375 are filled. Out of the 325 post of pharmacist only 94 are filled (FCI, 2020, Vol.IV). The doctor population ratio in Bihar is 1:17,685 whereas the national average is 1:11,097 (Press Trust of India [PTI], 2018). It can be clearly said that Bihar needs a major upheaval in the health care sector in terms of provisioning, medical personnel and policy interventions ensuring quality and quantity (Jana & Basu, 2017).

According to NFHS-4 the states where highest number of households using private sector is Uttar Pradesh (UP) (80%) followed by Bihar 78%. The most common reason for not using government health care is poor quality of services and the government health care centres are located at a far-off distance, hence accessibility is an issue. This is followed by long waiting time to see a doctor or to get medicine if at all it is available (NFHS 4). It is evident that in Bihar majority of people depend on private sector, that too mostly on the private doctors and clinics. The scenario does not seem to have changed much as evident from NFHS-5 data (IIPS and ICF, 2021).

The cost and burden of treatment are closely tied to access to healthcare. The cost of treatment is the highest in those states where public health infrastructure is least developed and hence private hospitalization and out-patient treatment is highest (Kumar, 2015). Therefore the cost of treatment is very high in Bihar due to poor public health facilities and low per capita expenditure on health (Gandhi, 2021).

As people mostly avail private health care services, hence they mainly incur out-of-pocket expenditures (OOPE). The medicines make up the majority of OOP expenses. According to estimates from the National Sample Survey (NSS) for 1999–2000, 77% of OOP spending in rural areas and 70% in urban areas is on medications (Baru et al., 2010). In this background, it is important to take note of the market for pharmaceutical drugs in Bihar. According to Kunnathoor (2017), Bihar has a drug market worth 600 crores. About 99% of medicine requirements by state is procured from manufacturing companies located in other states. On the contrary, there are about 150 pharmaceutical manufacturing companies in Bihar supplying drugs to other states.

1.7 Literature Review

1.7.1 Political Economy of Health and Medicine

When we talk of Western Medicine, we view it as scientific and therefore neutral, not influenced by social, cultural, economic and political processes. Yet research undertaken by anthropologists and sociologists has revealed that medicine is not neutral. To widen her understanding and perspective on health and western medicine, the researcher tried to look at how they have been viewed and understood by academicians of different times.

There is continuing absence of mainstream debate about the ways in which politics, power and ideology influences people's health (Bambra et al., 2005). It is in late 20th century; Western Medicine began to be viewed as socio-economically and politically influenced or motivated. In early 1970s a growing group of sociologists began viewing western medicine and health in the context of political economic framework.

According to Baer (1986) good health is defined in political terms not only as a state of physical or emotional well-being but as 'access to and control over the basic material and non-material resources that sustain and promote life at a high level of satisfaction'. This means that a key component of health is power and control over the resources that maintain and promote good health. Thus, from a political economic perspective, ill, ageing or physically disabled people are marginalized by society because they do not have control over the basic resources that would help them maintain good health and also because they do not contribute to the production and consumption of commodities. Other marginalized groups, such as women, people from non-English-speaking backgrounds, non-whites, the aged, the unemployed and members of the working class, tend to endure greater social and economic disadvantage than those from privileged groups, have restricted access to health care services and suffer poorer health as a result.

During 1970s and 1980s a growing group of sociologists studied various aspects of medicine mostly in the developed countries. In the eighteenth-century rising predominance of biomedical model of health and its reducing focus on the disease etiology was criticized by many sociologists and anthropologists of medicine. One such endeavor was by Elling (1977, as cited in Baer, 1986) who attempts to trace the

generation of illness within the international context of the capitalistic world system. He argues that the economic underdevelopment of third world nations was due to colonialism by the European countries and later overtaken by the multinational companies. As a consequence, there was general low level of health among populations, malnutrition and exposure to hazardous industrial products. Brener (1973, as cited in Baer, 1986) talks about the cycles of economic growth and recession in capitalist countries which brought not only physiological distress but also mental illness. The works of Sidel and Sidel (1983), Guttamacher and Danielson (1977), Navarro (1976), Krause (1977), Doyal (1979), Conrad and Kern (1981), Mckinlay (1984) (as cited in Baer, 1986), supporting the above augment show how public health is dependent on a political and capitalist system and structures of a country.

Arguing for the capitalist production of illness Illich (1976) says that modern medicine creates conditions that requires further medical intervention and treatment. In his classic and highly controversial work Limits to Medicine - Medical Nemesis: Th e Expropriation of Health, Illich (1976) calls this phenomenon iatrogenesis. Powerful drugs alter the historically rooted culture and establish a new attitude in which body is seen as a machine. Medicine has become an institution of medical gaze to define who is ill and who is not. Individual has lost his ability to take care of himself when he is sick. Only the doctor can define what constitutes sickness, who is sick and how he can be cured (Illich, 1976).

Lupton (2003) further develops Illich's thesis and call it as Political Economy of Medicine. There is symbiotic relation between capitalism and health care: "capitalism produces health needs which are treated in such a way as to obscure their origins and demands the consumption of commodities to secure the healing process, which in turn supports the capitalist system of production". On the one hand, modern states subject their citizens to social control in the form of numerous tests, vaccination requirements or by organising individually targeted campaigns, on the other hand, governments fail to regulate large companies so that they would create a more healthy environment, they do not take the necessary action against the production and marketing of unhealthy goods such as alcohol or tobacco, and do not act to increase accountability in the testing and development of pharmaceutical drugs. "Medical care thus tends to

be oriented toward the treatment of acute symptoms using drugs and medical technology rather than prevention or the maintenance of good health" (Lupton, 2003).

Doyal and Pennell (1979/1983) explore the changing patterns of health and illness and the evolution of medical practice both in Britain and in the Third World. They argue that the growing health problems and the evident failure to combat them in the third world countries must not be seen as 'natural' and unavoidable but should be seen as a consequence of particular form of capitalist expansion. The policies of international health agencies have served to reinforce a reliance on cosmopolitan medicine that with its largely curative approach, cannot provide services for the masses of people.

Today in the economies like ours which stand at the crossroads of welfare state and liberalisation, privatisation and globalisation (LPG) induced capitalist state, health has become a commodity which can be bought by those who have the power to control it or buy it. In other words, if someone from underprivileged class get sick, they have lesser access and fewer chances for survival. The proliferating corporate hospitals are in turn paving way for the health insurance industries. The medical instrument, technology, drugs and so on join hands with the medical fraternities for wealth accumulation, making 'Health' a farfetched commodity for the poor and marginalised.

In the twenty first century the political economy framework of looking at health and medicine seem to fade and a new concept of medical gaze and medicalisation developed as a consequence of development in medical technologies.

1.7.2 Medicalisation and Medical Gaze

The biomedical model of health shifted home medicine to hospital medicine. Medicine became more and more specialised, medicalised, technocentric, and individualised. The cost of health care is soaring high in twenty first century. Čada (2016) states that apart from analysing the economic and public policy and the perspective on marketisation of health, we also need to look into the medicalisation perspective to understand the reasons for this soaring cost.

The social historian and theoretician of medicine John A. Pickstone (2000, as cited in Čada (2016) describes the second half of the twentieth century as a period marked by a shift from "biographical medicine" to "techno-medicine". In Pickstone's view,

traditional biographical model of medicine centred on the doctor-patient unit. Gradually in the later part of the twentieth century the emphasis of medicine shifted towards 'the power of 'the medical gaze'…….'. With the development of medical technologies like X-rays, genetics, miniature cameras and telescope which could go inside the human body and show the inner anatomy explicitly; 'the power of medical gaze' further strengthened and a new concept of medicalisation emerged. Peter Conrad (1992, as cited in Čada 2016), describes medicalization as "a process of defining previously non-medical problems in terms of medical pathology. The term first entered sociological literature in the 1970s. As a result, there has been an increase in the number of health problems, of medical drugs prescribed and developed, and of medical specialisations. Medicine and its gaze managed to spread into a number of fields from which it had previously been absent such as genetic testing and neuroimaging techniques. Newer health problems emerged which otherwise was not known or cure for certain diseases emerged which was not possible before like twin-to-twin transfusion syndrome, neonatal medicine, live organ transplant etc. Along with it the cost of health care also soared.

As we see that since 1970s the medicalisation critique took a centre stage in the sociological writings of medical profession. Lupton (1997) compares and contrasts the orthodox critique and Foucault's critique on medicalisation. She avers that the orthodox medicalisation critique arose from Marxist perspective and liberal humanism during 1960s and 1970s. The principle characteristic of these approaches were individual freedom, human rights and social change. Lupton (1997) by citing works of Irving Zola (1972), Eliot Friedson (1970), Ivan Illich (1975) - state that the orthodox medicalisation critique contend that social life and social problems had been increasingly medicalised. It has diminished the layperson's capacity to deal with his own health problems. The individual's autonomy on his own health is constrained by powerful health and medical professionals. Medicalisation seems to encourage dependency of the lay persons on the medical professionals of contemporary scientific medicine. This increasing power of scientific medicine have detrimental effects on the exploited social groups who are subjected to inappropriate treatment by drugs and other medical therapies. The medicalisation critique call attention to the fact that patients in general due to their lack of medical knowledge are always in a vulnerable

position of being exploited with little or no power to challenge the authority of the doctors (Lupton, 1997).

However, Lupton (1997) state that there are similarities and differences between orthodox medicalisation critique and Foucauldian concept of clinical gaze of medicine. Both the concept agree that medicine is a dominant institution that has shaped everyday life of individuals and shapes the way in which we live and think about and live our bodies. However, both the concepts disagree on the fact that – how detrimental this state of affairs is for the lay population and what kind of actions are required in response. From Foucauldian perspective those who argue that lay people should be more informed about their medical matter so as to 'take control' of their health from the doctors may be regarded as further medicalising the lay people's life. They argue that by encouraging lay people to actively involved in preventive health and self-care moves medical and health concerns to every nook and corner of everyday life of lay people which transfers medical gaze from clinical room to intense individualistic gaze. Thus, the move towards de-medicalisation will further lead to medicalisation of everyday life including their emotional states, interpersonal relationship, their stress management and life style choices.

It is observed that there is complexity in the debate of medicalisation and de-medicalisation of Human body and thus the above debate makes is difficult to take any position on the issue of medicalisation and Lupton (1997) proclaims that awareness of these difficulties is in itself an important outcome.

1.7.3 Importance of Western Medicine in Medical Pluralism

Mantri (2008) observes that Western medicine has consciously tried to integrate its ancient, patient-centred roots with modern scientific validity. She supports her argument by quoting works on illness narratives by authors such as Susan Sontag, Reynolds Price, and Audre Lorde, which claim that patients in the nineteenth century began to reclaim their voices and therefore power over their bodies. She further argued that the patient rights movement, borrowed from the concurrent civil rights and feminist movements, argued that the patient should be an equal partner with the physician in medical care. In response to these and other pressures to restore patient-centred medicine, medical schools began to revisit holistic medicine. For instance, the

students of American medical colleges are required to study alternative medicine as a part of their curriculum (Mantri, 2008).

Čada (2016) by using the concept of "medicalisation" tries to show how pharmaceutical companies are one of the major spear headers in the process of medicalisation. By giving the examples of three drugs – Prozac, Paxil, and Viagra – their promotion and their use, he tries to show how identities of self are constructed through targeted modification and the act of personal choice are possible by the pharmaceutical companies. A lay person's life is individual but is at the same time determined by social patterns (Skacan, 2013). Hence both the authors show how individuals' choices although made by their own free will but are influenced and shaped by other social structures and actors.

Pharmaceuticals have, in fact, been one of the most significant drivers of medicalization process. "Images of well-being and health are increasingly associated with access to medications," assert Petryna and Kleinman (2006). They argue that one of the synonyms of modern medicine is the pharmaceutical drug.

1.7.4 Pharmaceuticals in Developing Countries- A Critique

In the past few decades, we have seen the publication of numerous books and articles criticizing the role of Pharmaceuticals in the developing countries. In this regard the researcher would be highlighting some of the important publications and discuss the debate between the Marxist and Post-structuralist school of thought and Capitalist school of thought. How this is impacting on the health of the people in the third world countries and the road ahead.

Pharmaceutical market in the developing countries is very large and competitive. In the absence of proper regulatory mechanisms in these countries the pharmaceutical multinationals often adopt various means to promote the sale of their drugs. Silverman's (1976/2021) state that the drug inserts distributed along with the pharmaceutical products in Latin America differs considerably from the drug inserts distributed in United States. The indications for the use of drugs in Latin American countries is far more numerous than in the United States and that their contradictions are fewer. The pharmaceutical companies alter their drug inserts in developing countries to sell more of their products. Medawar (1982) give a detail description of

how Lomotil is useful and given under the supervision of the doctors in developed countries. This has proved harmful and dangerous in the developing countries as it is sold over the counter and freely used for self-medication (Medawar, 1982). The Marxist school of thought often criticize the multinational companies for having ignored the real needs of the developing countries and exploit them by using selling techniques and labelling which are prohibited in the developed markets of USA and UK. To this the capitalists argue that the circumstances in the third world countries are very different. Their health care needs in the rural areas are often rudimentary in the extreme. Their standards in terms of availability of medicines and safety requirements fall short of those for more developed nations. Moreover, it is not the lack of availability of medicines which is their problem rather it is the poor nutrition and sanitation which is their main problem (Teeling-Smith, 1980).

The sale of drugs is often promoted by pharmaceuticals through research, advertisements in journals, Television (TV) or directly through the Medical Representatives or Detail Men. The Marxist argue that through these promotional strategies the pharmaceuticals have created a culture in which the demand for their medicine is more. Sismondo (2004) very clearly explains how clinical trials on Female Sexual Disfunction (FSD) has created an abstract market for pharmaceutical companies. The medical researchers defined a medical problem that required treatment. Subsequently, with the help of the researchers the abstract market is changed into concrete market, where a non-medical problem was changed into a medical one which required treatment based on the innovated drug (Sismondo, 2004). Jeremy Green (2004) describes how the medical representatives or the detail men have been trained to present themselves in front of doctors as information giver or trainer rather than selling their drugs. Marketing to doctors often seems to be helping them to know about the latest research and drugs (Green, 2004). Harder (2005) shows how the pharmaceutical companies through their free samples have conquered the prescriptive practices of the doctors. On the contrary the Capitalist, Teeling-Smith (1980) argues that the sales promotion practices are essential, if progress in pharmaceutical innovations is to be maintained. Huge amount of money is spent by the pharmaceutical giants in research and development the cost of which has to be recovered through patents, brands and sales promotion practices. Nóbrega et al.

(2007) show that drug prices are about 200%-300% higher than their production cost. Therefore, it is evident that the profit margins of the drugs are very high.

The debate between the Marxist and Post-Structuralist school of thought and the Capitalist school of thought is ongoing and never ending. However, the impact of such pharmaceutical practices seems to take a heavy toll on the health of the people of the third world countries. There are many examples of inappropriate and expensive drug being promoted for use in third world, which produce dangerous side-effects. These lead to further economic drain in countries already suffering from limited resources.

In order to overcome these challenges, the developing countries need to adopt a road map for themselves. They need to develop indigenous pharmaceutical companies which would meet their indigenous drug requirement. They need to adopt essential treatment guideline and a list of essential drugs as suggested by WHO. They need to set up strong drug safety and regulatory mechanisms in order to prevent intrusion of banned and wasteful drugs.

1.7.5 Pharmaceutical Industries and Their Marketing Strategies

There is abundance of literature that have explored association between pharmaceutical companies' marketing strategies and physician's prescriptive practices in developed countries such as US, China, Japan, Canada and Saudi Arabia (Hajjar et al. 2017; Grouse, 2014; Buchman, 2012; Zaki, 2014).

It is a well-known fact that pharmaceutical companies allocate a significant budget for direct-to-consumer marketing and advertising (Grouse, 2014; Khazzaka, 2019; Marco et al., 2006). Here the 'consumers' are physicians, as from the pharma company's point of view - physicians or other health care providers are "the key decision makers, gatekeepers to drug sales" (Khazzaka, 2019). Along with the advertisement of pharmaceutical drugs on national televisions or Health magazines and newspapers; the pharmaceutical companies allocate substantial funds for promotion of their drugs among physicians and pharmacists (Grouse, 2014; Hajjar et al., 2017; Khazzaka, 2019). The drug promotion by the pharmaceutical companies to their consumers is in the form of Continuing Medical Education (CME), direct monetary benefits, travel funds, research grants, free samples, journal advertisements, printed product literature

and other gifts, that helps the consumers to increase the prescription of their product (Khazzaka, 2019; Hajjar et al., 2017; Marco et al., 2006, etc).

The health care providers and pharmaceutical companies' engagement is a global phenomenon and according to (Hajjar et al., 2017)- "An estimated 65%, 69% and 99.5% of physicians in US, Canada and Saudi Arabia respectively receive pharmaceutical industry payment". From the open payment program, 2014 data, it was found that "1444 pharmaceutical companies reported paying 6.5 billion USD to more than 6,00,000 physicians and 1100 teaching hospitals in United States" (Hajjar et al., 2017). According to (Khazzaka, 2019) the pharmaceutical companies spent more than 20% of their sales on their marketing and 84% of the marketing efforts are directed towards health care providers, as they are "the gatekeepers to drug sales". She emphasises that the structure of the pharmaceutical companies differs from country to country, however their sales and marketing strategies have international nature.

A thematic review of literature shows that there is direct co-relation between pharmaceutical companies' marketing strategies and physicians prescribing behaviours in India too (Roy et al., 2007; Ingole & Dube, 2010; Bansal & Das, 2005 etc). Medical Representatives of pharmaceutical companies are the common source of information & latest drug updates to doctors (Ingole & Dube, 2010). According to the study done by Ingole & Dube (2010) about 50% of the doctors accept that the medical representatives influence their prescribing pattern. Roy et al. (2007) while examining the alliance between pharmaceutical companies' and doctors, retailers in Mumbai, found that there is an unethical alliance among the said group and unethical activities are practiced at the cost of patients. Bansal & Das (2005) in their study emphasise that unethical practices by the health care providers under the influence of the pharmaceutical promotional practices will increase with increasing competition among the pharmaceutical companies. The unethical practices of pharmaceutical companies in drug promotion are an open secret, that influence the prescription brand of doctors (Bansal & Das, 2005).

A systematic literature review identified moderate to high impact on prescribing and drug dispensing practices around the world (Hajjar et al., 2017; Brax et al., 2017; Lotfi et al., 2016; Khazzaka, 2019). A systematic review of Physician's knowledge

and beliefs in low- and middle-income countries regarding their interactions with pharmaceutical companies found that the physicians believe that such interaction have very less impact on their prescriptive practices (Lotfi et al., 2016). Moreover, the physicians find the impact of such interactions on their own behaviour to be lesser. "Therefore, it seems that the impact of such interactions on prescribing behaviour often escape the notice of the physicians" (Hajjar et al., 2017). Many studies have examined the beliefs and attitudes of the physicians or health care providers towards these interactions, to assist the pharmaceutical companies to increase their sales and promotion strategies (Khazzaka, 2019, Inamdar & Kolhatkar, 2012, Taneja et al., 2007)

Khazzaka (2019) in her study in Lebanon recommended that "Influencing the physician is a key to pharmaceutical sales. The marketing efforts of the drug companies must target female, young physicians practicing in the rural regions." Inamdar and Kolhatkar (2012) recommends scientific information and knowledge on promotional inputs and sponsorship dissemination by pharmaceutical companies to improve their marketing strategies. Taneja et al. (2007) recommend that pharmaceutical companies should plan different promotional strategies for private and govt doctors- as the government doctors emphasise on samples and personality of the medical representative and private doctors give importance to incentives and sponsorships for conferences, medical equipments and personal gifts. Choudhary (2017) while examining the "marketing strategies" of the pharmaceutical companies in North Bihar, suggest measures for evolving marketing strategies for pharmaceutical companies.

Marketing strategies Kotler (2014, as cited in Choudhary, 2017) defines marketing strategies as the marketing logic by which the enterprises hope to achieve its marketing objective. It is an attempt to differentiate oneself from their competitors and increase its corporate strength to better satisfy the customer's needs in a given environment.

1.7.6 Gaps in the Literature

It is observed that most of the studies try to understand the marketing strategies of pharmaceutical companies & its influence on prescriptive practices of doctors quantitatively. The association between the physicians, pharmacists and the

pharmaceutical companies are mostly examined, however the influence of the pharmaceutical marketing strategies on the nature of Western medical practice and its impact on patients have not been examined, especially an in-depth study is lacking. Most of the literatures reviewed have followed survey based on quantitative approach. A few qualitative literatures are available however the impact of pharmaceutical marketing on the aspect of nature of medical practice and its impact on patients have not been taken into examination. Majority of the research on the topic have been conducted in developed countries and developing countries have received less attention. Most of the literature are from marketing perspective and the patient centred approach is missing. Literature on the nature and the extent of interaction between pharmaceutical companies and physicians or pharmacist in the developing countries are less. Few published studies address the problems of pharmaceutical marketing among quacks in developing countries.

A meaningful qualitative in-depth study on the nature and extent of interaction between the pharmaceutical companies and their customers is lacking in Bihar. As the pharmaceutical market adapts to the local culture of the place according to four P's of marketing – Product, Price, Place, Promotion, hence it is imperative to understand how such phenomena is taking place in Bihar and its consequences on the people. No literature or study has been found which have investigated the impact of Western pharmaceutical market on indigenous medical practice.

Although abundance of literature exists on political economy of medicine in 70s and 80s but after that there was a little decline in the studies. Most of the studies on anthropology of medicine or sociology of medicine centred around doctor patient relationship, the organisation of the medical systems, medical education. There were again a number of studies done on pharmaceutical marketing and their influence on doctors' prescriptive practices but mostly they were done to assist the pharmaceutical industries to escalate their marketing strengths and earn more profit.

The review of literature reflects that much of the work rests in the domain of medical anthropology. There are very few studies related to anthropology and pharmaceuticals. The anthropological work in this field has been lacking due to the focus of the anthropologists in understanding the process of therapy choice. The other reason is that they have not delved into interdisciplinary work which would have

involved cooperation between the anthropologists and the pharmacologists. Much of the early research in medical sociology focussed on analysis of patient beliefs and attitude, physician-patient relationship and analysis of medical care marking the evident gaps in the role of medical representatives in influencing the doctors for prescribing a drug; and its impact on local indigenous care system. Very few studies are qualitative like Hajjar et al. (2017), Khazzaka (2019) and have restricted engagement. They have not situated their studies in the larger political economic framework to have a comprehensive understanding of the problem.

Therefore, the present research aims to fill the gap of understanding a) the factors which influence the doctors in prescribing a medical drug and b) how do the medical representatives become crucial in enabling the doctor's decision making towards prescription of pharmaceuticals of his company. e) and what is the impact of this on the local and indigenous practices for health care.

1.8 Research Problem

Thus, it is evident that the Western medical practice takes place in a very complex social, political and cultural environment and it also adapts itself to it. The examples of quacks or pharmacist practicing Western medicine, the health care practitioner and the patients seeking pluralistic medicine, physicians administering injection on demands of patients, over prescription of medicine – is all an adaptation of Western medicine to the local culture of a place. The consequence of such practices is unknown and unmeasured and such practices evolve over the years. Apart from the advancement in medical technologies and innovations, local culture, time, space or geographical location and context have always defined and redefined the nature of western medical practise. People's perception and faith in it have also changed with spacio-temporal changes. The knowledge of the context of medicine in a local place is as eminent as the macro picture of the socio- politico and economic forces shaping the health of the people. As the out-of-pocket expenditures on medicine is very high hence the role of pharmaceutical industries in influencing the nature of practice, especially the prescriptive practice of doctors, needs to be understood. In a state like Bihar which has socio-economic backwardness, very poor public health infrastructures, lack of doctors, and where people spend mainly out-of-pocket on private practitioners especially on medicines, the role of pharmaceutical industries on

the nature of practice needs to be understood. How the market of western medicine influences the indigenous medicine and vice versa.

Therefore, the aim of the study is to decrease peoples' out-of-pocket expenses (OOPE) by better understanding the nature of western medical practise, the impact of the pharmaceutical industry on it, and the impact of the western medical market on indigenous medicine.

1.9 Organisation of the Thesis

The thesis is organized as follows:

Chapter 1 consists of introduction, conceptualisation, and background to the research problem.

Review of available literatures, empirical studies, theoretical concepts on western medical practice, medicalisation, pharmaceutical marketing, medicines and critical understanding on it.

Chapter 2 This chapter gives an outline of research design that were followed in the study The present study is based on ethnographic methodology and is done in Patna and Saran district of Bihar. In-depth interviews of medical representatives, Doctors and informal practitioners or quacks and how their narratives have been collected is explained. It provides information on research participants, that is, the criteria for their inclusion in the study, who the participants were and how they were sampled. The techniques that were used for data collection and the processes that were followed to carry out this study is also described. The chapter also discusses the theoretical framework used to analyse the data. Lastly, the ethical issues that were followed in the process are also discussed in detail to address the research questions.

Chapter 3 presents the history of western medical practice, of pharmaceutical companies and of indigenous medicine in the world and in India. The chapter focuses of how western medical professionals politically took charge of the prevailing socio-economic situation in India and spatially marginalized the indigenous medical system which was initially the dominant system of health care and was better accessible and affordable. It also explores the history medical practice in Bihar.

Chapter 4 engages in understanding of process of pharmaceutical promotion by pharmaceutical industries through their medical representatives and how this market operates in Patna and Hussepur Village of Saran district. The chapter begins with the understanding of dialectical relationship between profit making of pharmaceutical industries and care giving principles of doctors. In this conflict-of-interest pharmaceutical drug is the reason for formation of relationship between various stake holders. The process of prescription generation by medical representatives and their incentivisation strategy is discussed in detail. The impact of such marketing practices on the nature of western medical practice is also discussed.

Chapter 5 engages in exploring the hegemonic relations between the western biomedicine and indigenous systems of medicine in Bihar and how the market of both the medicines influences each other. It delineates the way people are negotiating their health choices amidst medical pluralism and medical hegemony. Impact of Market on indigenous medicine and vice-versa, political economy of health budget is also discussed.

Chapter 6 attempts to summarise the thesis, draw an inference and conclude towards way forward.

CHAPTER 2

CONCEPTUAL FRAMEWORK AND RESEARCH DESIGN

2.1 Introduction

Research design is the blue print of any research that is scientifically significant and contains the approach, methods and processes involved in data collection, analysis and conclusion. In the previous chapter the researcher has given the background about her research problem. An overview of the research design used in the study is provided in this chapter. The study's goal and the factors that led to the design's selection are discussed. It offers details about study participants including who they were, what were their backgrounds, and how they were selected for the study. Additionally, a description of the methods utilised for data collection and the procedures followed to complete this study is provided. The theoretical framework that was employed to analyse the data is also covered in the study. Last but not least, ethical considerations of the research are also explored and discussed in detail.

2.2 Scope and Significance of the Study

The understanding developed through this research would assist in streamlining and regulation of Western medical practice and the promotion of medicines by pharmaceutical industries. It would also give insights of how indigenous medical practice can be revived for the benefit of people. The study would be significant for the government and people of Bihar and would assist in lowering their health care cost. The study would add on to the existing resources and research study on Western medicine, role of pharmaceutical industries in its practice and how western medicine marginalises indigenous medicine.

The study will enlighten on how the health care needs of the people be managed in the presence of limited resources. At the micro level it would also throw light on the health seeking behaviour of the people of Bihar and would assist them to make their choices well informed to suit their needs. It will explore the limitations and malpractices of Western medicine and hence would help in understanding how best practices can be managed. The study would assist the government and regulatory bodies to understand why the regulation of market and of the western medical practice

is required in Bihar, what is its status and what can be done for it. The study allows the policy makers to have a better understanding of the health care cost and its problems for the people of Bihar.

At the National level this micro study will add on to the resource pool of other micro studies done in other states in India, the understanding of the similarities and differences across regions would assist in making a robust health policy. The study would enquire on how the Macro level changes or aims of the pharmaceutical industries impact the micro or the grass roots level people, by altering the nature of practice and the understanding of it would further assist in developing a wholistic health systems in which people's health care needs would be given prime importance to profit making of the health care industries. At the International level the study would add on to the larger picture of how western medicine is practiced in India and how best can the global society learn from its experiences.

2.3 Objectives

The aim of the research is to understand the nature of western medical practice, the influence of pharmaceutical market on it and the impact of western medical market on the indigenous medicine to reduce the out-of-pocket expenditure (OOPE) of the people. The specific objectives of the study are:

1. To trace the history of medical practice in the area of study.
2. To understand the disease pattern in the study area.
3. To identify the various systems of practice in the area of study and the nature and levels of practice by different practitioners (quacks, doctors, villagers, indigenous healers, PHCs, CHCs, SC etc.)
4. To examine the various factors influencing the local markets of western medicine.
5. To examine how western medical market influences the indigenous medical market.

2.4 Operational Definitions of Concepts Used in the Thesis

For the purpose of the research certain words or concepts have been used which are defined below to ensure the meaning in which they have been used in the research. Some of the terms are as follows:

2.4.1 Western Medicine

Western medicine is commonly used term for a system of medicine which is believed to have originated in west. It is the most dominant system of medicine world over and is based on wide gamut of natural sciences with biology as its core subject (Wiseman, 2004). It is considered to be the most scientific and unparallelly highly advanced form of medicine in comparison to any other system of medicine. Western medicine- refers to the biomedical concept of health wherein body is analogue to a machine. As understood from various literatures, the proponents of western medicine believe it to be scientific, universal, technocentric or technology based, having well written manual on code of conduct and ethics, knowledge is scientifically derived through research and experiments, and it stems from the positivist ideology, and have an established law of pathology and of therapy. It is a product of western culture and society, and draws on some of the dominant western philosophical traditions, it believes in the mind body dualism and this philosophy is the guiding light to all theoretical and clinical efforts of western medicine (Lock and Gordon, 1988).

The term ‘western medicine’ has been used in this thesis interchangeably with ‘allopathic medicine’, ‘biomedicine’ and ‘modern medicine’ for the convenience of explanation to the reader. All the terms used mean and refer to ‘western medicine’. Although care has been taken to use the term ‘western medicine’ more often than any other terms.

2.4.2 Drug

A drug is defined by the Ministry of Health and Family Welfare as any substance or pharmaceutical product intended for human or veterinary use that modifies or explores physiological systems or pathological situations for the benefit of the

receiver. Drug, medicine, and pharmaceutical product are all terms that are widely used interchangeably[4].

According to Drugs and Cosmetics Act (1940) a drug is defined as "all medicines and substances for internal or external use of human beings or animals intended to be used for or in the diagnosis, treatment, mitigation or prevention of any disease or disorder in human beings or animals, including preparations applied on human body for the purpose of repelling insects like mosquitoes or substances used to kill worms in human or animal body. It also includes substances (other than food) that affects the structure or function of the human body. It also includes substance which are intended for use in the making of a drug including empty gelatine capsules"[5].

According to Drugs and Cosmetics Act 1940 the Ayurvedic, Siddha or Unani drug is defined as- "all medicines intended for internal or external use for or in the diagnosis, treatment, mitigation or prevention of disease or disorder in human beings or animals, and manufactured exclusively in accordance with the formulae described in, the authoritative books of- Ayurvedic, Siddha and Unani Tibb systems of medicine, specified in the First Schedule"[6].

In the thesis drug has been used interchangeably with pharmaceutical drug or medicine, however they mean the same, i.e., medicine for human consumption.

2.4.3 Indigenous Medicine

The term "indigenous medicine" for this thesis refers to the traditional medical practices which have been recognised by Ministry of Ayurveda, Yoga, Unani, Siddha, Homeopathy (AYUSH). Homeopathy is considered to be indigenous given its long tradition of practice in India. The knowledge of these systems of practice have been developed over generations and they derive the healing therapy and products mainly from nature. However, indigenous medicines have not been recognised as modern and scientific. The professional organisation of such medicines is not very strong and they are mostly scattered and region specific. The term indigenous medicine and traditional medicine have been used interchangeably in the thesis but they mean the same.

[4] https://www.nhp.gov.in/drugs-and-pharmaceuticals_pg (accessed on 31.7.2020).
[5] https://cdsco.gov.in/opencms/export/sites/CDSCO_WEB/Pdf-documents/acts_rules/2016DrugsandCosmeticsAct1940Rules1945.pdf (accessed on 8.11.2020)
[6] (https://cdsco.gov.in/opencms/export/sites/CDSCO_WEB/Pdf-documents/acts_rules/2016DrugsandCosmeticsAct1940Rules1945.pdf (accessed on 8.11.2020)

2.4.4 Quacks

Quacks according to Merriam webster dictionary are defined as the one who misrepresent the specially qualified professional health care practitioners i.e., doctors, Vaidya, Hakims etc. He/she makes false assertions of expertise or identity[7].

While discussing on medical professionals and their definition the Medical Council of India (MCI) guideline delineate - A person who is not a doctor with a qualification recognised by the Medical Council of India and registered with the Medical Council of India/State Medical Council (s) is not authorised to practise Modern System of Medicine or Surgery. A person who has earned a degree in any other school of medicine i.e., Ayurveda, Homeopathy, Unani etc. is also not permitted to practise Modern Medicine in any form (National Medical Commission, 2016). As a result, all such practitioners who are unrecognised by MCI are quacks. So, all Ayurvedic doctors practicing western medicine come into the category of quacks and are illegal and half trained doctors.

Quacks in the present research are defined as people who are, 1) indigenous doctors practicing allopathic treatment, 2) pharmacists prescribing medicines to the patients, or 3) those people who after working for some years under a doctor, starts prescribing on their own for the patients. They do not have formal western medical training from any institution. They cure diseases by informally learning the use of procedures, remedies, diagnostic and therapeutic machines. They are also referred as informal practitioners.

2.4.5 Nature of Western Medical Practice

By "Nature of Western Medical Practice" the researcher means the various forms in which it is being practiced by different practitioners. For example - western medicine is being practiced by doctors, quacks, pharmacists, compounders, mid-wives, Ayurvedic and Unani doctors. The phrase also entails an understanding of the prescriptive practices of practitioners and how such practices are guided by pecuniary benefits, that the practitioner gets from the patients, from the drug promotional practices of the pharmaceutical companies or from any other sources.

[7] (https://www.merriam-webster.com/thesaurus/quacks (accessed on 9.11.2020)

2.4.6 Health Market

By "Health Market" the researcher means the market that is created especially by western medicine and also by other systems of medicine to serve the capital accumulation motives of various stake holders like- medical practitioners, diagnostic centres, pharmaceutical and medical equipment industries and drug suppliers like stockists, chemists.

2.4.7 Medical Representatives

Medical Representatives (MR) are the people who are hired by pharmaceutical companies to promote the sale of their drugs among doctors, quacks, chemist or anyone who would prescribe their drugs. A geographical region is assigned to them by the pharmaceutical companies. Depending on experience, there is organisational hierarchy and also slight change in the nature of job, among the people responsible for the promotion of drugs. However, their basic job is the same i.e., to promote the sale of the drugs mainly through prescription generation and achieve the sales target given to them. In India such hierarchy from lower to the top level are - Medical Representatives, Executives, Area Manager, Regional Manager, Zonal Manager etc. Thus, Medical Representatives are lowest in the hierarchy and are involved in the promotion of drugs at the grass-root level, i.e., the doctors, chemists, quacks etc. Such people are called differently in different countries like detail men, sales representatives etc.

For the purpose of the present research and also to maintain confidentiality all such people are clubbed as Medical Representatives as their prime job is same i.e., to promote the sale of their company's drug. Their individual hierarchy in the company is not explained in the thesis as this would not impact upon the results of the research.

2.4.8 Prescription Generation

'Prescription Generation' means that doctors are influenced to write the brand name of medicines of a particular pharmaceutical company on direct or indirect influence and insistence by the company's medical representatives.

2.4.9 Propaganda Companies

These are small pharmaceutical companies who sell their drug by hook or cook i.e., by any ethical and unethical means. The term was introduced to the researcher in the field by the Medical Representatives of big pharmaceutical companies, who have higher turnover and an organised plan of sale of their pharmaceutical drugs. According to such medical representatives the "propaganda companies" are small, the quality of their drugs is not ensured, they sell their drugs mostly by giving cash to the doctors and often promote their drugs among young doctors and quacks with few years of practical experience. They do not have big organisational structure as well as marketing division to cut down on costs. Their MRs are also not well trained and educated. Therefore, these MRs directly give cash to market their products.

2.4.10 Portfolio

The researcher used this term to refer to the group of drugs that are given to medical representatives to promote their sale.

2.4.11 Illness Episodes of Patient

The researcher took the term "Illness Episodes of Patients" from NFHS-4 (IIPS & ICF, 2017) and has used it in her thesis to refer to illness of the people during the time of data collection or any illness that occurred in 6 months before the data collection or chronic illness like diabetes, heart ailment that was told by the people during the time of data collection.

2.5 Theoretical Framework for Data Collection and Analysis

Depending on the researcher's goals and purposes, the data was collected, processed, analysed and interpreted using the Grounded theory and Marxist Political Economy approach. Grounded theory is discussed below and Marxist Political Economy has been discussed in literature review.

2.6 Research Methodology

The understanding of the nature of western medical practice and the relation between the western medical practice and market, its influence on the indigenous medical market and the consequence on the health of the people of Bihar required a thick descriptive qualitative data. An exploratory ethnographic approach was found to be

most suitable for this research problem. As ethnography tries to look into people's life and understand it from their frame of reference i.e., to understand people's perspective through their local, historical, cultural and social context; the use of such approach in the research work would help in collecting rich and thick data. The researcher here is not looking for generalisation of her findings but is trying to understand in reference to the context of local situation of Western medical practice and its associated phenomena of pharmaceutical market, how it impacts the indigenous medical market in a state like Bihar where most of its population is poor, illiterate and backward. People's choice and preference for health services have been enquired upon.

Goodson and Vassar (2011) while reviewing the works of other ethnographers, discuss that ethnography is "…. characterised by learning the culture of the group under study and experiencing their way of life before attempting to derive explanations of their attitudes or behaviour." They referred to suggestions elicited by LeCompte and Schensul (2010, as cited in Goodson & Vassar, 2011) about the use of ethnographic studies for the following conditions:

- When the problem, process or phenomena is unknown and unexplored.
- When the problem is complex and embedded in multiple systems.
- When there is a need to understand the process of a phenomena.

Hence in the present study there is a need to understand and document the process through which pharmaceutical company markets its drugs in Bihar. How the care givers react to it and how and what is the impact on the patients. Ethnography is an inductive methodology that helps in the process of deep understanding of the research question and also helps in the development of Grounded theory (Goodson & Vassar, 2011). Noble and Mitchell (2016) contend that Grounded theory is and inductive methodology employed in social science research that leads to construction of theory from the data collected and analysed. It was first developed and propounded by Glaser and Strauss (1967, as cited in Noble & Mitchell, 2016) during their study- "Awareness of Dying". The present study contrasts with traditional scientific research methods where one begins with the hypothesis and deductively go on to test it. An attempt is made to use grounded theory approach under the overarching frame

of ethnographic methodology to understand the culture of the western medical practice and role of pharmaceutical market in it. How this culture influences the indigenous medical practices in Bihar.

It is observed that research in health and healthcare settings has relied heavily on scientific quantitative approaches. These traditional quantitative approaches give answers to how much is the problem in quantitative terms but they fail to fill the gaps on extent and array of the problem. Hence there are research questions within these academic domains that need to be more adequately addressed by qualitative inquiry. This view corroborates with the views of Goodson and Vassar (2011). When deciding on the methodological approach to a research question, qualitative research is frequently disregarded as a possibility. This is particularly true in academic fields like medicine, where evidence-based practise has become a well-liked treatment philosophy that is mainly founded on the heritage of quantitative research. But qualitative research can offer valuable data that would not have been found using quantitative methods. A number of study issues in healthcare and medical education are acceptable for the qualitative approach of ethnography, which entails a relative immersion in the environment to be investigated (Goodson & Vassar, 2011).

Fusch et al. (2017) underpin the beliefs of Popper (1963, as cited in Fusch et al., (2017) "that as humans we as humans we are constantly experiencing new things in life; therefore, beliefs change with experience". The meaning of experience changes over time and new meaning is added to it. Hence for researchers, experiences of people are important and it adds to the discovery of the truth (facts). Hence a novice researcher needs to choose a research methodology either quantitative or qualitative or mixed methods that allows one to best answer the research question (Fusch & Ness, 2015). It enables one to design the research questions, how to proceed in the research, analyse the data based on certain ontological and epistemological premise while maintaining the scientific rigour and validity of the research. A student researcher should pick a research design that enables the researcher in achieving data saturation and complete the study within a reasonable time frame with minimal cost. Choosing a research design is very important for students of doctoral programme as it enables one to understand the direction of research and how to approach the research

problem, how to find and understand truth, as well as how to conclude with the truth or finding of the study.

Goodson and Vassar (2011) divide the researchers from the social science disciplines into three theoretical paradigms – positivism, constructivism and mixed methods. Guba (1990) advocate that the positivists believe that "there exists a reality out there, driven by immutable natural laws." Most of the disciplines in science and social science are based on this paradigm. The focus here is to discover the true nature of reality and how it works. "The ultimate aim of science is to predict and control natural phenomena." (Guba, 1990). The positivist researcher believe that he can achieve objectivity by remaining out of the experiments or the research phenomena. He can observe it from a distance and infer the results. Guba (1990) summarises the basic belief system (paradigm) of positivist approach as follows:

Ontology: The ontological orientation of the positivist about reality or truth is that it exists "out there" and is unchangeable or immutable by natural laws or mechanisms. The generalisations are done in the form of cause-effect laws. This kind of ontological approach is also known as realist.

Epistemology: It is possible for the researcher to be objective and not influence their subjects of study. The values and other biases of the researcher does not influence the research outcome. This kind of epistemological approach is also known as objectivist.

Methodology: The research questions or hypothesis are stated in advance and are subjected to tests under carefully controlled conditions. This kind of methodological approach is known as experimental or manipulative.

An alternative to this paradigm is the constructivist view. Guba (1990) state that Constructivists "feel that positivist paradigms are badly flawed". He contends that for the positivists, fact or reality can only be seen through some theoretical framework and "No theory can be fully tested because of the problem of induction". Giving example Guba says that if one observes one million white swans, then one cannot infer that "All swans are white." "There are always large number of theories that can, in principle, "explain" a given body of "facts". He further elicits that "there can be many constructions and there are no foundational ways to choose from them". He says that constructivists believe that ideologically an "inquiry cannot be value free"

and thus many constructions are possible. The objectivity of the inquirer is also not possible; "the results of an inquiry are always shaped by the interaction of inquirer and inquired into" (Guba, 1990). Ontologically for constructivist there are many ways or interpretations in any inquiry. The truth or falsity of any construction can be only be relative or contextual. "Realities are multiple, and they exist in people's minds" (Guba, 990). "Relativism is thus the key to openness and the continuing search for ever more informed and sophisticated constructions" (Guba, 1990). Epistemologically the inquirers of constructivist paradigm take a subjectivist position as they believe that if realities exist only in respondents' minds, then they need to have a subjective interaction with them to access the reality. Methodologically, the constructivist follows a process that has two aspects: hermeneutics and dialectics. The hermeneutics aspect deals with the interpretation of the individual constructions as accurately as possible and the dialectics aspect deals with comparing and contrasting these individual constructions to arrive at a more informed and a sophisticated construction (Guba, 1990). Guba (1990) thus summarizes the constructivist belief system as follows:

Ontology: Realities exist in the form of multiple mental constructions, socially and experimentally based, local and specific, dependent for their form and content on the persons. Such kind of ontological approach is known as relativist.

Epistemology: The researcher and respondent are considered as single entity and the findings are literally the comparison and contrast of the constructions of each respondent and come to conclusive evidence in relation to the context. It aims to reconstruct the "world" as it exists in the minds of the constructors. Such epistemological approach is known as subjectivist.

Methodology: The constructions of inquirer and inquired into are interpreted hermeneutically and compared and contrasted dialectically to arrive at a conclusion with substantial consensus of all.

Thus, it is evident that researchers using quantitative methodology follow the positivist paradigm and the researchers using qualitative methodology follow the constructivist paradigm. The researchers using mixed methods have also become

popular in recent years. These three paradigms "dictate the nature of the research design" (Goodson & Vassar 2011).

Summarising the positivist and constructivist views Goodson and Vassar (2011) state that the positivist seeks to focus on phenomena "which can be directly observed and confirmed by the senses" and test a theory-based hypothesis "while remaining objective and value neutral". On the contrary the constructivist "believe that knowledge is socially constructed and situated within a particular context". As the perspective of people are different based on their experiences in different social and historical context- "the world has many different meanings - none of which may be more valid than another" (Goodson & Vassar 2011). Thus, following the constructivist paradigm, the researcher chooses to take up the Ethnographic methodology.

There are many definitions of ethnography depending on the type and form of ethnography undertaken and interpreted by many authors like: Stephenie Taylor (2002), Hamersley and Atkinson (1995), Savage (2000), Oommen (1997), Atkinson and Pugsley (2005) (all as cited in O'Reilly, 2005), however O'Reilly (2005) gives are critical minimum definition of ethnography by critically analysing the definitions of many of these significant authors as:

Minimally ethnography is-

- Iterative-inductive research that evolves its research design during the process of research or data collection,
- It draws on a family of methods
- It involves direct contact with the human agents for a long period of time
- Tries to understand their subjects within the context of their daily lives
- Observing or watching the people in their daily lives, listening and asking questions
- Producing a rich written account of people's daily lives and the meaning they attach to it.
- It respects the irreducibility of human experience,
- Acknowledges the role of theory and researcher's role
- Acknowledges the role of theory and researcher's role

Thus, Ethnographic methods are qualitative, inductive, exploratory and longitudinal. They collect a rich, and thick description of people and their understanding on a particular phenomenon in relation to the context of their history of experience and their daily living environment. The knowledge of the context of medicine in a local place is as eminent as the macro picture of the socio- politico and economic forces shaping the health of the people as well as the nature of western medical practice. The research question itself suggests that the study if based on survey method would lose the descriptive facts about the various ways in which the western medicine is practiced. By emphasizing on the sample population as is done in survey method the researcher feared to lose the data on influence of the local culture on the nature of western medical practice, how it impacts the indigenous medical system and what hence is the consequence on the health of the people (as we know health it an outcome of socio-cultural, political, economic, climatic and topographical factor.) Hence in order to understand the complex interplay of western medical practice, process of prescription generation by medical representative of pharmaceutical companies, indigenous medical practice, market and how health of the people is defined and their health seeking nature in a complex socio-politico-economic and cultural milieu the researcher chose to engage in an ethnographic study.

The present study is descriptive and exploratory in nature. It is exploratory because it examines the western medical practice and the role of market in it and their impact on indigenous people in Patna district of Bihar state in India, where very few studies have been done so far in the area and have not been found by the researcher yet.

2.7 Rationale for Selecting the Place of Study

2.7.1 Study Region

Bihar has been historically a poor and ill performing state on the development parameters. After Independence it was clubbed under 5 backward states namely—in short called as BIMARU states to improve the overall human development index. Later the term BIMARU was changed to empowered action group (EAG) states. There has been some improvement on some of the health indicators due to continuous centre, state and civil societies efforts, however the overall status of the state and its people are still very poor as the state represents largest below poverty line families in the country. At the grass root level, the socio-economic and health status of the

majority of people are deplorable and the development programmes are not reaching out to the people due to various political, economic and administrative inefficiencies.

According to Census (2011), Bihar is the second most populous state in India next to Uttar Pradesh and Maharashtra respectively, with the population of 104,099,452[8]. The decadal population growth rate is 25.07% which is very high for the state with very high population. The state has a population density of 1106 persons/ sq. km. which is the highest in India[9]. This is much too higher than the population density of India which is 382 persons/ sq.km. With a very high population and population density, the state has high poverty index as well. According to the NFHS-5, 68.9% of Bihar's population belongs to the poorest wealth quintile (International Institute for Population Sciences [IIPS] &ICS, 2021). Bihar is basically a rural and agrarian state with a very low per capita income. About 42.6 per cent of the population lives below the poverty line (Endow, 2017). The poverty ratio in the state is 33.7 per cent as per the 2011-12 NSS data with little difference in the rural-urban poverty levels (Endow, 2017). The social stratification coincides with the economic stratification of the state, i.e., the lower castes are also the poor class. The socio-economic status of people of Bihar is dismal and thus so is the performance of state on various health indicators. Bihar has a very high total fertility rate (4.3 children per family) in comparison to the national fertility rate (3.2 children per family) and a low literacy rate (47.53 per cent) (Nayar & Anant, 2005). Bihar ranks very low with high infant mortality, low immunization of children and expectant mothers, high maternal mortality, and high mortality due, to infectious and contagious diseases. These coupled with poor access to health care facilities and high costs of treatment by households have made all achievements in health sector look insignificant. In the last fifteen years, the public health care services in Bihar have virtually collapsed. The inability of the public healthcare system in meeting the healthcare needs of the rural poor has become a serious issue (Nayar & Anant, 2005).

Public health system in Bihar is at the verge of collapse. So, people are more dependent on private system. In 2001, there was one doctor for every 33,347 citizens in Bihar, compared with the national ratio of 1 to 1,855. There are 12 times fewer

[8] http://statisticstimes.com/demographics/india/indian-states-population.php (accessed on 20.11.2020)
[9] https://state.bihar.gov.in/main/Content.html?links&page=Bihar%20State%20Profile (accessed on 28.10.2020)

nurses in the state than the average. There are 22,670 registered pharmacies and 31,000 doctors (Nayar & Anant, 2005).

In the health index score prepared by Niti Ayog and Ministry of Health and Family Welfare, Bihar and UP ranks the lowest. Bihar's performance decline from the base year. "For instance, in Bihar, the deterioration between Base Year and Reference Year was primarily due to the performance related to total fertility rate, low birth weight, Sex Ratio at Birth, TB treatment success rate, quality accreditation of public health facilities, and time-taken for National Health Mission (NHM) fund transfer," (NITI Aayog, 2019a, p. 6)

Health Index score has declined both for the poorest performing State (Uttar Pradesh) and the best performing State (Kerala). "Kerala remained the top performing State despite a decline in Health Index score from Base to Reference Year[10]". "While the 5 least performing States in the reference period were: Uttar Pradesh (28.61), Bihar (32.11), Odisha (35.97), Madhya Pradesh (38.39), and Uttarakhand (40.20)" (NITI Aayog, 2019b, p.24). "Bihar (ranked at the bottom) registered the most negative incremental change, and this is reflected in the deterioration of most health indicators such as Total Fertility Rate (TFR), Low Birth Weight (LBW), ... institutional delivery, tuberculosis (TB) notification rate, TB treatment success rate, ANM and staff nurse vacancies, functional 24x7 PHCs, birth registration, CHC grading, accreditation of facilities and fund transfer" (NITI Aayog, 2019b, p. 27). "For Key Inputs/Processes, Andhra Pradesh had the highest and Bihar had the lowest ranking" (NITI Aayog, 2019b, p. 29).

Some of the reasons of high morbidity can be attributed to existence of very poor and dilapidated public health infrastructure in Bihar. Bihar has the lowest per capita expenditure on health in the entire country, at Rs 348. Only 6.2% of its total population is covered by health insurance. Data collected from the National Rural Health Mission (NRHM) have shown that, at a shortfall of 91%, the state also has the worst record in the creation of Community Health Centres in the entire country. CHCs are designed to be the first referral centres for patients requiring paediatrics, gynaecology and surgery. In an ideal situation, there should be one CHC for a population of one lakh persons (Kumar, 2020). However, in Bihar, CHCs are absent

[10] Base year was 2015-16 and reference year was 2017-18.

and PHCs serve at the population of one lakh while PHCs are formed to serve at the population level of 30,000. The absence of CHC and the specialised health care it offers has put a heavy toll on PHCs as well as district and sub-district hospitals. Moreover, various emergency and expert services provided by CHC cannot be performed by PHC due to non-availability of specialised services and human resources. Bihar has less than 26 hospital beds per lakh population, while the national average is 138. (Kumar, 2020).

The states where highest number of households use private sector is UP (80%) followed by Bihar 78%. The most common reason for not using government health care is poor quality of services and the government health care centres are located at a far-off distance, hence accessibility is an issue. This is followed by long waiting time to see a doctor or to get medicine if at all it is available (IIPS and ICF, 2017). The dependence on private sector increases the OOP expenditure of the people. According to Finance Commission India (FCI) (2020) about 70% of health expenditure is out of pocket (OOP) which is one of the highest globally. This further puts the poor population at increased risk of going further below the poverty line. According to Baru et al. (2010) in India about 80 per cent of the total health expenditure is through out of pocket (OOP) payment. The OOP expenditure includes payment for doctor's consultation, medicines, medical tests, and travel. The largest component of OOP expenditure is on the purchase of medicines. Estimates from the National Sample Survey (NSS) for 1999-2000 shows that 70% of the total OOP expenditure in urban and 77% in rural areas are spent on medicines" (Baru et al. 2010). As according to the NFHS 4, about 51% of the people seek health care in the private sector and about 45% seek health care and treatment in the public sector, majorly-government and municipal hospitals providing health care to 20% of house hold. In private sector doctors and clinics are most frequently visited (IIPS and ICF, 2017). According to FCI (2020) private health sector is mostly unregulated and lacks trained and skilled man power.

Hence, we see that in Bihar about 78% of people depend on private sector, that too mostly on the private doctors and clinics and about according to NSS 1999-2000 70% of the OOP expenditure are on drugs, it is important to understand how the available health care providers are catering to the health needs of the people i.e., to observe and

understand the practices of the doctors and quacks. How they deal with their patients. This is an area which is not much researched especially in Bihar as the concerns of the government and people working in the health systems of Bihar are on implementation of the National Health Mission efficiently and make the defunct existing services functional. The private health sector is largely unregulated. Hence the researcher chose Bihar as a state for her research enquiry. The researcher is also a native of the state, hence it would be easier for her to conduct ethnographic field work.

2.7.2 Study Area: Patna District and Saran District

The researcher decided to study an urban as well as a rural region of Bihar to understand the contrasting differences of western medical practice in both the regions. Hence, she focussed on two districts of Bihar – Patna and Saran where she could make her entry in her study population easily and also stay for long to conduct her ethnographic research work.

Figure 2.1 Location of Patna District

Source: https://commons.wikimedia.org/wiki/File:Bihar_district_location_map_Patna.svg

Figure 2.2 Location of Saran District

Source: https://commons.wikimedia.org/wiki/File:Bihar_district_location_map_Saran.svg

Patna with a population of 16.84 lakh is the capital of Bihar and is one of the most prosperous and largest class I city. It has good connectivity of roads and electricity. Its per capita GDP was Rs 36,373 in 2004-05, growing to Rs 55,270 in 2011-12, four times the state's average per capita GDP (Rs 12,093). In 2007-08, per capita bank credit in Patna was Rs 10,197, which increased by more than fourfold to Rs 46,520 in 2016-17. On the composite indices of education, health, water and sanitation, infrastructure, industries, services, and law and order, Patna came out on top of the 38 districts in Bihar (Srivastava, 2018).

Patna is densely populated and was purposively selected as it is the health market hub harbouring Bihar's largest whole-sale market of pharmaceuticals. Patna provided an urban set-up with better western medical health care facilities. Majority of the doctors reside in Patna. Patna (33.5%), Darbhanga (8.9%), and Muzaffarpur (8.6%) are the top three cities of Bihar that contains more than half of Bihar's doctors, as according to Indian Medical Association (Kumar, 2020). Therefore, Patna was ideal place to study.

Saran District's administrative head quarter is Chhapra. It is located 50 km west of the state capital Patna. In case of any Health emergency people travel to Patna for tertiary care either to Patna Medical College (PMCH) or All India Institute of Medical Sciences (AIIMS) Patna or for Private Medical hospitals. Saran District's population is 3943098, according to census 2011. Majority of the population resides in rural areas and average density of population per square kilometer is 1231. Majority of the population belong to Other Backward Caste (OBC) category, Schedule caste constitute 12% of the total population. Significant links between social identity and poverty has been found in various studies. According to Bihar development report (2003, as cited in District Health Society Saran, 2010-2011), the incidence of poverty among SC/ST groups is 59% and among OBC group is 42%. As majority of population in Saran district belong to OBC and SC/ST hence a sizable proportion of people in the district are poor. Around 80% of people are dependent on agriculture for their livelihood and around 30% are agricultural labourer. Hence despite the fact that agriculture is the main occupation of people, almost half of the labourer does not own land and are marginal farmers (District Health Society Saran, 2010-2011).

Hence the researcher chose a rural area of Saran district as it would also give a better understanding of the accessibility issues of health care and how western medicine is practiced in the resource poor settings in the absence of hospitals and qualified doctors and how pharmaceutical companies penetrate in these rural areas.

2.7.3 Rationale for Selecting the Study Site- Kesari Nagar, Patel Nagar and Hussepur Village

In Patna the researcher purposively chose three regions for ethnographic study namely- Kesari Nagar, Patel Nagar, and Boring Road. These areas were not only easily accessible for the researcher but also provided varied settlement pattern.

Kesari Nagar was a residential colony wherein the researcher's house was located. It needs to be mentioned that the researcher was an outsider as well as an insider in her area of study particularly in Kesari Nagar. She was partly an insider as she is a native from Bihar and her parents settled in the place after retirement, and partly an outsider as she is born and brought up in Jharkhand (Jharkhand was earlier a part of Bihar before partition). When her parents settled in the place, she used to visit them occasionally during her holidays as she used to study in Delhi by then. She knew the local dialect and language –Bhojpuri and Hindi. The researcher was aware of the local custom and culture to a large extent by virtue of being a native. She did her graduation from Patna Women's College and stayed in the campus hostel. So, the college and the hostel provided the researcher with exposure to boring road market where she used to visit for shopping while pursuing her graduation. When her parents shifted to Kesari Nagar she shifted to Delhi for her higher studies and used to visit Kesari nagar during her summer and winter holidays. Hence the researcher calls herself as partly an insider and partly an outsider. Therefore, by virtue of being partly an insider she did not have to spend much time in knowing the place and the people. Her father helped her in gaining acceptance among people. He introduced her to many of his friends and their family members who became the subject of her study to understand the nature of health seeking pattern.

Patel Nagar is a residential colony with a lane dedicated to shops on both the sides of the lane that caters to the needs of the people of Kesari Nagar and Patel Nagar. **Boring Road** is a very old and established up-end market. So, studying doctors and chemist in this different type of market enlightened her with wide perspective of how western medicine is being practiced in different regions with different types of market and location in urban Patna. Staying close to the study area provided her accessibility to the three regions at any part of the day be it morning, evening, or night. As these places were known to her so it did not take much time for her to adapt to the local situation and get a participant observation.

Figure 2.3 Picture of Study Site in Patel Nagar

Figure 2.4 Picture of Study Site in Hussepur Village

The researcher also chose **Hussepur Village** of Amnour block in Saran District as she had done her ethnographic research during her M.Phil dissertation in that village. It was her grandparents village, however she had few visits to her native village before her M.Phil dissertation that too in her childhood, so she was an insider as well as an outsider in this place. She was introduced to the village and in the village by her father. She chose the village purposively for her Ph.D thesis as she had to stay in the village for long and also the place provided a base for making connection with the people, for her ethnographic data connection which was quick and easy.

2.8 Sampling Technique and Process

As it was an exploratory study and having an access to the respondents were a big problem who would agree for the research interview that would last for hours or days. Hence snowball sampling technique was applied purposively to reach the key respondents. Especially it was difficult to reach the doctors and interview them for long hours. Also reaching out to the medical representatives who would give time and open up to discuss in detail about their marketing practices, was a little difficult. Hence the key research participants were found with the help of friends or relatives, or at times directly approaching them. The researcher did not aim for a specific sample size, as the focus here was not on asking same set of questions from each respondent as it is done in a survey, but to emphasis on descriptive and detail information of a phenomena taking place. Participant's views, perception and thoughts were given due importance and were noted down in verbatim form, as much as possible in the field.

Research participants were the people who gave their consent for the unstructured interview to the researcher. The research participants consisted of people like medical practitioners of both modern and indigenous medicine, patients, pharmacists, medical representatives and other people who may have key information. It needs to be mentioned that many participants in spite of being very busy gave a very detailed information and great length of their time to the researcher's satisfaction.

In Hussepur Village the key informants were identified by way of observation and those who played key role in health provisioning to the villagers and their patients. She also met two pharmaceutical representatives who visited the village chemist for the sale of their drugs.

In Patna the key informants were identified mainly through snowball sampling technique, where in the researcher got to know medical representatives or doctors through a reference and then continued by getting further references. She interviewed chemists and patients who gave verbal consent and she selected them purposively who were willing to give time to her and were willing to answer her in-depth open-ended questions.

2.8.1 Selection of Health Care Providers

According to the NFHS 4 (IIPS & ICF, 2017) about 51% of the people seek health care in the private sector and about 45% seek health care and treatment in the public sector. In private sector doctors and clinics are most frequently visited. In Bihar 78% of household use private health care sector, that too mostly the private doctors and clinics (IIPS & ICF, 2017). Hence the researcher chose to concentrate on private doctors and clinics for the purpose of research.

Table 2.1 Details of health care providers who were interviewed

Doctors		**Indigenous Practitioners**	**Quacks**
Dr1 – a male cardiologist working in a hospital in Patna	Dr6 - a Physician working in Patna	IP1 - a homeopathic practitioner	Q1 - a male practitioner working in Rajeev Nagar and Kesari Nagar in Patna. Does home visits as well.
Dr2 - a male Physician working in Patna	Dr7 – a female gynaecologist working in Patna		Q2 - an assistant of a doctor in Rajeev Nagar. (Male)
Dr3 - a male Cardiologist working in Patna	Dr8 - a female gynaecologist working in Patna		Q3 - a male BAMS degree holder practicing western medicine
Dr4 - a male Physician working in Rajeev Nagar in Patna	Dr9 - a Physician working in Delhi		Q4 - an assistant of a doctor practicing western medicine in villages (Male
Dr5 - a male Physician working in Rajeev Nagar in Patna			Q5 - an assistant of a doctor who was good in treating skin diseases (Male)
			Q6 - an assistant of a homeopathic doctor, practicing on his own now. (Male)

With the help of snowball sampling technique, the researcher found the doctors who agreed to be her research participants. The researcher interviewed doctors of the

Indira Gandhi Institute of Medical Sciences (IGIMS) hospital[11]. She got to interview one doctor and through him, she was able to reach other doctors. In the process of data collection, she gained useful insights from the doctors working there. She interviewed quacks working in Hussepur village as well as quacks working in the study site in Patna. The traditional practitioners were selected on the basis of the consent given by them to the researcher and their availability in the study region. The table no. 2.1 (page 48) gives the details of some of the health care providers in coded form who were the research participants. The names of all the research participants are coded to give them anonymity.

2.8.2 Selection of Medical Representatives (MR)

The medical representatives were selected through snow ball sampling technique. The interview with the pharmaceutical representatives lasted for very long hours (3-5 hours) and sometimes conducted over 2-3 days. Informal interview of some of the pharmaceutical representatives were conducted in their home residing in the study area for they were not able to give time while working in the field. Most of the pharmaceutical representatives were very cooperative and made the researcher also very comfortable during her in-depth open-ended interactions, chats and interviews. In fact, many of them very openly explained about their work- ethical or unethical; on the condition that their name and company name is kept anonymous. The researcher with her cultural knowledge (cultural capital), outgoing nature and people management skill and respect for the research participant was able to establish trust among them. Her non-judgemental attitude towards them made them at ease during her research interview. Many of the participants in spite of being very busy gave her ample time to her satisfaction. She was cautious of not asking leading and offensive questions. While doing so, many a times she felt limited in gathering her research data as she could not ask some of the direct questions which would be offensive for her key respondents. The details of the Medical Representatives are not given to keep them completely anonymous.

All the pharmaceutical representatives interviewed were male although in the second phase of data collection in 2020 the researcher was informed that a few females were also being recruited by pharmaceutical companies for specific areas like hospital-

[11] It is semi-autonomous hospital located in Patna district.

Patna Medical College (PMCH) where the entry of the male medical representatives had become tough. As the doctors of PMCH were not allowed to meet the MRs during their working hours due to heavy load of the patients the female MRs could get access to the doctors in lieu of assisting them and their patients. Studying such female medical representative was beyond the scope of this study as PMCH did not lie in researcher's study site. Also as, the sampling technique was snowball sampling so the researcher did not get any reference of the female medical representatives. The researcher however plans to include them in her future research study. The table number 2.2 give the number of MRs interviewed in coded form.

Table 2.2 Medical Representatives interviewed

MR1- met in Kesari Nagar	MR6- met at his home in Patel Nagar
MR2- met at Rajiv Nagar	MR7- met at chemist shop in boring road
MR3- met at chemist shop	MR8- met at doctor's clinic
MR4- met at home	MR9 – met in Hussepur village in Saran District
MR5-had interaction on phone	MR10 – met in Hussepur village in Saran District

2.8.3 Selection of Pharmacists

Selection of Pharmacists was done on the basis of the consent given by them to the researcher and the quality and quantity of data to be gathered from them. All the pharmacists were male. The researcher observed chemist's business by sitting and observing his day long business. She also took informal interview with them. Pharmacists are also at times referred as chemists in the thesis. Table number 2.3 gives the details of the number of pharmacists in coded form.

Table 2.3 List of pharmacists interviewed

Pharm1 – has big drug stores in Boring Road in Patna
Pharm2 – had a very small drug store in Patel Nagar which got closed when the researcher visited in the year 2020.
Pharm3 – has a drug store in Patna
Pharm4 – has a drug store in village
Pharm5 – working in a drug store which has its chain of drug store in Patna.

2.8.4 Selection of Patients and People

Selection of patients or their relatives was also done on the basis of the consent given to the researcher by them. Table number 2.4 gives the number of people and patients in coded form who were informally interviewed.

Table 2.4 List of patients/people interviewed

P1 – lives in Kesari Nagar in Patna. Male	P6 – works in care India. Male
P2 – lives in Hussepur Village. Male	P7 – works in care India and is also a homeopathic doctor. Male
P3 – lives in Kesari Nagar in Patna. Female	P8 – worked in care India at the time of interview now transferred to another state. Male
P4 – lives in Hussepur village. Male	P9 – lives in Kesari Nagar in Patna. Male
P5 – lives in Rajeev Nagar in Patna. Male	P10 – lives in Kesari Nagar in Patna. Female
P11- owner and partner in a pharmaceutical company in U.P.. Male	P12- lives in Hussepur village. Female. Widow. Schedule caste. Husband died of cardiac problem.
P13- lives in Hussepur village. Female. Widow. Schedule caste. Husband succumbed to knee infection.	

2.9 Tools and Techniques of Data Collection

Ethnographic tools used to collect data from key respondents are - in-depth unstructured open-ended interview guide, direct and in-direct observation (participant and non-participant in-situ observation), telephonic conversation, casual interaction, and field diary.

Ethnographic tools like in-depth unstructured interview guide and direct and semi-participant observation methods were used to collect qualitative data from the research participants. Casual interaction was used as a tool for collection of data from the patients or their relatives. There were four sets of unstructured interview guide which were made for four sets of respondents. The unstructured guide sets for health care providers differed a little bit depending on the type of health care provider being interviewed. For the pharmaceutical representatives the thrust was on understanding the nature of their job, how they promoted their group of pharmaceutical drugs among various practitioners, what kind of unusual practices they overserved in their field, how they competed with other pharmaceutical brands, what was the problems faced by them, what were the incentives given by their companies to promote their drugs, etc. For the doctors or various types of health care providers the thrust was on understanding the importance of pharmaceutical representatives for them, what kind of favour do they give to them, whether they influence their prescriptive behaviour, how do they manage their patients and the pharmaceutical representatives. For the chemists the thrust was on understanding the nature of their business, pharmaceutical business done by them, how do they help the MR and the doctors, etc. For the patients the thrust was on understanding their health problem, the reason ascribed by them for choosing a particular system and when and how do they decide to visit a particular health care provider or doctor, their health expenditure and problem faced by the due to the health expenditure etc., their knowledge on health problems etc.

Unstructured open-ended interview guide was made for the interaction with the medical representatives (MRs), doctors, chemists which mainly focused around how the pharmaceutical industries operated their business and how pharmaceutical trade influenced the prescriptive behaviour of doctors. According to Guba (1990) from a constructivist paradigm the realities are multiple and they exist in people's mind and there are many interpretations that can be made in any inquiry. Hence the researcher

chose in-depth open-ended interview guide as a tool for data collection. From the MRs questions were asked around how did they market or promote their pharmaceutical drugs and further questions were made on the spot during the interaction on the kind of answers that they gave. Rather the interview guide was made after interacting with one or two MRs that gave clarity on the type of questions to be asked to understand the nature of their work. Some of the questions asked were – how do they market their drugs, how many doctors do they visit in a day, what strategies do they adopt to influence the doctors to prescribe, what is the change in the nature of their job in comparison to 20years before and now, what are the changes observed by them in the health market 20 years before and now. How do they manage their competitor's brand, what is the difference between big and small companies, how do they achieve their sales target, how do they ensure that the doctors prescribe their medicine, who are the people they sell their drugs to, what are the different incentive schemes and how do they use it, difference in marketing strategies of clinic doctors, of government hospital doctor, and of private hospitals.

Similarly open-ended interview guide was made for the doctors which focussed around understanding how many years of work experience they have, what do they think about medical representatives, why are medical representatives visit important for them, how do they manage the prescription of the medical representatives. The doctors had very little time spare to the researcher due to which forming a good rapport was also very difficult with them. It was observed that the researcher could not ask very openly about the pharmaceutical business and the doctor's role in it as she could with the medical representatives. The medical representatives were very open and articulate about their ethical and unethical business, however the doctors were not very open about it. The reason that the researcher observed was that if the doctors would talk openly about their prescriptive behaviour, then it would tarnish their image and ruin their career as patients would stop coming to him. The researcher could not get enough time with them so that they could trust her and open up.

Open-ended interview guide was also made for chemists to understand their role in the pharmaceutical drug sale and promotion. The questions from the chemists revolved around understanding what kind of change do they observe in their business in comparison to past 20 years. How and why do they substitute their drugs. How do

they assist medical representatives in the sale of their drugs? The researcher observed chemist's business by sitting and observing his day long business.

The casual in-depth interview, casual interaction with the people or patients of the study area in Patna and Hussepur village were focussed around understanding their health problems, where do they go and why do they change their health provider. The observation of the setting in which interaction took place, the way the respondents answered, how much did they understand the researcher's questions, their education level which would help them in understanding their health better; was done. Care was taken in noting down certain specific narratives which described the nature of practice and its impact on the people's pocket and their health.

The researcher attended a seminar organised for doctors. Keen observations of the surrounding, time and date of interview and back ground of the respondents were done. Telephonic conversation was done during Covid-19 pandemic lock-down period to collect data and clear doubts that arose during thesis writing. The validity of data collected long time back was checked by recollecting data, visiting the field again and through telephonic interaction. Field notes were written in field diary and background contextual notes of each interview transcript was made.

2.10 Sources of Data Collection

The data was collected from both primary and secondary sources. The primary source was the field work done in study site of Boring Road, Patel Nagar, Kesari Nagar and Rajeev Nagar in Patna District and Hussepur village in Amnour Block of Saran District. The secondary sources constituted the official documents such as census, articles from journals, books, pamphlets, monthly and annual reports of non-government organisation (NGOs) and government organisations (GOs), online news article and other publications and materials from national and international conferences as well. The secondary sources also included information and resources available from the internet.

2.11 Research Process

Data collection was done in phases. In the first phase data was collected from December 2007 to May 2008. In the second phase data was collected from June 2020-July 2020 to assess and understand the changes that occurred in the field. In June

2021 the researcher visited her field and took some interview. During the process of writing the thesis the researcher was constantly in touch with a few key respondents apart from the period specified for the data collection to get more data or reaffirm the data collected.

In the first phase of data collection in Hussepur Village the researcher spent 2 months of time from December 2007 to January 2008. In Patna she spent 4 months in data collection from February 2008 to May 2008. The researcher spent only two months for data collection in Hussepur Village as she was very familiar with the village as she had done her ethnographic field work in the village during her M.Phil. research work. So, for her Ph.D. she revisited that village. In Patna she spent four months in data collection as had to give time to understand the place and identify her respondents. As Patna was an urban region full of doctors and pharmaceutical company's representatives, she could identify many of her respondents especially the medical representatives who proved to be very valuable for her research work.

In the second phase of data collection that is between June 2020-July 2020, she mostly took in-depth interview of her key informants in Hussepur Village and in Patna; through telephonic or video calls, as there was lockdown due to Covid-19 pandemic. In the third phase she visited Patna for face-to-face interaction and observation in June 2021.

During the process of data collection, she also attended a one-day conference of doctors in Patna, which enriched her understanding and observation of the field. She also attended a conference organised by Bihar sociological society in the year 2020, which further gave her contacts for data collection and enrich her understanding of the field.

The researcher mostly conducted one to one in-depth interaction with the key research participants. Some of the interactions would last for 3-5 hours, and sometimes stretching for 2-3days. She used open ended unstructured interview schedule to guide her interaction. Some interactions would continue for two to three days depending on the time given by the respondent. In Patna the researcher used to sit at chemist shops to observe the sale and purchase of drugs. She would sometimes observe the interaction of doctors with the medical representatives with those doctors who gave

informed consent to her to sit and observe. In Hussepur village she sat and observed in the clinic of an Ayurvedic doctor, practicing western medicine. She used to take verbal informed consent from her respondents.

In Patna the interaction with the people were mostly in Hindi, whereas in Hussepur village the interaction with the people were mostly in Bhojpuri. The researcher knew both the languages well. The researcher recorded field notes in her field diary with the consent of her respondents later she would transcribe them in detail back at the place of her residence.

It needs to be mentioned that during the process of data collection the researcher was more drawn towards interviewing pharmaceutical representatives as many of them gave very rich and thick information on their job in the field, that gave lot of insight on the nature of western medical practice, its impact on the people of Bihar.

2.12 Data Saturation and Richness

In qualitative research unlike the quantitative research the measure of significance is difficult to measure as the sample size is not fixed and is also not large. In qualitative research to gain a significant result from the selected sample the researcher needs to aim at data saturation. Data saturation point is said to be reached when the same information or themes keep recurring and when there is no new addition in the information given by the selected data sources. According to Bowen (2008) data saturation is said to be reached when there is enough data to ensure that the research questions can be answered satisfactorily. A lot of rich and thick data has to be collected, wherein rich means quality data which is layered, detailed and nuanced and thick means quantity data, i.e., a lot of data. It is best to have both rich and thick data (Fusch and Ness, 2015). The researcher collected rich and thick data through primary and secondary sources. In order to enhance the richness or quality of the data she used to focus on in-depth open ended interview schedule by way of casual interaction. In that if the respondent is in a flow of speaking anything whether important or unimportant for the researcher, she would allow him to speak and take note of what he/she said. While writing notes or during data analysis process if researcher had doubt on her understanding of what her respondents meant or if she felt she missed asking about a particular instance, she would interview the respondent again. The

researcher would allow the respondent to speak even if the data was repeated and she continued interviewing new respondents until her data started repeating.

2.13 Data Triangulation and Biasness

Triangulation is done to improve the richness of data. To understand whether the data being collected is true or not. As, if many respondents state the same fact, then the data being collected is considered to be true. Triangulation can also be done through data collection and simultaneous observations of context and persons behaviour and way of speaking. Ethnographic data collection assist in triangulation of its data in numerous ways. It can be done through understanding the eye movement, behavioural responses, the setting in which interview is taken, respondents comfort level with the researcher, the relationship established between the two. Enquiring the same fact from other respondents in same or different settings. Data triangulation also helps in removing the biasness in the data. Data triangulation and biasness is also taken care of by understanding the research process and experiences of other researchers in the similar or different research projects or through published articles.

For data triangulation, the researcher used observation techniques, interviewed different key respondents on the same theme, and re-interviewed them to clarify certain points.

For example, the researcher interviewed the pharmaceutical representatives and triangulated the information given by them with the doctors and chemists. Regarding the patients she tried to understand the similarities and differences in their experiences with the health care provider, the context of data collection also helped in the triangulation of data. Constant self-reflection assisted in removing the biasness in the research.

2.14 Ethical Compliance

It is important to follow the ethical guidelines while conducting research so as not to cause any harm either to self or to study participants. For the ethical integrity of a research, the well being of the researcher and the study participants or respondents is equally important. While research should focus on the “good of mankind” and on widening the depth of scientific knowledge, the researcher should also focus on the employing ethical principles during the adoption of methods of research. As the

researcher enjoys freedom of thought and expression and freedom to choose the methods, she/he also has the responsibility of protecting the fundamental rights of consent, privacy, and safety of their human subjects.

The widely accepted declarations that codifies the ethical principles of research are:

1. The Nuremberg Code,
2. The Helsinki Declaration, and
3. The Belmont Report

Although the above codes originate in the field of Biomedicine, however they encompass research principles of all the disciplines which deals with human beings as their subject of study. Critical reflections on the research procedure and the process are required to ensure that the above ethical guidelines pertaining to the informed consent, anonymity and confidentiality concerns, and to the potential exploitation or coercion of study participants in the research, are met (Fischer, 2006).

In a qualitative study the basic ethical principle is – "Do not tamper with the natural setting under study" (Drew et al., 2007). Hence to preserve the natural setting and carry observation and interviews in it taking into consideration the ethical requirement of research becomes a little tricky. The researcher has used the narrative form of qualitative data most often to ensure that its interpretations are not modified and the context is also described more often to give a detailed ethnographic explanation of her research subjects, which is not tampered. The researcher explains below what were the ethical concerns and challenges that the researcher faced and how she dealt with them:

2.14.1 Informed Consent

Informed consent ensures that no exploitation and coercion is done to the participants in order to get information from them. Consent refers to the process through which a person decides whether or not to participate in research. The researcher's job is to make sure that participants are well aware of the study's goal and procedures, as well as the risks and obligations they will face as a participant. The participant should also be aware that he or she has the option to leave the research at any time. Thus, the consent given or taken is never permanent in the research. Informed consent has three

components from a legal standpoint: capacity, information, and voluntariness (Drew et al., 2007). Hence for a person to give consent he should have all the information related to research, should have the capacity to analyse the risks and then give his consent voluntarily. For example, kids do not have the capacity to give informed consent. Similarly, there are various groups of differentially abled people who do not have the capacity to give consent.

Now the question is – when should a consent be given? In some research circumstances it is mandatory to take consent whereas in some there may not be the need to take the consent, as such research circumstances and findings may not be infringing upon an individual's privacy, and may not cause any direct or indirect harm to him (Drew et al., 2007). According to Drew et al. (2007) the information given must be planned and presented in a manner and form in which the respondents completely understand it, in order to give consent. This can be verbal or on a printed document form. Thus, the researcher has a great responsibility to assure that effective consent is given.

In the present research study the participants were informed about the research and their right to withdraw from the interview at any point of time except in certain circumstances explained later. Verbal informed consent was taken by the researcher from her respondents. During the interview or interactions process, if they looked uninterested at any point, they either withdrew voluntarily or the researcher sensed it and stopped her interview. Adults can consent voluntarily to engage in research on their own, with full disclosure of the nature and implications of involvement (Drew et al., 2007). All the participants in the present research were above 18 years of age so they had the capacity to evaluate the consequences of the information given to them and thus gave their informed consent verbally.

As each study setting has its own set of conditions, consent procedures need to be tailored accordingly. Though Drew et al. (2007) talked about the study participants like children, people with mental disabilities, however according to the researcher this holds true for participants in ethnographic qualitative settings true. The researcher purposively avoided to take written informed consent as it would have made the research process very formal and this would have then intimidated some of the respondents and forced them to be deceptive and hide some information. Secondly the

researcher took the responsibility of protecting the rights, anonymity and privacy of her respondents on herself and took special care of this even while writing her thesis. As she did not even give a pseudonym to her respondents, instead she gave them numbers to avoid any kind of resemblance to her research participant in her thesis. As it was an ethnographic study, the researcher purposively did not give some of the information to a few of her respondents, as it would have altered their answers or the direction of casual interaction with them.

The verbal information given to her respondents to get their verbal consent are as follows:

2.14.1.1 To doctors, indigenous practitioners, quacks and medical representatives

They were told that the researcher is pursuing her doctoral thesis in JNU in the field of Public Health. The topic of her thesis is "Western Medical Practices in Bihar: An Ethnographic Study." She is trying to understand how drugs are distributed and marketed by pharmaceutical companies and how do the MRs market their drugs to the doctors and the chemist.

2.14.1.2 To the patients

They were told that the researcher is pursuing her doctoral thesis in JNU in the field of Public Health. She is trying to understand where do people go to when they get sick and why? What makes them choose a particular doctor and how is their experience.

The researcher ensured that no force or coercion or deceit is used that would physically, emotionally, socially, economically harm her participants.

When depending on observations in a qualitative research project, informed permission is required, but it might be problematic. In an Ethnographic research participant and nonparticipant observations are key components of data collection. Each one raises distinct ethical concerns about permission, privacy, and deceit (Drew et al., 2007).

Sometimes the presentation of observed conversations and behaviours may harm the research participants' families, communities, or places of employment. Furthermore,

in a observation especially in ethnographic research the other people who might not have given their consent, however they come in and out during the process of interaction or interview with the respondent are also observed. the research participants who have provided their agreement may not be the only ones who are observed. People move in and out of interactions, in natural settings for variety of reasons of their own (Drew et al., 2007). Thus, the actual research participants, who have given consent, may not be the only people observed.

Consent is not necessary or required if - (a) access to the setting is approved by the agency or institution, (b) participants who are actively involved have given informed consent, and (c) other observed behaviour is considered public and observable by anyone present in the setting (Ibid). Consent is also not required for nonparticipant observation research as the researcher clearly state about his position in a setting (Drew et al., 2007). According to the American Psychological Association (APA) consent need not be obtained when the research is unlikely to upset or injure participants. APA contends that research where disclosure of responses would not expose participants to criminal or civil liability or harm their financial standing, employability, or reputation, and where confidentiality is maintained, consent is not required (Drew et al., 2007).

In the present research there were no potential risk of immediate harm or psychological stress or pain or defamation. So, getting the consent of present research participants was not mandatory, however the researcher did take consent from the doctors, MRs and a few of the patients with whom she had face to face interview or interaction. According to Drew et al. (2007) the researchers must use their best professional judgement in terms of deciding the method of obtaining consent, must make decision based on the situation and potential risk of harm for the participants. If the study poses little or no danger or possible violation of privacy, consent can be sought in a less formal (i.e., verbal) manner. Participants may be verbally told of the nature of the inquiry (provided the capability factor is present) and give verbal agreement in such instances. The cost benefit ratio needs to be assessed while taking consent in certain cases (Drew et al., 2007). Hence all the respondents were informed about the researchers work and informed verbal consent was taken from them. The researcher guaranteed trust and anonymity to them through verbal communication and

through her behaviour and interaction and also through the people with the help of whom she would reach her respondents.

For naturalistic observation or for observation of participants coming in and out of interview or for observation of other people not in interview at public places, no consent was taken. There is no exploitation of research population for personal gain.

2.14.2 Implicit or Explicit Coercion

Implicit coercion was felt by the respondents at times during the interview however, the researcher managed it with care. For example, the researcher took verbal consent from MR5 before starting the unstructured interview, however during the interview, MR5 said that he would not have agreed for such an interview had the researcher not come through the reference of his friend. At that instant the researcher again informed MR5 the purpose of the interview, reassured him of his privacy and anonymity and his right to withdraw at any point of time. With this MR5 was doubly assured and opened up more during the interview and gave more in-depth information regarding how they are trained by the company and how they approach the doctor, which otherwise he wouldn't.

2.14.3 Use of Intentional Deception

The American Anthropological Association's code of ethics does not specifically warn against covert research. In qualitative studies the participant observer is a deceiver by definition. With or without consent "the participant observer affects the behaviour of others in the study" by his or her presence (Drew et al., 2007). In such cases the researcher must continuously critically examine his behaviours so that they do not pose potential risk or harm to study participants. In some cases, the researcher needs to take consent of core group leader although it is not enough to use deception as a method of participant observation (Drew et al., 2007).

The Use of deception is debatable in Social Science and Humanities Research as it is considered that it may harm the study participants. It violates the ethical principle of informed consent. However, some researchers argue that the use of deception is justified in cases where the research results are beneficial for the study population or the society at large.

In the present study the researcher has rarely used the concept of deception. In some of the participant observation deception was used as all the participants coming in and out of the observation purview were not informed about the researcher and her work. For this the researcher used the ethical principal of - no need for taking consent in publicly observable behaviour (Drew et al., 2007).

2.14.4 Transference and Counter Transference

Transference occurs when a person transfers his feelings and emotions for a person to the researcher and counter transference occurs when the researcher transfers his feelings and emotions for a person to his research participants. This mostly happens in a psychological therapy session.

During participant observation those under study, sometimes increasingly become comfortable with the researcher's presence. Thus, they sometimes lose their capacity for informed consent and may behave or talk in ways, they would not have done otherwise. "….their consent is then no longer "effective" in pure sense" (Drew et al., 2007). This also happens in the case of transference or counter transference.

During the participant observation, for example while talking to the people in her neighbourhood in her study site, the researcher took utmost care that she did not form too close a relationship with people so that it breaches the professional ethics and lead to transference and counter transference. The professional training of researcher in Masters in Social Work helped her in preventing occurrence of transference or counter transference.

2.14.5 Privacy and Anonymity

The research participants have the rights to privacy, confidentiality and anonymity so that they are not under potential threat or danger during or after research results. In qualitative research the invasion of privacy and breach of confidentiality pose substantial risks because of the sensitivity of data that is collected (Drew et al., 2007). In such cases consent should be taken to protect the privacy of the individual participants and they should be assured of anonymity of the data. In qualitative studies while presenting the observation data of a group or individual, fictitious names (or anonymity) are used to disguise the identity of individuals, groups and locations. The researcher in the present study took utmost care to protect the rights to privacy,

confidentiality and anonymity of her research participants and have followed the ethical guideline of taking consent. Disguised her participants and their names so that they could not be identified and thus maintained their anonymity. During the data analysis and interpretation, the researcher hid the identity of her respondents completely and coded their names and identity to ensure anonymity. Some of the information revealed by the study participant is understood to jeopardise their job and their company's reputation. Hence complete anonymity is used while presentation of data in the thesis, to protect the study participants. The researcher was also conscious of not asking any probing questions which would have threatened her participants.

The researcher remained non-judgemental during her interviews and observation that helped her to establish a rapport and trust with her respondents.

2.14.6 The Researcher

The United Nations Sustainable Development Goal 8.8 seeks to 'protect labour rights and promote safe and secure working environments for all.' The guiding ethical principle of 'do no harm' should equally apply to all research workers in order to prevent social science research from breaching this very goal (Steinert et al., 2021). However according to Steinert et al. (2021) there are no ethical norms to protect the researcher from the problems that he/she confront in the field. The researcher faces stress, strain, non-cooperation, safety and other issues in the field. They further aver that, the researchers may experience additional stress and strain due to the study conditions and settings in the field, which will force them to compromise on their data during data collection and while reporting their findings. Therefore, in order to increase the ethical integrity of research endeavours, ethical standards should also protect the researcher's rights (Steinert et al., 2021).

The researcher's training in Master of Social Work (MSW) from Delhi University and her MPhil research work has enriched her knowledge in interdisciplinary fields of psychology, sociology and how to work in the field. This helped her in easy interaction with the people at the grassroots, and how to get down to the level of the interviewees, so that they feel comfortable. A short-term training in ethnographic research data collection, interview and transcription also helped the researcher a lot in overcoming her stress as to whether she is going in the right direction in the field or not. Whether the data collected is rightfully required or not. The researcher is also

from Bihar. Her father settled after retirement in Kesari Nagar, which is one of the areas chosen for study. Hussepur Village which was another area of study is researcher's native village. Hence the familiarity of the study area also helped the researcher a lot during data collection. Thus, due to the above reasons the stress and strain of the researcher during field work was reduced to a great extent.

The presence of her father in the field provided a support and safety to her. His empathetic witnessing and sometimes explanation of her work to her respondents and explanation of the respondent's statements to her was a great help. At times he helped her in recollecting the data or analysing in field during the time of data collection. He was a was very helpful to her in maintaining the ethical principles and the integrity of her data. The researcher time and again would do self-reflection to ensure that the understanding of the field was not her own view but that of the respondents. All these factors together helped a lot to reduce her own psychological and emotional stress and fatigue arising out of problems in the fields.

2.15 Constraints Felt in the Field

During each phase of a research process, it is necessary to examine and reflect on it on a regular basis to strengthen its methodology and understand its limitations. It is a fact that incorporating all aspects of a particular investigation into a single piece of work is challenging. Hence limitations of the present research are given as follows:

The term "Western Medical Practices" given in the tittle is a broad term that will entail enquiry of large gamut of factors, institutions, relationships between stakeholders, socio, political and economic structures. However, the present study focuses more on the understanding of the impact of the pharmaceutical companies' marketing practices through medical representatives that influences and alters the nature of practices. It also seeks to understand the influence of pharmaceutical market on the indigenous medical practices. People's choice and preference for health services have been enquired upon. Here the grounded theory approach was applied.

In the village due to constraints of electricity which was not there at the place of her residence, sometimes she couldn't work on her laptop after the battery conked off late at night. (Otherwise, the laptop was charge at someone else's house staying in another tola, who had electricity connection in their house.) People in the village would sleep

early so many a times working in kerosene lamp light till late was difficult, as they would expect her also to sleep early.

Sometimes the researcher could not write her field notes in the evening due to certain inevitable reasons, so she would miss out on certain contextual details of the interviews taken. The researcher is aware that writing down of such contextual and background detail is very important in ethnographic work and one tends to miss out on some important details if it's not written immediately after returning back from field. Many a times extensive field notes couldn't be written in the field diary while talking to the respondents to maintain the flow of interaction, due to which some data were lost. However, the researcher tried to cover the loss by repeated interview with the respondents.

As the field data was very extensive and rich, and required simultaneous analysis to understand what more was required to collect, many a times the researcher felt tired and incapacitated to do the work. The need for undergoing more training for collection of field data in a more systematic manner was felt by the researcher. It needs to be mentioned that the researcher had the training and an experience of collecting ethnographic field data when she worked in India on a research project- which tried to understand the distribution and use of certain pharmaceutical drugs, conducted by Edinburgh University, U.K., in partnership with Centre for Health and Social Justice (an NGO in India).

As the Researcher had to take a long break due to unprecedented events, before submitting her thesis, so there was long gap in the data. She tried to overcome this gap by revisiting the field and interviewing some more respondents to understand the gaps in her data and changes in the field. The observations and interviews have been incorporated in the chapters; however, the researcher understands that there may still remain some gaps.

In the field while conducting in-depth interview and observations, many a times researcher would be lost at how to find her respondents and how to break the ice or form rapport with her respondents in order to get rich and thick information from them without any conscious hiding of information or conscious framing of responses. Researcher tried her best to get spontaneous response from her respondents at their

will or be free to answer the researcher without any fear of divulging the responses that may malign their image or risk their job. For the researcher getting down to the level of the respondents and instilling trust in them was a tough job, and her training during her Masters in Social Work, helped a lot. She always tried to approach her respondents through a channel or reference who would help in building trust for her among her respondents.

Being a woman researcher enquiring in a place which is predominately conservative and patriarchal, she sometimes felt people gazing at her - as for a female talking to unknown people especially males in the market or at a pharmacy shop or a clinic is not a common and acceptable event in Bihar. Her father helped her in establishing a rapport and neutralising the inconvenient or awkward place that people found her to be in. For instance, in a chemist shop at Patel Nagar in Patna, when the researcher was interviewing the chemist, she felt the quite questioning gaze of the customers who would come every now and then to purchase medicines. The presence of her father would neutralise their questioning gaze and this also made the chemist talk to her comfortably. Another example is – once the researcher was invited by a medical representative (MR) to his house in Patel Nagar as he was not having much time to talk to the researcher in the field- as she met him in front of a chemist shop where he had come to enquire about the sale of his company's drugs. When the researcher went to his house, the presence of her father and his interaction with the MR's family helped in establishing a friendly cooperative interaction. Her father's presence in the field greatly reduced her time of being accepted in the community especially among her respondents and helped them to open up.

There was an instance when the researcher was embarrassed and had to leave a clinic where a doctor couple owning the clinic did not like her interacting with their patients for great length of time. Although she had taken their permission for this but they felt intimidated afterwards, by her long interaction with their patients.

Although the researcher has taken utmost care to uphold the quality of her research work, she often felt the constraints of skilled knowledgeable helping hands on the field who could help her in data collection process, writing down in-depth transcripts and simultaneous analysis for in-depth understanding, and revisiting people for

affirmation of what they said and meant earlier. Sometimes she would get confused as whether she is going in the right direction or not.

As the interviews were mostly in-depth and unstructured, to allow the flow of response and discover the unknown facts which couldn't have been put in the question, many a times the researcher would get confused as what to write and what not to write in her notes. She couldn't record her interviews, which otherwise would have assisted her while transcribing. The researcher also felt the constraints of time and money. The researcher felt that time and money, if available would have smoothened her research work and enriched the quality of her work further.

In spite of taking so much of care, the researcher did feel that she did lose some of the data, as she couldn't write them in-depth in her diary, as she did not feel them to be important during data collection and transcription, as writing transcripts was very tiring, so she would leave writing things which she did not find important. For example, in the village the researcher observed the practices of an exorcist and she found it to be strange and difficult to relate to given her scientific temper. She couldn't relate the practice with her field of enquiry. Later while writing her thesis, she felt that it could have been explored more to understand the reasons for health choices and preferences of people.

2.16 Limitations of the study

As the study is an ethnographic study, the subjects or samples are not true representation of the Universe or total population. Hence the results cannot be extrapolated over whole of India. As the study engages in micro level in-depth exploratory ethnographic work, it cannot be extrapolated or generalised upon the whole of India. It requires more of such research in other parts of Indian subcontinent, to have a comprehensive understanding of subject.

The researcher's own potential and skills is very important in data collection and analysis and this also may lead to some inevitable biasness and misinterpretation of the results of which the researcher may not be aware of. As the study entails participant and non-participant observations some data might have been missed by the researcher and certain biasness might have been there, during analysis of which the researcher must not have been consciously or unconsciously aware of.

Some gap and limitation of my study is that it has focussed more on the interviews with the MR than the doctors and patients, as the perspectives of MR was more evident and researcher was able to collect more data and information on it.

As the doctors were difficult to reach and made to give long unstructured interview on the subject which was uncomfortable for them, hence less of the doctors were approached. Thus, some of the categories of respondents were not interviewed exhaustibly purposively to gather more information on how pharmaceutical companies alter the nature of practice of western medicine.

CHAPTER 3

HISTORY OF WESTERN MEDICINE IN INDIA

As evident from history, medicine represented an essential medium of interaction between business travellers to India and Indian inhabitants. For the East India Company or the British, medicine provided a direct medium of interaction with the social, cultural, and material lives of the Indian people. These cross-cultural exchanges between the British and Indians shaped their health and influenced the nature and form of western medicine, as well as the traditional medicines in India. Thus, the confluence of oriental and occidental knowledge of health care influenced and shaped each other. Western medicine went through the epistemological and paradigmatic shift with the knowledge advancement and technological breakthrough over the period. Such eventual transformations could not be observed in the indigenous systems of medicine. In a state like Bihar in India, such gradual change in the practice of western medicine and consequent marginalisation of indigenous medicines can be traced historically.

In this chapter, the researcher proposes discussing the history of Western medicine's growth in India during the colonial and post-colonial periods. This chapter also explores how advances in western medical technology and knowledge have led to the parallel advancement in western medicine. Its impact on the indigenous medical practice, or ‘medical pluralism’ as it has been popularised in recent years, is also discussed with particular reference to India. The history of pharmacy and pharmaceutical industries in the world and India also form an integral part of this discussion. Narrowing from the global, national to the regional level, the history of Patna Medical College in Bihar is also discussed to show how western medicine got established in Bihar. It is essential to know the history of western medicine in India. It will shed some light on how it was introduced and practised, who benefitted from it and how it transformed the indigenous systems of medicine. The political economy of western medicine will shed light on how western medicine itself has changed in its nature and form of practice. It will also enlighten us on why our health system is predominantly based on western medicine. It is pertinent that a good understanding of history is beneficial in comprehending the present and planning the future.

It is argued that the economic and political interest of the British forced them to bring western medicine to India, which further shaped the public health of the masses before and after Independence in India. Thus, the political economy of Western medicine shaped the present health system in India. With its primarily curative approach, Western medicine is mistakenly emphasized to protect and promote the health of the masses. As prevalent in the traditional systems, a pluralistic concept of health is required in India to address the needs of the present iniquitous health situation.

3.1 Medicine in Ancient and Medieval Period

Before the dawn of the Christian era, scientific disciplines in ancient India such as astronomy and mathematics were considered to be way more advanced than western science. It was the source of discoveries and inventions for the western world, who incorporated the knowledge and further built their scientific inquiry. However, these early achievements of the Indian civilization could not be sustained further for and by the Indians. Consequently, it declined. The decline of Indian scientific advancement was partly attributed to the rigid caste practices which restricted learning to specific groups; and the rise of the Muslim empire after 1100 A.D. During the Moghul period, the Muslim rulers practised and promoted the Unani system of medicine for nearly two centuries. The Moghul period ended in anarchy, giving way to the advent of British rule. The beginning of the British rule further contributed to the decline of Indian scientific knowledge in science, technology, and medicine. (Arnold, 2000).

Medicine in ancient India was well advanced. Charaka and Sushruta wrote materia medica, which formed the basis of the Indian ayurvedic medical system. The period under Gupta Empire is known as the golden period of India, marked with an established sound public health system inclusive of water, sanitation, and drainage. Each house had drains and toilet facilities. The Guptas were known for the establishment and patronage of free hospitals. Although progress in dissection and anatomy was restricted due to religious injunctions against corpses, the ancient Indian physicians excelled in skin grafting, cesarean section, pharmacopoeia. Mercury and iron were used in medicine, and such materials indicate that the physicians were good in metallurgy and chemistry. Doctors had good knowledge of peripheral operations and performed them when required (Singh, 2018).

The Medieval period in India was primarily governed by the Mughal rulers who brought with them the culture and traditions of Unani medicine. Ayurveda and Unani were widely studied, and in-depth investigations were conducted in the drugs and medication of both Unani and Ayurvedic systems of medicines. An essential feature of this period is that an increasing number of compendia of both Ayurveda and Unani medicines were made. The smooth and amicable exchange of knowledge between the two systems of medicine continued even in hospitals, where both the Unani and Ayurvedic practitioners worked together. However, the two systems of medicines continued to flourish without any significant discovery and research. Both the systems of medicines had similar governing assumptions- namely -the humoral theory. The dissemination of knowledge in both the systems of medicines was also quite similar as it was passed from teacher to pupil. These systems suffered a decline when their patron, i.e., the middle class, vanished with the advent of the British in India (Bala, 1982).

3.2 Emergence and Establishment of Western Medicine During Colonial India

The British doctors were the most prominent immigrants, along with the East India company and military. Surgeons were appointed in the ships sailing to India right from the inception. Their role was considered significant in understanding the local culture, climate, and environment affecting the health of the British merchants and army. The company *surgeons*[12] comprised botanists, zoologists, foresters, geologists, meteorologists, and specialists who sailed along with the British traders to India. They provided a wide-ranging European scientific inquiry of the Indian environment, culture, topography, weather, and climate, shaping the health of the local people and the health of the company and army of the British (Arnold, 2000). These *surgeons* were appointed at the principal British factories in India. With the gradual expansion of the East India Company with the help of the army by the mid-eighteenth century, these surgeons accumulated a wealth of knowledge of the Indian terrain. Rigid caste rules prevented Indian soldiers recruited by the company from accepting the

[12] The term *'surgeons'* has been used by Arnold (2000). It includes the array of experts in botany, zoology, geology, meteorology and other specialists, as medicine during the advent of colonial rule was not much advanced and such disciplines did not have clear cut boundaries. Anyone who had the knowledge of medicine and treating people were considered as *surgeons*.

medicines from these surgeons. Therefore, to dispense the medication prescribed by *surgeons*, Indian practitioners were hired who compounded their medicines with the *surgeon's*. In addition, Indians were also recruited to serve as medical assistants and medical orderlies in hospitals from the early seventeenth century. After 1760, they were organised under Subordinate Medical Services (SMS) created in each presidency. Later these were trained in the nineteenth century as "Native doctors" by the British. Among the Indians, the wealthy and noblemen also depended on European physicians, especially for surgical operations. Some royal kings also patronised European physicians along the *vaidyas and hakims* in their court. In 1788, the Nawab of Arcot hired eight European physicians and *surgeons* hailing from different countries (Saini, 2016).

The company's gradual territorial and economic expansion by the mid-eighteenth century to Bengal and southern India raised a need for a permanent establishment of European doctors to serve the health needs of the company servants and army. Hence Bengal Medical services were created with 40 surgeons in 1763. Similar medical services were developed in Bombay and Madras presidencies. The three presidencies, Bengal, Madras, and Bombay, after decades of warfare and expansion, by 1824 had around 630 surgeons and assistant surgeons. This number arose and fluctuated between 650-820 surgeons for the colonial period till 1913 (Arnold, 2000). A bureaucratic structure of medical services was developed with senior surgeons and assistant surgeons in higher positions in each province (Arnold, 2000; Saini, 2016). These surgeons were responsible for recruitment and maintained discipline and health policy decisions. After the 1820s, doctors were supposed to get formal degrees/diplomas to get higher positions. They were supposed to register under the 'General Medical Council' (GMC) after 1858. During the 1850s, the role of doctors gradually extended from military to civil services. The Civil Surgeons were in charge of the hospitals, clinics, prisons and were allowed to do private practice. Eventually "Indian Medical Service" (IMS) was formed in 1897 by bringing the medical services of the three presidencies under one umbrella (Saini, 2016). In the next hundred years, under the rule of the British government, the institutionalization of western medicine took place, and the bureaucratic structure of Indian Medical Services (IMS) was strengthened further.

According to Arnold (2000), in the 1860s, provincial sanitary commissioners were appointed to take care of the public health needs of the British and the Indians. However, it was only in the 1890s that they received formal training in public health. These sanitary commissioners were the senior officials from the Indian Medical Services. The surgeons were not allowed to undertake civil employment until they completed at least two years of service at the army hospital, according to rules issued by Lord Cornwallis in 1788. These officers were bound to return from their private civil practice if the army required them, as many surgeons were recalled during First World War. Thus, the company surgeons entered into private practice and supplemented their income through banking, landholding, and commerce, except for some posts that expressly forbade the private practice. However, these surgeons were not very much accepted by the Indians as they trusted their own Ayurveda and Unani systems more than the western system. Arnold (2000) avers that the social and professional status of the European doctors was not very high, and "certainly before 1857, they were often looked down upon by the European civil and military elite" (p. 61). The European recruits' low social and professional status in Superior Medical Services and the promotion of tropical medicine further motivated them to indulge in medical research to revive their fading social status and prestige in IMS. Rather than accepting the fate of decline, the senior medical officers tried to restore their status and reputation in Indian Medical Services (IMS) and further motivate the European recruits to work in India (Arnold, 2000).

The nominations in IMS were replaced by competitive examinations in 1855 held in London to reorganize it and strengthen it with skilled personnel. Indians could apply, but it was out of their reach due to the age and distance criteria. After 1886 the requirements for registration in General Medical Council (GMC), which helped in recruitment in IMS, became challenging for doctors (Saini, 2016). Consequently, post-1855, the doctors of Indian medical services were comparatively well qualified compared to those in Britain or British naval and military services (Arnold, 2000).

The period post-1850s also saw the establishment of medical schools to train paramedic staff recruited in lower rungs of hospital administration. Their courses were shorter, and they were given stipends while studying. After completion, they

were called “licentiates” and were bound to serve in government hospitals. They rarely carried out private practice (Arnold, 2000).

By 1905, changing political climate in India, and concerns over promotions and status, made IMS less attractive for British medical graduates, leading to growth in the recruitment of Indian doctors (Saini, 2016). Also, the ethnic composition of the IMS was considerably altered by recruitment of Indians and the reduction in European recruitment during the First World War. Between 1913 and 1922, Indian recruits exceeded European recruits by 122 to 111, causing post-war government concerns about the survival of IMS (Arnold, 2000)

It was believed that western medicine and doctors did not have many curative services to offer. So much so that before 1857 the social and professional standing of doctors were denounced by the Europeans and Indians. About a third of the western medical doctors died in India between 1764 and 1838. The surgeons in India were treated as socially inferior to their Indian counterparts, and this distrust weakened their position in the official arena. However, some medical officers continued to retain their power in the political and administrative spheres and contributed significantly to the advancement of scientific medicine (Arnold, 2000). Thus, with their power in the political and administrative spheres, the surgeons tried their best to mainstream their medicine and marginalise the Indian indigenous medicines.

3.3 Impact on Indigenous Medicine

The undisguised distrust shown by the European and military elites in India on the medical doctors of IMS, made it imperative for them to learn from the Indian indigenous practitioners and understand more about tropical medicine. It needs to be mentioned that Indian indigenous practitioners were good at treating the tropical disease of India and were looked at high esteem in comparison to British doctors. Indians were few in IMS and were mostly in meagre jobs of helpers and assistants. The massive cost of training European doctors to serve in India and the high salary given to them, and the lack of adjustment capability and high mortality among European doctors made it imperative to train the Indian practitioners in western medicine. It was planned that these Indian practitioners trained in western medicine would be recruited as assistants to European surgeons. Other reasons for this include,

first and foremost, the absence of social status, which has made IMS less appealing to British doctors. Second, during World War I, European doctors were summoned away from duty, leaving IMS in desperate need of Indian personnel (Arnold, 2000). As a result, IMS faced shortage of doctors. Therefore, Indians were considered essential for the practice and dissemination of western medicine. Indians were called upon to fill in the spaces left by the Europeans who no longer found it exciting and attractive. However, it was not considered safe to leave the lives of British servants serving under the queen to Indian indigenous practitioners. Therefore, they decided to train the indigenous practitioners in western medicine.

'Native Medical Institutions' were established in Calcutta in 1822 to impart medical training to Indians. It began with about twenty students and employed local vernacular language as the medium of education, and employed translated European texts in anatomy, medicine, and surgery. The instruction was conducted in the vernacular and with the assistance of English texts that had been translated into the native languages. The students were not given hands-on training in dissection; however, they were required to get clinical experience in different hospitals and dispensaries. The training was imparted in Western and Indigenous medical systems (Anshu & Supe, 2016).

In 1824 in Calcutta and in 826 in Bombay, training institutions were set up to train Indians in western medicine, who would be recruited in IMS to assist European doctors as, sub-assistant surgeons, dressers and apothecaries. The indigenous and Western medicine curricula were combined to attract local practitioners. Hindus were given classes in Ayurveda, using the works of Charaka and Sushruta, and Muslims were given training in Unani, along with the western medical concepts. With the opening of medical institutions providing training in local vernacular languages like Sanskrit, Urdu, Bengali, and Marathi in Calcutta and Bombay presidencies, the British set an example for peaceful and friendly co-existence of the western and indigenous medicines. They had political intentions and medical needs to merge the curriculum of indigenous and western medicine (Arnold, 2000). The students who studied in these institutions were Eurasians, Europeans, native Christians, and Parsis (Saini, 2016). Initially, the high caste Hindus were reluctant to join due to human dissection. When Pandit Madhusudan Gupta, an ayurvedic teacher, attended Calcutta

Medical College (CMC) and conducted his first human dissection in 1836, this barrier was broken. Many high caste Hindus joined the training, including the Brahmins. This event was greatly celebrated in Britain as the establishment of western medicine's superiority in India. The trainees of these native medical institutions got superior social status as a doctor.

Arnold (2000) avers that the inclusion of Indigenous medical training in western medical institutions in India was certainly not because they recognised it superior to western medicine or would replace the costly imported drugs with cheap local remedies. Instead, it was a measure undertaken to attract indigenous practitioners. It was hoped that their training and practice in western medicine would help the indigenous people recognise Western medicine's superiority (Arnold, 2000).

Lord William Bentick, the first governor-general of India, known for his social and educational reforms in India, introduced medical education reform on recommendations of a committee headed by Dr John Grant. Influenced by the utilitarian view, the committee in 1834 criticised the Native Medical Institution for the absence of instructions in practical anatomy (Anshu and Supe, 2016). The patronage and support that the British gave to the Native Medical College and Madrasa ended with Sir William Bentick's scientific and educational reforms, and oriental science and medicine were given superior status to indigenous science. The tolerant and symbiotic relationship ended. The Bentick policy recommended English as a medium of instruction and all promotions, stipend and funds for native school of learning stopped. Calcutta Medical College was opened as a maiden college to offer western medical education in English to Indians irrespective of caste and creed. Youths between fourteen to twenty years of age were selected through preliminary examination and trained in occidental medical education methods, where English was a medium of instruction. After that, the Indian Medical System or IMS recruited Indian youths trained in the western methodology. Thus, the fate of Native Medical Institution and the madrasas and Sanskrit Colleges offering instructions in vernacular was sealed forever in 1835 (Anshu and Supe, 2016). The official patronage to indigenous systems of medicine was terminated. The establishment of Calcutta Medical College ushered a new paradigm of medical education in India entirely based on western epistemology, and it is the foundation stone of present medical education

in India. As English became an official language of India, the gulf between western and indigenous medicine widened. The British campaigned to establish Western medicine's supremacy and thus further marginalise indigenous medicine (Arnold, 2000).

Rapid advances were made in western science around the world after 1820, resulting in further denunciation of indigenous medicine. There were breakthrough discoveries in Europe in pathological anatomy, amputations and surgeries, obstetrics, especially with the knowledge and use of chloroform. The Germ Theory was established, and with this, the basic understanding of disease pathology changed from humoral imbalance to problems in specific organs or tissues. The classification of disease based on symptoms and causation done by Linnaeus improved Western medicine's diagnostic and treatment method (Munsche & Whitaker, 2012). The invention and discoveries of the thermometer, stethoscope, and the microscope further improved the diagnostic capabilities of doctors. The discovery of vaccines ushered in an era of preventive public health approaches. Many infectious disease causations were known and contained (Arnold, 2000). Severe criticism of India's orthodox stagnant scientific thinking and medicinal practices were received from Christian Evangelic and radical Utilitarian's. They increasingly condemned the Indian practitioners as irrational and unscientific (Saini, 2016).

During the nineteenth century, the physicians in India primarily provided generalist care as the British Medical Fraternity was mostly opposed to the medical specialisation that emerged in Europe in the nineteenth century (Saini, 2016). One of the exemplary contributions of western medicine was that the state took responsibility for public health preventive measures like sanitation and hygiene. Vaccinations were introduced, and tropical diseases were studied elaborately and classified. Collection of vital statistics was initiated. Several epidemiological studies were conducted on cholera, plague, malaria, tuberculosis and leprosy (Anshu and Supe, 2016).

3.3.1 Standardisation and Professionalisation in Indigenous Medicines

In India, medicine was pluralistic, and there was an amicable exchange of knowledge and acceptance for alternative traditions. There were commonalities and contradictions between different traditions of medicine. Exchange of knowledge and ideas existed between Arabs and Chinese and Indian traditions of medicine. Ayurveda

and Unani systems co-existed and shared. However, the interaction between indigenous and western traditions of medicine was not linear and smooth. With colonial hegemony and the modernisation of education, oriental knowledge was denunciated as unscientific and irrational. With the state's patronage and power, the social prestige of western medicine rose to be superior, scientific and legitimate. It rose to the status of official medicine (Anshu & Supe, 2016).

Colonial medicine acted as an imperial ideology's tool and represented the blending nature of social control and humanitarian concern (Bala, 1991). The dialogue and relationship between western and indigenous medicines were not linear. With early 19th century, practitioners of western and indigenous medicines mutually respected and helped each other advance their respective medicines because both shared the standard theory of humoral imbalance (Arnold, 1993). It moved from 'acceptance and appreciation of indigenous medicines' by practitioners of western medicine in the seventeenth and eighteenth centuries to 'scientific scepticism' in the nineteenth century. Scientific scepticism enlarged the gulf between both the systems. It pushed the indigenous medicines from the boundary of rational, scientific and legitimate medicines into irrational, unscientific, dangerous and superstitious categories leading to the withdrawal of support of the colonial government as reflected in the closure of the Native Medical Institution (Singh et al., 2018). The emergence of hospital medicine (western medicine), new knowledge based on anatomy and physiology, and newer methods of medical intervention marginalised traditional medicines as old and outdated systems (Singh et al., 2018). Western-educated Indians also considered western medicine as scientific and rational, and they assigned themselves the task of promoting western medicine. By practising and promoting western medicine, Indian practitioners attained higher social standing. With the help of these practitioners, free medical texts, and well-equipped institutions, Western doctors provided tough competition to indigenous practitioners (Saini, 2016).

The Indigenous practice continued to be popular in villages because of its low fees, despite the loss of support from the British. The folk practitioners famous in rural areas outnumbered *vaidyas and hakims;* however, they had no written texts. Their cure mainly was based on superstition, and blind faith, which was not understood by the British and Europeans, and they often clubbed the classical and folk healers as

quacks. The indigenous elites used to patronise the *Vaidyas* and *Hakims;* however, as these ruling classes declined with the expansion of British rule, the high remuneration and prestige of the indigenous physicians also declined along with them (Saini, 2016). With the medicalisation of birthing process, the traditional birth attendants (*Dais)* were replaced by trained mid-wife and inclusion of midwifery in the curriculum of medical colleges (Guha, 2017).

Another reason for indigenous medicine's low status and authority was its operation on a very small scale. Although it received patronage from the local ruler and noble elite classes, their training and practice were never scaled up. On the other hand, western medical education was propagated on a large scale by opening colleges and hospitals in various presidencies. The practising Vaidya's called *Tols* trained their students in their home. The tradition and knowledge of Unani medicine passed through inheritance, mostly from father to son(s) and rarely to other relatives or persons. It was mostly a family tradition, and some of the prominent families belonging to this tradition were the Sharifi family of Delhi and the Azizi Family of Lucknow. These families trained the students in Unani Tibb in their clinics. The students learned from them and practised in different parts of the country. Hence no effort was taken to standardise the local knowledge. Due to cost-effectiveness and public acceptance, indigenous practitioners were still employed to increase acceptance of preventive measures, as evident during the plague epidemic in 1896 (Saini, 2016).

Consequently, this decline in the trust, status and prestige of indigenous medicine resulted in various reactions from the indigenous practitioners. Some practitioners going along with the British policy ultimately accepted western medicine as the only scientific system and left their indigenous system. Some of the ardent believers of Ayurveda and Unani completely opposed modern medicine and rejected the inclusion of western medical concepts. The Azizi family of Lucknow fall in this category. A few indigenous practitioners advocated the mixed practice of Ayurveda, Unani and Western medicine. These people believed in both systems. Many practitioners of pure Ayurveda or (Shudha Ayurveda) incorporated some aspect of modern medicine into the indigenous system and started vigorous promotion of it. They moved away from the family training traditions and opened their training institutions. For example, Madrasa-e-Tibbia was established in Delhi by Hakim Abdul Majid of the Sharifi

family. They inculcated aspects of Ayurveda and Western medicine into Unani-Tibb. They tried to emulate the exam and review system similar to western medical colleges. In the absence of government support, the family managed institutional running costs from the patronage of nobles, officials and affluent classes who believed in the Unani-Tibb system (Saini, 2016).

The contribution of *Vaidya*-Gangadhar Ray and Gangaprasad Sen is significant in supporting and continuing the traditions of Ayurveda in the period after 1835 (Saini, 2016). They trained many students in Ayurveda and adopted modern research and ideas to promote Ayurveda. Gangaprasad Sen and Neelamber Sen tried to professionalise Ayurveda by fixing consultation prices and medicine costs, advertising posters and publishing classical text and research journals. They started standardising and professionalising their medicine. Many Indian royals supported Ayurveda and institutions to train students in traditional medicines. For example, the Maharaja of Travancore in Tamil Nadu opened an Ayurvedic training institution in 1889, now known as Government Ayurveda Medical college (Megha, 2020).

The marginalisation of practitioners of indigenous medicines forced them to find ways to modernise their medicines. Once the table turned for indigenous practitioners, they adopted different methods to professionalise, institutionalise and standardise their medicine to legitimise and sustain their knowledge in the public sphere. These processes were named as revitalisation movement in the cultural sphere. 'Revitalization Movement' is a term used by Wallace (1956), an anthropologist, to explain cultural changes in society. He defined it as a deliberate, organized, conscious effort by community members to construct a more satisfying culture. When the present culture of society fails to deliver satisfying stress reliving mechanisms, the members of that society start to find new cultural practices to maintain the equilibrium of 'stress'. Stress is defined as a state in which one or more social organisms are at risk of more or less serious harm. An invention, a conflict, an epidemic, or a cultural distortion could all cause stress (Wallace, 1956). After the advent of colonialism, indigenous culture was threatened and distorted by the colonial government and western culture in every aspect in which the role of western medicine was prominent. Western medicine served as a cultural agency as well as a medium for expansion of western culture (MacLeod & Lewis (Eds.), 2022).

Western medicine tried to establish its superiority over indigenous medicines with the power it received from the state's support and the support of newly emerged western-educated Indian intellectuals. It marginalised and delegitimised indigenous medicines. The practitioners of indigenous medicines felt a sense of insecurity as they anticipated an unequal confrontation with western medicine. In this context, practitioners of indigenous medicines started to look critically at the state of their medicine. They planned a movement, both revivalist and vitality, which could revive the authority of ancient classical texts and, at the same time, borrow cognisance of aspects of western medicine such as anatomy and surgery. Following the path of western medicine, systematisation of knowledge, institutionalisation of training, and standardisation of medicine were also done.

The demand for *swaraj* or Home Rule entailed that India and its tradition be projected as a scientific, progressive, and modern nation. Therefore, this nationalist and revivalist effort aimed at establishing scientific credentials to Ayurveda. Publication and dissemination of books on Ayurveda in English, Sanskrit and vernacular languages helped propagate and share knowledge among other practitioners. All India Ayurvedic Congress was formed, and conferences were held. An Ayurvedic practitioner- M.M. Gananath Sen, from Bengal, founded an Ayurvedic College for training students in large numbers. Ayurvedic drug manufacturing industries were established (Anshu & Supe, 2016).

The British patronage of the western system of medicine has severely affected the Indian system of medicine, and this marginalisation continued for decades post-Independence. The trend in the contemporary context has changed but is still lagging far behind to match the status of western medicine.

3.4 The Post-independence History of Medicine

We have seen that public health efforts in the pre-independence era were mainly focused on protecting British civilians and army cantonments. Only the affluent and governing classes, which made up roughly 10 per cent of the population at the time of independence, had access to adequate western medical care. The majority of the Indian people were denied the benefits of this new medical system. More than 90% of the populace continued to rely on traditional medicine. Only 3% of Indian households

had toilets at the time of independence. Water, drainage, and waste disposal services were absent. India was afflicted with malaria, tuberculosis, high maternal and infant mortality, high population growth, malnutrition, gastrointestinal infection, and other issues at the time of independence. Leprosy, plague, cholera, and smallpox were all common diseases that took a heavy toll on people's lives (Shah, 1984).

India ranked first globally in infant and maternal morbidity and mortality and gross death rates. The death rate was 27.4 per thousand population, and the infant mortality rate was 162 per 1000 live births. At birth, the male had a life expectancy of 32.4 years, and the female had a life expectancy of 31.7years. Maternal Mortality was twenty per thousand live births. Many more women perished due to abortions, miscarriages, post-partum sepsis, and toxaemia during pregnancy. The fact that there was only one doctor for every 6,300 people, one nurse for every 43,000, one health visitor for every 4,00,000, one midwife for every 6,00,000 women, and 0.24 beds for every 1,000 population shows that health facilities were far from adequate. All government and local government hospitals were in urban areas, putting the entire rural population at the mercy of private practitioners and quacks of various medical systems. There were only twenty-five medical institutions with a total capacity of 2,500 students per year, and paramedical staffing levels were well below what was required at that time (Shah, 1984).

To deal with such problems, several committees and commissions were appointed to recommend ways to deal with such public health problems. Four significant forces influenced the evolution of India's public health care system after 1947:

1) The First Health Survey and Development Committee, constituted in 1946 during the colonial hegemony.

2) The development of medical technologies in Europe for illnesses like smallpox helped in prevention and control, particularly of communicable diseases (Shah, 1984).

3) International conferences and declarations to which India has been a signatory.

4) Economic crisis and subsequent liberalization and privatization policies.

The recommendations of the Bhore committee are regarded as the Magna Carta of Indian healthcare programs (Shah, 1984). The Bhore Committee's report was published in 1946, just before India's independence. The committee advocated for health for all, irrespective of their ability to pay and emphasized on preventive public health programs. To provide health for all, the committee recommended recruiting full-time salaried staff, including the doctors by the government, to ensure accessibility of free health services in the rural areas where they were most needed. The committee emphasized on the social determinants of public health. It recommended that for healthy living, suitable housing, sanitary surroundings, and safe drinking water supply, improvement in nutritional standards, elimination of unemployment, improvement in means of communication and transport, especially in rural areas must be ensured, thus laid emphasis on intersectoral coordination of various public health department and ministries. It emphasized both preventive and curative aspects of health. It recommended the prohibition of the private practice of full-time salaried doctors of state to pay attention to the curative and preventive health of the rural people. The committee made both long term and short-term programmes which would last for 2-5 years. Under the long-term programmes, it is recommended for associating and coordination between Departments of government such as agriculture, education, animal husbandry, etc., which directly or indirectly affect the people's health. It recommended three-tier preventive and curative health services based on western medicine. In the context of limited resources, the committee specifically recommended producing a highly trained type of physician they termed "basic" doctors. The training of "less elaborate type of medical man"[13] was thus excluded from the policy. They also believed that public health or preventive medicine is not within the purview of the indigenous system of medical treatment as they are static in their conception and scientific research (Bhore, 1946). The University Grant Commission was established in 1956, and the Indian Council of Medical Research was started in 1949. Furthermore, the Central Government ministries like the Health ministry and Science and Technology ministry were responsible for the clinical, academic and research and development support (Mishra et al., 2013).

[13] This refers to the quacks or registered medical practitioners.

Thus began India's Public health journey entirely based on western medicine, a gift of the colonial regime. The Pluralistic health care system was obscured and marginalized further. Bhore Committee ultimately adopted the institutional health structure created by the British and thus continued the colonial strategy of serving and supporting the powerful elite. The private allopathic health care providers grew through the 1950s and 60s, and most of them were fee-for-service (Berman, 1998).

The allocation of funds for health services was spread out in the five-year plans based on the Bhore Committee's observations. The efforts of the First and Second Plans were primarily focused on communicable diseases (Shah, 1984). Mudaliar Committee, formed in 1962, was the first health committee of independent India. The Mudaliar Committee was created to assess the health situation between the second and third plans. Even though significant progress had been made in many areas, this Committee found that the Bhore Committee's short-term targets had not been met, and thus they altered the targets to be more realistic. This committee emphasised maternal and child health (MCH) services to reduce infant and maternal mortality rates. They advocated increasing the number of primary health centres and midwifes. They introduced the concept of public health nurses and auxiliary health workers. Various health committees were formed between 1962-1975, like the Chadha Committee (1963), Mukherjee Committee (1965-66), Jungalwala Committee (1967), Shrivastav Committee (1973) and (1975) and Bajaj Committee in (1986). However, the studies and recommendations of these committees on building a community-based health delivery system did not impact the end-users of the services. The only goals that were met were the production of doctors and the establishment of metropolitan hospitals. Despite a threefold increase in hospital beds, eighty per cent of the population residing in rural areas has not benefited (Shah, 1984). The Mukherjee Committee (1965) emphasised having separate staff for family planning programmes. It was believed then that they could deal with the country's health problems and socio-economic conditions by controlling the population. The health programmes were criticised for being segmented and emphasising population control. The Jungalwala committee 1967 tried to integrate all the public health programmes under one administrator to have a unified approach for all health problems. By the 1960s, the vertical health programmes' technocentric tactics were failing. Surprisingly, during the nineteenth and early twentieth centuries, the fast growth of science and technology

in the west obscured the impact of rising wages and social policies. Medical technology gained centre stage, and until the mid-twentieth century, it was the dominant explanation for increasing health indicators (Qadeer & Nayar, 2005).

Population control became the most important target to achieve public health. The focus on maternal and child health (MCH), as recommended by Mudaliar Committee, was shifted to family Planning by the Mukherjee Committee in 1965. Most of the health budget was allocated to family planning (Kumar and Kishore, 2016). Several international conferences and conventions were held globally on health and development during the latter half of the 20th century. The International Conference on Primary Health Care held at Alma-Ata in 1978 was the first and last conference to thrust on "Health for all" through the primary health care approach. It advocated for integrated health and development plans, including family planning, and a complete reorientation of existing priorities, so that the majority of existing funds could be spent on nutrition, environmental improvement, immunisation, and education, rather than on curative services (Shah, 1984). It was condemned globally for having unrealistic and unachievable goals. Hence, a year after the Health and Population Development Conference was organised in 1979 sponsored by Rockefeller Foundation; the Selective Primary Health Care approach was adopted. It had a targeted approach known as GOBI (growth monitoring, oral rehydration treatment, breastfeeding, and immunization). Later, it was changed to GOBI-FFF (adding food supplementation, female literacy, and family planning). In India, the Maternal and Child Health (MCH) programs through the 1970s and 80s were shifted to Safe Motherhood and Universal Programme of Immunisation. They were reintegrated in the seventh five-year plan as Child Survival and Safe Motherhood (CSSM); however, the thrust remained on family planning.

Consequently, in its National Health Policy (NHP) 1983, India focused on the Primary Health Care approach and emphasized equitable distribution of health services to all. The goal of the NHP 1983 was to create "universal, comprehensive primary health care services that are appropriate to the community's genuine needs and priorities at a cost that individuals can afford. Even though decentralisation and de-professionalization of health care services were key objectives, community participation did not go as planned (Jana & Basu, 2017). However, it was only on

paper, and the main focus remained only on population control. The parallel changes at the global level impacted India's health policy. The International Conference on Population and Development (ICPD) held in Cairo (Egypt) in 1994 emphasized access to reproductive and sexual health services, including family planning. Subsequently, in the eighth and ninth five-year plans, CSSM was transformed into Reproductive Child Health (RCH) Program. World Bank's World Health Report, 1993, made in consultation with WHO, emphasized DALYs and cost-effectiveness for government resource allocation. Thus, they promoted privatization in public health care provisioning (Berman, 1998). Thus, under international pressure, India's health policies and programs shifted their focus from the overall health of the people to population control and privatization of health care services. Access to primary health care services became a dream for all, especially after the liberalization and privatization policies post-1990s. The introduction of Structural Adjustment Programmes led to 'public-private partnerships' in the subsequent five-year plans, especially after the eighth plan (Qadeer & Nayar, 2005).

The National Health Policy (NHP) of 2002 concentrated on the accessibility and availability of inexpensive health care. It attempted to address the polarisation of healthcare infrastructure, medical personnel, and other healthcare resources in urban regions, which had exacerbated regional inequities in healthcare access. However, growing economic, geographical, and gender gaps necessitated separate strategies for urban and rural audiences. The National Urban Health Mission (NUHM) and the National Rural Health Mission (NRHM) were created due to this. These policies provided implementation mechanisms to meet the distinct socio-economic demands of India's urban and rural populations, respectively. The government also supported private investment in health care to increase the number of service delivery outlets. However, the private healthcare delivery system had negative implications such as growing costs, increased disparity, and customer exploitation (Jana & Basu, 2017).

Family medicine and public health are combined in the National Health Policy of 2002, indicating the need for more specialists in these sectors. The transition to family medicine aligns with the World Bank's recommendations, shifting healthcare duties from the state to families. Under the influence of market forces, the WHO began to alter the theoretical foundations of public health. As a result, instead of focusing on

the government's role, the focus has switched to public-private partnerships. The environment (physical, social, and economic) was no longer the primary concern. Instead of focusing on critical socio-economic issues, the focus was on individual responsibility and behaviour (Qadeer & Nayar, 2005).

The National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM) aimed to make health care accessible and affordable for all under the public private partnership. It is assumed that the public health insurance schemes would bridge the inequality gap created by high expenditures in private health sector. Government gives subsidy and tax exemptions for the growth of private sector; however, they fail to provide low-cost health care to all (Rao et al., 2015).

3.4.1 The Private Health Care Providers

The private partner's influence expanded as a result of significant budget cuts in the health sector, and it began to steer policy. Given the weakening of public institutions, professionals (doctors) could break the rules set by the state. As the doctors in Bihar, Uttar Pradesh, and Maharashtra staged public demonstrations against prohibition of private practice for government doctors. The 10th Five Year Plan extended beyond streamlining the government's physical infrastructure. The proposed 10th Plan goes far and beyond rationalising government physicians' private practises by claiming that they are entitled to a higher fee due to their extensive experience (Qadeer & Nayar, 2005).

According to Qadeer and Nayar (2005), the training of doctors in India has dramatically outstripped its demands. This excess does not manifest itself as an overstaffed public sector. Instead, the public health system is marked by unfilled positions, particularly in rural areas. According to national statistics, there were only 667376 general nurses, 301691 ANMs, and 24824 health visitors by the end of the 1990s. In contrast, doctors have significantly increased since 1971 to 3,65,000 in 2005. Compared to overall requirements, the number of nurses and paramedical workers in rural Primary Health Infrastructure is deficient.

Instead of locating the surplus of doctors in the private sector, the policy of opposing the establishment of new medical colleges, which had existed until the 7th Plan, was

revisited after 1991 many positions were vacant in various places. Since the 1990s, the number of medical colleges has risen dramatically. (Qadeer & Nayar, 2005).

Non-government allopathic providers were widely used in rural and urban areas in the 1960s, most of whom were fee-for-service (Berman, 1998). For much of India, it may be that the government has never been the primary provider of ambulatory illness care. However, it has long been the leading provider of personal preventive services and population-based public health programs (Berman, 1998).

According to Berman (1998), Indian households spend a significant amount of money on health care, the majority of which is ambulatory care. According to the 42nd round of the National Sample Survey (NSS), 70% of out-of-pocket (OOP) spending is spent on outpatient disease care. Private providers dominate ambulatory treatment care. As a result, private health care providers receive 56 per cent of total out-of-pocket spending. Ambulatory care provided by private companies is an essential aspect of India's healthcare system. It is observed that private providers had the most contact for problems like dysentery, malaria, and tuberculosis. However, most of these diseases have been government priorities. Despite the National Tuberculosis Program, which provides free diagnosis and treatment to people with tuberculosis, most of the people went to private providers. The lower-income people in rural areas tend to use more of the private providers in comparison to their urban counterparts. This shows that national health policies have not attracted poor people to its free health care programs. Berman (1998) argues that the rural population in India is not underserved in terms of health care providers. However, they have to bear the heavy burden of cost and inadequate quality of care. The government health care facilities at the peripheral level have been perceived to be of poor quality. Thus, they have failed to attract poor people. Emphasis on family planning programs was another impediment to improving the quality of other health care programs. Thus, even if India has achieved impressive gains in access to health care facilities, the people at the grassroots level still face problems regarding access and quality of health care facilities.

For years, anthropologists have reported that many "traditional" health care professionals, primarily those who practice Ayurveda, also employ allopathic medicines (Berman, 1998). The vast majority (more than 80%) of these practitioners were not legally qualified doctors in any system. They are usually fewer practitioners

that provide eclectic health care by mixing techniques from several treatment systems. India permitted licensing of "Registered Medial Practitioners" and Licensed Medical Practitioners until the mid-1970s in many states. These untrained private health care providers account for nearly half of all health expenditure in India (Berman, 1998).

The expansion of the medical market was aided by the opening up of medical care to the private sector and public institutions to private investment and the introduction of a user fee. Multi-National Companies (MNCs) that manufacture pharmaceuticals and equipment were crucial players in this transformation. Their primary goal was to promote medical care commercialization while downplaying the significance of the social sector and welfare programmes. Many people have pointed out the link between technological focus and market interests **(**Qadeer & Nayar, 2005).

3.4.2 The Marginalisation of Indigenous Medicine Post-independence

Post-independence, the Bhore committee further marginalised the indigenous medicines. The committee undoubtedly laid a pervasive health plan for the Indian population but failed to incorporate the indigenous medical systems to ensure health for all. The committee believed that public health or preventive medicine was outside the purview of indigenous medicines. The committee argued that no system which is static in its concept and practice and does not keep pace with the new scientific research and discoveries around the world could give the best treatment. Hence, the committee left it to the discretion of the provincial government to use indigenous medicine (Bhore, 1946). Bhore committee completely ignored "The Usman Report 1923", an extensive report on the indigenous system of medicine. According to Wujastik (2008), before independence, several reports and legislations were made for the professionalization and standardization of the indigenous system of medicine. However, the Bhore committee ignored them and deemed the indigenous system of medicine unscientific. There was no mention of initiatives to professionalize the field, such as founding the All-India Ayurvedic Congress or state-level activities. There is no mention of the Indian Medicine Council Act of 1933 or the even more crucial Bombay Medical Practitioners Act of 1938, which established a separate medical registration for Vaidyas and Hakims for the first time, legitimizing and controlling their practice at the same time (Wujastik, 2008). Three members of the Bhore

Committee, namely -Drs Butt, Narayan Rao, and Vishwanath, were of positive view towards the indigenous system of medicine. They supported state training and regulation of the practitioners of indigenous medicines. They recommended that the practitioners trained and registered under the Bombay Medical Practitioners Act be utilized for India's public health and medical relief. The support rendered by these three physicians ultimately led to the further sustenance of indigenous medicines in India. The Chopra Report 1948 tried to interpret and showcase indigenous medicine as scientific and comparable to western medicine to absorb the indigenous medicines. However, all explanations were subsumed by Hegemonic Western Medicine and its supporters. The indigenous medicines utilization and its infrastructure thus developed in a post-independent period to support the western medical infrastructure and its health system (Wujastik, 2008). The withdrawal of the state's support after the Bhore committee report further delegitimized a pluralistic health care system close to people (Priya & Godhajkar, 2018). In the 1950s, several committees were formed to examine the integration of indigenous medicines into the national health system. Efforts to regulate indigenous medicine's teaching, practice, and research continued after independence with more government acts and legislation (Wujatik, 2008). In 1958, the Udupa Committee or the Committee on the Reform of Practice, Education and Research in Indigenous Systems of Medicine led reforms on the Indian System of Medicine (ISM), including changes in education, training and research at the national level. It was a milestone in the revival and mainstreaming of ISM.

The Mudaliar Committee 1959 emphasised modern medicine and increased the cadre of doctors in allopathy. They emphasized the need to give modern medicine degree qualifications to the students trained and qualified in Ayurveda. With the passing of the Indian Medicine Central Council Act 1970, the Central Council of Indian Medicine was set up. The council was responsible for framing and implementing various regulations related to indigenous medicines, including the curriculum and syllabus of Indian medicine. Thus, with the establishment of the Central Council of Indian Medicine, the Ayurveda and Unani training became institutionalised (Ruhil, 2015; Megha, 2020). After the Alma-Ata conference in 1977, to achieve health for all, it was decided to utilise the traditional practitioners after appropriate training to provide primary care to people closest to their residence (Priya & Godhajkar, 2018). A cadre of village-based auxiliaries called the Community Health Workers were

launched in 1977 on the recommendations of the Srivastava committee. These were part-time workers selected from the village and trained for three months in both allopathy and indigenous systems of medicine to provide primary promotive and curative care to the people (Duggal, 2001a). Thus, to rectify the shortage of human resources in the rural areas, the indigenous system of medicine was considered to supplement and support the health system, which was primarily based on the western system of medicine. The Alma-Ata declaration 1978 led to the adoption of the "Health for All" approach with a primary focus on community participation and universal access. Hence the traditional practitioners were viewed as allies, and with adequate training, they were recommended to be adopted in the primary health care approach (Ruhil, 2015). This paradigm shift was articulated in the 1983 health policy. The 1983 health policy called on for re-orientation of the existing structure for the health personnel and inclusion of various systems of medicine and health care at the appropriate levels, within specified areas of responsibility and functioning, in the overall health care delivery system, especially with regard to the preventive, promotive and public health objectives (Goel & Goel, 2009).

National Health policy of 1983 eventually led to the creation of the Department of Indian Systems of Medicine and Homeopathy (ISM &H) in 1995. In 2003, it was renamed as Department of Ayurveda, Yoga, Unani, Siddha, and Homeopathy (AYUSH). "The Central Council of Health and Family Welfare in 1999 recommended the posting of one ISM&H physician at every Primary Health Centre and vacant posts of allopathic doctor to be filled by ISM&H physicians. The Council also recommended establishing specialised ISM&H treatment centres in rural areas and a separate wing of ISM&H in government hospitals. In 2002 World Health Organisation came up with its strategy on traditional medicine, and thus emerged in India the National Policy on Indian Systems of Medicine and Homeopathy 2002 to encourage the development of AYUSH. Sowa-Rig-pa, a system of medicine borrowed from Tibetan medicine that incorporates pulse-analysis and urine-analysis, was included in AYUSH in 2012 (Ruhil, 2015). In the same light, the National Health Policy 2002 considered an expansion of medical cadre to include the licentiates and practitioners of Indian systems of Medicine and Homeopathy (Goel and Goel, 2009).

In 2005 National Rural Health Mission (NRHM) was launched to provide accessible, affordable and quality health care to the rural population. One of the strategies of NRHM was to mainstream AYUSH in the national health system. The purpose was to strengthen the health service system by providing human resources in the form of AYUSH doctors. Under this, one AYUSH doctor was posted at the primary health centre, and two at the community health centre. At the CHC level, the AYUSH doctors were made to sit in a separate room and provided a separate set of paramedic staff to support them in practising their medicine smoothly. Implementation of national health programmes was given to the AYUSH doctors. AYUSH medicines were included in Accredited Social Health Activist's (ASHA's) drug kit. The Reproductive Child Health (RCH) programme included seven Ayurvedic and five Unani medicines. However, the AYUSH doctors were considered secondary to allopathic doctors, and their salary was also less (Ruhil, 2015). Thus started a gradual mainstreaming of AYUSH in the national health programs and the national health system.

National AYUSH Mission was launched in September 2014, and in November 2014, the Department of AYUSH was upgraded to the Ministry of AYUSH (Ruhil, 2015). The establishment of the Ministry of AYUSH was a significant attempt by the ruling government to position AYUSH as a system parallel to western medicine. The Draft National Health Policy 2015 recognised the importance of traditional medicine in India.

Many reforms in administration, research strategies, practice and education, are already underway at the Ministry of AYUSH. The National Health Policy (NHP) 2017 has strongly advocated mainstreaming the potential of AYUSH within a pluralistic system of Integrative healthcare. The National Health Policy (NHP) 2017 uses a new language of 'medical pluralism' and re-emphasizes the need for integrating AYUSH in the National Health Mission, research and education. Indeed, the NHP 2017 is the most potent policy expression of integrative healthcare. However, the implementation of the program plans by NITI Aayog does not reflect this. AYUSH sectors seem to have been marginalised. NITI included the bridge course in western medicine for AYUSH practitioners and paramedical staff to prescribe essential medicines. However, the bridge course for western medical doctors

and paramedical personnel to enable them to deal with non-communicable diseases ignored the prescriptions related to nutrition and lifestyle changes integral to indigenous medicine. AYUSH practitioners are at a lower level in the hierarchy of human resources. They are positioned at the level of the nurses, not doctors, reflecting on the 'sense of superiority' of the allopathic system. Thus, health pluralism as advocated by NHP 2017 is not being promoted by NITI effectively (Shankar & Patwardhan, 2017).

Several issues continue to obstruct the smooth transition of the indigenous systems of medicine into the mainstream health system. First and foremost, lack of will and foresight to recognise the potential of AYUSH to address the health needs of the people. The other important reasons are lack of social and systemic support; and respect for the practitioners of AYUSH. The AYUSH drugs are generally found in short supply (Ruhil, 2015). The health budget allocation is highly skewed towards the Ministry of Health and Family Welfare.

The integration of AYUSH has been done at the level of infrastructure only. The Ayush practitioners are often hired on a contractual basis, and they are often looked upon as secondary in the hierarchy compared to allopathic doctors. The two systems of medicine exist separately in the national health department, and the patients are not treated holistically. Ayush drugs are often in short supply in government hospitals. There should be some integration of AYUSH courses in the MBBS course to upgrade allopathic students' knowledge and to sensitise them towards the AYUSH system of medicine (Ruhil, 2015).

3.5 History of Drugs and Pharmaceutical Industries

The history of India's drugs and pharmaceutical industries would be incomplete until we discuss their development in the west. The development of drugs in the west lead to consequential change and development in India. Drugs and Pharmaceutical industries, with a heritage of more than 50 centuries, have evolved and developed with the contribution of almost all civilisations of the world. Throughout history, social-political and economic context shaped the pharmacy and its relationship to medicine. Thus, the boundaries between the two professions were negotiated and defined.

3.5.1 Ancient Period

In the ancient period people learnt about medicine and plant through trial and error, and there was no fixed rules or regulations for making medicines or treatment. In Mesopotamia (the region around Iraq), medical and surgical procedures were regulated during King Hammurabi's reign (1795-1750 BC). Diagnosis and treatment were separated from the preparation of medicine. Medicines were prepared by assistants called apothecaries. Papyrus Ebers (1500 BC) is a compendium that records 875 prescriptions and 700drugs. Early Egyptian medicine embraced demons, superstitions and magic. Later the medical practice was more rational as the physicians used plant drugs and chemicals. Around 490-300 BC, Sicilian-Empedocles developed the concept that everything on earth was made up of four elements (fire, air, water, and earth). This became a well-established medical thought for the next 2000 years. Hippocrates (460-377 BC), the most revered Greek philosopher in medicine, developed the Humoural theory. The theory stated that four liquid humours- blood, phlegm, bile and black bile existed in humans, and disease was a result of an imbalance of these humours. The Hippocratic medicine used some 300-400 drugs lesser than the Egyptian medicine (Court, 2005).

By around 43 AD, the Romans had compiled in a book- *De Compositone Medicamentorum*. It was a collection of prescriptions and treatments. There were 242 vegetable drugs, 36 minerals, and 27 animal drugs. Minerals like- alum, copper, silver salts, sulphur and soda were used, and plants like Opium, ginger, costus, cedarwood oil were used. Galen (129-199 AD) was the second most great medical man who made significant advances in medicine and surgery. He used to keep his drugs in a storeroom called *apotheca.* In the Roman era, the better educated, primarily upper class, became physicians with high esteem. The medicine gatherers and preparers were separated from physicians and were known as apothecary based on Galen's drug storeroom *apotheca* (Court, 2005).

The shops of drug sellers appeared in Persia in about 750 AD, and apothecary shops appeared in around 850 AD. These apothecaries were run by educated men of high ethics who prepared a wide array of medicines using classical, Persian and Indian drugs and Chemicals (Court, 2005).

3.5.2 Medieval Period

Epidemics and wars characterised the early centuries of the second millennium. The Black death cast its spell on the whole of Europe for centuries. Italy, France, Spain, and England were important learning centres, and scholars from Persia migrated to these regions (Anderson, 2005). In Middle Eastern countries, government officers in about the 13th century used to inspect shops of pharmacies and herbalists. Around this time, England was one of the leading centres of trade for the European countries, and thus accurate weights, coins for trading, and collection of taxes and tolls were done. During this time in such a commercial environment, the sellers of drugs and spices established themselves. In Sicily, the Arabs introduced pharmacy as a field separate from medicine (Anderson, 2005).

Fredrick II an emperor of Germany and King of Sicily, created an edict of Palermo which separated the profession of physicians and apothecaries, and elaborated that both required specific skill and responsibilities. It clearly stated that physicians and apothecaries could not enter into a business relationship. Government made a list of drugs to be used and controlled prices to stop the exploitation of the sick (Anderson, 2005). Fredricks decree provided a base for further legislation in other parts of Europe. However, this idea of a separate profession did not reach England for several centuries.

Britain

History shows us that the trade in drugs and spices was lucrative even in the Middle Ages. The Pharmacy practitioners in England were members of the Grocer's Company, which had monopoly on importation of drugs during the 16th century. The Apothecaries were a relatively smaller group of individuals overshadowed by a large group of wholesale merchants. With the signing of the new charter in 1617 by King James I, the London apothecaries were established as corporate bodies with "The Worshipful Society of the Art and Mystery of the Apothecaries". With this Charter, the profession of pharmacy was established, which set up minimum training standards, rules for practice and rules for inspection at regular intervals. The charter granted a monopoly to the apothecaries over the sale of drugs (Anderson, 2005). This set the scene for the next stage of the evolution of the Pharmacy and pharmaceutical industries.

17th century to mid-19th century

The period from the 17th century to the mid-19th century was the period of transition for pharmacy in Britain. The occupational boundaries between physicians and apothecaries were constantly challenged. The boundaries between preparation and supply of medicines were also challenged between apothecaries. Parallelly the idea of the nature of disease also constantly changed along with the substance used to treat them. Formularies began to appear to ensure the quality of drugs. This laid the foundation for the Pharmaceutical Society of Great Britain, established in 1841 (Anderson, 2005). All this took place within Britain's complex social, economic, and political context.

In the 17th century, there was a large gap between the rich and the poor in England, Wales and Scotland. People in towns, especially in London, lived under very filthy conditions. The streets were covered by sewage which often led to the spread of deadly diseases like plague, smallpox, dysentery, typhus, typhoid, and tuberculosis. People lived in terrible conditions, often packed together in tenements that frequently collapsed without warning. Infant mortality was very high, especially in towns. Medical practice during this time was primarily based on the humoral theory propounded by Hippocrates. Thus, the line of treatment involved bleeding, purgatives, diaphoretics and enemas to get rid of the excess of humour in the body (Anderson, 2005).

When Edward Jenner discovered cowpox vaccination in 1798, for the first time, the method of vaccination was recognised and accepted by the conservative physicians of western medicine. However, inoculation was practised in India, Africa and China long before the 18th century (Riedel, 2005).

The pharmaceutical industry grew in the American colonies as well. Immigrants from all over the world have made significant contributions to the pharmaceutical industry's growth. Louis Hebert, a young Parisian apothecary, established a therapeutic plant garden with the help of Micmac Indians, earning him the nickname "green thumb". In 1729, an Irish immigrant named Christopher Marshall opened an apothecary shop in Philadelphia. Later, this pioneering pharmaceutical company evolved into a leading retail store, the hub of large-scale chemical manufacturing, a "practical training school for pharmacists," and an important supply depot during the Revolutionary War. For

the first time in history, in the mid-eighteenth century, John Morgan, a champion of autonomous practise of two professions, hospital pharmacist and physician, in North America, promoted prescription writing (M.R., 2011).

After that, the nineteenth century saw a surge in drug discovery. Friedrich Wilhelm Adam Sertümer (1784-1841), a young German apothecary, extracted the first alkaloid morphine after Swedish pharmacist Scheele pioneered the road for separating organic plant acids. It heralded the beginning of a new era by discovering a new class of organic compounds known as alkaloids. This new class of alkaloids was later the subject of a slew of drug discoveries. In 1817, French pharmacists Pierre-Joseph Pelletier and Joseph-Bienaimé Caventou extracted emetine (used to treat amebiasis) from ipecacuanha, as well as strychnine and brucine (a local anaesthetic) from nux vomica in 1818. They later developed the methods for extracting quinine (used to treat malaria) and cinchonine from cinchona bark in 1820. This is, of course, classic American Indian wisdom. They set up manufacturing facilities after preparing pure salts and conducting clinical tests. They solved an issue that had baffled scientists for decades as they tried to decipher the secrets of the Peruvian barks that were so effective against malaria (M.R., 2011).

3.5.3 Modern Period

By the mid-nineteenth century, the western medical fraternity believed in the theory that there is no single cause of a disease. In 1847, Dr Ignaz Phillipp Semmelweiss propounded a paradigm shift in the aetiology of childbed fever and linked it to a single cause of infection from dead decaying matter. He advocated for handwashing with chlorinated lime solution and cleanliness of bed linens and hygiene. Along with its enormous success, Semmelweis' discovery directly challenged scientific and medical views of the time (Ataman et al., 2013; Achila et al., 2020). At that time, Western medicine was in a phase of acceptance and rejection of discoveries. According to Henao (1999, as cited in Achila et al., 2020), Semmelweis' contribution was the birth of a new paradigm: the germ theory of disease. He is now considered the father of antiseptic procedures in modern medicine.

It's worth noting that Louis Pasteur and Robert Koch contributed significantly to the development of bacteriology, particularly between the 1860s and the 1880s. Following Pasteur's research in the late 1850s and 1860s, the germ theory of disease began to shape. It was only in the 1880s that it gained widespread acceptance in the medical community (Gillies, 2005). The use of phenol (carbolic acid) to prevent infections by Joseph Lister in 1865 set the path for the current era of antiseptic surgery in England (M.R., 2011). All these social and political change was in time for Lister but too late for Semmelweis. (Achila et al., 2020)

These breakthroughs ushered in a paradigm shift in principles of western medicine. Allopathic medicine advanced far ahead of any other system of medicine due to the development of the medical profession and the evolution of bacteriology. With the advancement in bacteriology, a new era of pharmacological therapy began, in which "snake oil" drugs were replaced with chemicals, biological products, vaccinations, and sera, among other things (M.R., 2011).

3.5.3.1 Industrial revolution

According to Davis (1997, as cited in M.R., 2011), the Industrial Revolution changed the structure of research and the organisation of medicine, laying the foundations for today's modern pharmaceutical industry. In addition, the number of pharmaceuticals increased dramatically in the nineteenth century as a large number of compounds were refined from natural sources (M.R., 2011). Since W. H. Perkin's creation of synthetic dyestuffs in the 1850s, Pharmaceutical industries have grown to be one of the most significant and most profitable Western industrial businesses (Bonah, 2014). The advent of new technologies characterised the second industrial revolution (1850-1900). Synthetic dye and related pharmaceuticals, ammonia soda, fertilizers, explosives and electrochemical processes were developed and manufactured. Industrial research laboratories emerged during this period (Homburg et al., 1998).

The age of new medications began in 1899 when aspirin was approved for therapeutic use. Before that, only a few chemicals - opium, smallpox vaccine, quinine for malaria, and ipecac for dysentery - were used safely and effectively (M.R., 2011). In the five to six decades following 1899, there was a deluge of new medications, just a handful of which were judged to be effective, safe, and relatively inexpensive (Ilich, 1976).

Medical science and modern allopathic therapy began to reach new heights at the turn of the twentieth century. As a result, the pharmaceutical business received a boost. While testing the germ-killing characteristics of red dyestuffs, Dr Gerhard Domagk, a German chemist, developed "Prontosil" in 1935. As a result, medical professionals began to use prontosil to treat various ailments, including pneumonia, urinary infection, childbed fever, and scarlet fever. Later study on the prontosil resulted in the invention of sulpha-drugs, which have since become essential in treating infectious disorders. With the discovery of penicillin by Alexander Fleming in 1928, the era of antibiotics began. Flory & Chain -a US pharmaceutical firm, along with other US corporations, began manufacturing penicillin on a small scale in 1941. When Selman A.Waksman developed streptomycin in 1943, it led to massive success in treating tuberculosis. After this, a series of drug developments took western medicine to a different scale compared to other indigenous medicines. Chloramphenicol and neomycin were discovered in 1949, oxytetracycline was discovered in 1950, reserpine was discovered in 1952, and tetracycline was discovered in 1953 (M.R., 2011).

The pharmaceutical businesses as we know them now evolved in the second half of the nineteenth century. Today's pharmaceutical company- Merck has its origin in 1827 when Heinrich Emanuel Merck started manufacturing and selling alkaloids. Beecham, a British pharmaceutical company in mid-nineteenth century, started manufacturing medicines at a large scale and produced patented medicine from year 1842 and became the world's first factory for producing medicines from 1859. Pfizer, an American company, was founded by two Germans in 1849, and their business expanded rapidly during the American civil war due to a huge demand for painkillers and antiseptics. Colonel Eli Lilly, a trained chemist, was one of pharmaceutical manufacturing and R&D pioneers in 1876. Switzerland, previously a centre for trade in textile and dyes, began to market their dyes as pharmaceuticals in the late nineteenth century after realising the antiseptic properties of their dyes. Soon it became a hub of homegrown pharmaceutical industries like Sandoz, CIBA-Geigy, and Roche (Walsh, 2020).

In the late nineteenth century, the pharmaceutical industry emerged as a subsidiary of the nascent chemical industry. European based chemical companies, majorly from Germany and Switzerland, such as Bayer, Hoechst, Ciba, and Sandoz, were the

pioneering pharmaceutical firms. They used their skills and knowledge in organic chemicals and dyestuffs to produce drugs. British and French companies were also part of these pioneering firm's groups. Europeans, mainly Germans, had the upper hand in drug discovery until World War I (Malerba & Orsenigo, 2015). In the early twentieth century, the pharmaceutical market was unregulated, and there was hardly any distinction between the 'pharmaceutical' and 'chemical' industries as is the case now (Walsh, 2020). "*These companies focused as much on cod liver oil, toothpaste, citric acid for soft drinks, and hair gel as on prescription medicines, as well as selling products like heroin on the over-the-counter market*" (Walsh, 2020). The national politics and conflicts, affected the development of this industry. After the world war, however, the US gained dominance. The beginning of the globalisation of industry was observed both before and after the world war (Walsh, 2020). Pharmaceutical research grew steadily after World War I due to solid funding from pharmaceutical companies, universities, and the government. Since World War II, the United States has become the epicentre of drug and pharmaceutical technology, business, and even pharmaceutical politics (Malerba & Orsenigo, 2015). The period between 1918 and 1939 was marked by two significant discoveries- insulin and penicillin (Walsh, 2020). The mass production of these drugs saved many lives during the war.

Until World War I, American pharmaceutical businesses specialised in two distinct ways. The pioneering group of companies concentrated mostly on manufacturing and marketing its existing patented and over-the-counter pharmaceuticals. Another group started focussing on research and development (R&D), producing prescription drugs, and selling them to chemists and doctors. Until World War II, the pharmaceutical business was not known for its extensive research and development. A few new medicines were introduced in the market, with the most significant developments occurring between 1938 and 1943 with the introduction of alkaloids, coal tar products, and sulfa drugs. On the other hand, some companies spent huge amount of money on promotion of medicines and got significant profit as a result (Malerba & Orsenigo, 2015).

The genesis of the contemporary pharmaceutical business – usually referred as "the Golden Age" – started after the 1940s as a result of multiple interconnected events and activities. Additionally, starting in the early post-war years, scientific medical

research started to play a significant part in the process of discovering and developing new drugs. Almost all developed-world governments started funding publicly funded health-related research. The rapid growth of research greatly expanded medical knowledge and offered companies several prospects for innovation. In search of potential therapeutic activity, thousands of chemicals were examined, with little prior information of what may be effective and why. A relatively small percentage of the compounds screened at random for drug discovery showed promise, making it somewhat of a lottery with limited chance of success. To maximise safety and efficacy properties, the discovered molecule was subsequently transformed into a viable medicine by protracted and difficult chemical synthesis procedures. This lengthy R&D process on a huge scale gave competitive advantages to large corporations (Malerba & Orsenigo, 2015). Thus, big pharma companies emerged after 1940s. The price fixing scheme in 1957 by NHS for increased R&D and the huge funding from US government around 100$ million by 1957 for drug development, the pharmaceutical industry grew wealthy with large portfolio of products (Walsh, 2020). Due to the increase in demand and particularly in the US due to patent protection, the discovery of new pharmaceuticals drugs became a very lucrative industry (Malerba & Orsenigo 2015).

3.5.3.2 Ethical Concerns

With the growing market the ethical conflict of selling drugs to patients and making money became apparent. This heralded an era of government regulations on medicines with parallel growth and development of pharmaceutical industries (Walsh, 2020). Following the Thalidomide disaster in 1961, the Food and Drug Administration (FDA) increased regulation and drug testing prior to granting licences. For new medications, the Kefauver-Harris Amendment to US Food and Drug Administration regulations in 1962 required proof of efficacy and disclosure of negative effects. In a similar vein, the 1964 Helsinki Declaration established guidelines for ethical clearance in clinical research, clearly separating the manufacture of pharmaceuticals for therapeutic purpose from other chemical production. As the barriers to entrance into the drug manufacturing sector were raised, the industry began to consolidate. Similarly, the internationalisation efforts that had begun prior to the war continued - Pfizer formed subsidiaries in nine new countries in 1951 alone (Walsh, 2020).

The post war boom in drug production took place in the backdrop of massive improvement in standard of living and technological breakthroughs. It took place from 1940s to early 1970s (Walsh, 2020). The demand of new drugs and patent protection led to the growth and development of the pharmaceutical industry in America and European countries. The combined contribution of population growth, better living standards and the enormous unmet medical needs were leading to sustained growth and development of the pharmaceutical industry. A significant, lucrative, and well-organized market for medications was also made possible by the expansion of health insurance in the US and the Welfare State in the majority of European nations (Malerba & Orsenigo 2015).

3.6 Patenting of Drugs and Medicines

Historically pharmaceutical industries have been provided with strong patent protection against imitation. The US and the UK are prominent outliers, but the majority of nations only permit process patents, not product patents. The US Patent Office's 1946 patenting of streptomycin, however, marked a significant turning point, overturning earlier rulings that had barred the patentability of antibiotics as naturally occurring chemicals. The pharmaceutical patent regime has been more stringent since then, despite continued conflicts and disputes. Additionally, restrictions governing generic versions of the original product made price competition and duplication more challenging. Before the WaxmanHatch Act was enacted in the US in 1984, generic versions of medications that had lost their patent protection required extensive human clinical trials before they could be marketed there. As a result, it might take years before a generic version was made available even after a significant patent had expired. In 1980, generics held only 2% of the US drug market. During this time, measures to improve the patent rules governing pharmaceuticals spread across the continent of Europe at varying speed . Product patents were first made available in France in 1960, Germany in 1968, Japan in 1976, Switzerland in 1977, Italy, the Netherlands, and Sweden in 1978, and Canada and Denmark in 1983. (Malerba & Orsenigo 2015).

As a result, the groundwork was established for the industry to evolve into a highly inventive, lucrative, and high-growth sector. Many businesses established sizable, formalised internal R&D programmes. Companies like Merck and Pfizer, who were

once significant suppliers of fine chemicals, entered the US medicinal industry using innovative business models. R&D to sales ratio increased from 3.7% in 1951 to 5.8% in the 1950s to around 10% in the 1960s, and then reached a high between 15 and 20% in the 1980s and afterwards (Malerba & Orsenigo, 2015).

3.7 Marketing

Following the 1990s, hundreds of novel chemical entities (NCEs) and numerous significant medication classes, including antibiotics, antidepressants, and diuretics, were found and made available. Accordingly, from 25 in the years 1940–1949 to 154 in the 1950s to 171 in the 1960s, and finally reaching 264 in the 1970s, the number of new molecular entities approved by the Food and Drug Administration (FDA) increased steadily. The industry started spending a lot of money on marketing and sales initiatives. While up until the 1930s, prescription medications were primarily sold and advertised to patients directly, later regulations changed the practice. The latter made for 32% of consumer spending in 1929. This share rose to 57% by 1949, and to 83% by 1969. As a result, pharmaceutical companies began to speak with prescribing physicians directly and developed sizable and sophisticated marketing operations. The two categories of businesses—the R&D-intensive core and the advertising-intensive segment—could be distinguished until the 1970s. After that, the two (distinct business groups) started to converge, mostly as a result of the latter's entry into the prescription market through mergers with the former. During this time, the pharmaceutical industries began to grow globally. The large weight of marketing and R&D expenses underlined the need to enter new markets in order to lower average costs. It was frequently important to be present in international markets in order to follow local regulations. The biggest, most R&D-intensive companies in Germany, Switzerland, and the United States moved firmly forward with their global expansion while simultaneously building networks of connections with local businesses through licence and commercialization partnerships. The industry saw strong rates of innovation, expansion, and profitability within this favourable environment. From the 1950s to the 1980s, growth rates were well above 10% on average. The industry was highly profitable. The stated rates of return after taxes ranged from 21 to 22%. Up until the 1980s, and even afterwards, the industry's economic and financial performance remained outstanding (Malerba & Orsenigo 2015).

The market structure of this sector has always been characterised by a group of big companies and a significant group of smaller ones. Despite the fierce competition and frequent changes in the leadership hierarchy inside this group of the first 10- to 20-largest enterprises worldwide, they have been relatively stable. The ‘oligopolistic group’ of companies comprised of early Swiss and German industries, and later, the American and British industries joined after World War II. Several of the top companies like Roche, Ciba, Hoechst, Merck, Pfizer, and Lilly, were founded before the research and development era of the industry. Rarely did innovative new drugs become available, but once they did, their market expansion was incredibly rapid (Malerba & Orsenigo 2015).

As a result, the distribution of returns on innovation, product market sizes, and the intra-firm distribution of sales across goods were all extremely skewed. A select few "blockbusters" dominated the product basket of all major industries. At the level of the specific therapeutic categories or submarkets, for example, cardiovascular, diuretics, tranquillizers, etc., this picture appears somewhat different. In fact, the biggest companies occupied dominant positions in specific submarkets. The CR4 index in some of them, such antiviral medicines, was more than 80% in 1995. Only two or three medicines accounted for more than 50% of the market sales in numerous other cases. However, even in submarkets, dominant positions are fictitious and subject to challenge. Similarly, entry of new players was not a notable phenomenon until the biotechnology revolution. (Malerba & Orsenigo 2015).

Over time there has been a fundamental change in the therapeutic classes in the markets. A few decades back it was antibiotics that dominated the markets (M.R., 2011). The R&D of the pharmaceutical companies started focusing on mental, heart and cardio vascular diseases. In other words, treatment of so called "lifestyle diseases became the focus of pharmaceutical companies. As a result, more and more antidepressants, diuretics, and anti-histamines found their place in the market. In the 1960s well-known tranquilisers such as valium and librium were introduced by Swiss companies that ushered in a new era of psychiatric treatment. The production of contraceptives pill in introduced in 1960 had a massive impact on society just as penicillin (pharmaphorum.com). It enabled sexual equality for the first time. Nowadays the therapeutic classes driving growth in the world markets are anti-

depressants, anti-psychotics, anti-diabetics, erectile dysfunction preparations, and anti-obesity preparations. Therefore, one important point to be noted here is that drugs for life style diseases are taking the centre stage of world drug production and the drugs for the treatment of so-called 'tropical diseases' are not the top priority in the world pharmaceutical market (M.R., 2011).

The 2010s have seen the development of innovative new classes of medicines, building on the greater understanding of the body since the genome was first sequenced at the end of the last century. This knowledge of genetics and the underlying cause of many diseases, including cancer, has resulted in powerful new drugs. In cancer, the pharma industry has begun producing immunotherapies, which do not act directly against the disease but instead enlist the immune system to fight against malignant tissues (Walsh, 2020). Modern biotechnology, which encompasses a wide range of technological innovations such as recombinant DNA technology," hybridoma technology," gene transfer, cell fission techniques, structural and functional genomics, protein design, molecular antibodies set out a new trend in therapeutic research and pharmaceutical market (M.R., 2011).

Analysts predict that the development of "personalised medicine" and pharmacogenomics will significantly alter the therapeutic industry in the future. Pharmacogenomics, which combines biochemistry and other conventional pharmaceutical sciences with annotated knowledge of genes, proteins, and single nucleotide polymorphisms, holds the promise that one day, individuals may be treated with medications that are specifically tailored to their needs and adapted to their unique genetic make-up. With genetic advancement pharmaceutical companies would be able to develop medications based on the and RNA proteins, enzymes, associated with genes and disorders. Pharmacogenomics' proponents contend that it will speed up drug discovery, enabling pharmaceutical companies to create treatments that are more precisely targeted to certain disorders. But it's still unclear whether pharmacogenomics offers all the advantages that have been claimed (M.R., 2011).

And when the world battled the new and devastating coronavirus epidemic in 2020, the pharmaceutical industry quickly developed dozens of viable vaccines (Walsh, 2020).

But there are obstacles: the new generation of medications is pricy and has stretched the financial capabilities of healthcare systems as well as the limits of science. A time when the world is still coming to terms with the magnitude of the threat posed by antimicrobial resistance, research into new antibiotics has stalled despite the industry's enormous successes in some areas. This is because these drugs do not generate the big pharma companies' desired revenues. The pharmaceutical business has a bright future, but as the century goes on, it will face significant problems in upholding public confidence and preventing millions of fatalities from antibiotic-resistant bacterial strains (Walsh, 2020).

3.8 History of Pharmaceutical Industries in India

The history of Indian pharmacy is mostly unknown. The hymns for Soma and those for plants can be found in the Rigveda texts. The Atharvaveda and some older versions of the Ramayana and Mahabharata both use the term Ayurveda (i.e., science of life). *Shusruta* was credited with inventing a surgical procedure that was revolutionary. Since *Charaka* and *Shusruta* were both pharmacists and medical doctors, they meticulously researched more than 1000 botanicals. His followers had made use of the Ayurveda for therapeutic purposes. Eventually, it expanded throughout Asia as Buddhism flourished in its development (Okuda & Natsume, 2010)

The British introduced the allopathic medical system during the 19th century, bringing medicine for their own purpose. This marked the start of India's pharmaceutical sector and pharmaceutical imports. Pharmaceutical items were primarily imported from Germany and the UK over the first ten years. Bengal Chemical and Pharmaceutical Works was established in 1901, marking the beginning of the production of the drug in an indiscriminate manner. There were some research institutions founded between 1904 and 1907. The use of chemicals to treat ailments was another important breakthrough during this time. The first World War sparked an increase in home pharmaceutical production. As a result, for the first time, quinine salt manufacturing, caffeine generation from tea waste, and the production of surgical dressings all rose (Chaganti, (2006).

The British in an effort to reduce the expenditure on drug imports, in 1750 established medicinal gardens to cultivate pharmacologically useful indigenous medicinal plants and studied their prophylaxis and treatment efficacy. "Some medically trained Orientalist translated the classical Ayurvedic and Unani texts. Europeans were awed by the medical accomplishments of Indians in earlier times." (Saini, 2016). This helped them learn a lot from the Indian pharmacopoeia (ibid). An orientalist, Sir William Jones, founded the *"Journal of Asiatic Researches"* in 1789 to engage in research in Indian medical system and medicinal plants (Saini, 2016).

Indian drug companies were created to reduce drug import prices from Britain. However, the Indian drugs had to undergo strict scientific scrutiny before they were accepted. The first pharmacy practise or profession in India dates back to Scotch M. Bathgate's establishing of a store in Kolkata in 1811. This was likely the start of Indian pharmacy practise (Hardas, 2012). New discoveries on plants, medicines and drugs were published in scientific journals and books. Pharmacopoeia of India was published in 1868. Western medical practitioners employed medications with a single Active Pharmaceutical Ingredient because industrial pharmaceutical production was done in Europe. This set them apart from the ancient Indian healers who employed whole herbs or minerals. The Vaidyas Like Gangadhar Ray and Gangaprasad Sen established Ayurvedic drug companies and sold and exported drugs to Europe (Saini, 2016). Ayurvedic drug manufacturing industries were established by M. M. Gananath (Anshu & Supe, 2016).

3.9 Western Medicine in Bihar

Health is a state subject and National health programs are implemented by the state. The state governments are in charge of health budget. The central government makes national health policy after taking inputs from the state. Hence it is important to understand the history of western medicine in the Bihar state.

Patna is an ancient city and a cite of great historical importance. It was a centre of learning and administrative capital since ancient period. It is said that Aryabhatta the great Indian mathematician and philosopher came to study astronomy in Nalanda university which was the epitome of knowledge and education during that time. It was the second administrative centre next to Calcutta during the time of British. One of

the oldest medical colleges in eastern India is Patna Medical college. The first is Calcutta Medical College. Let's go for time travel to understand the history of Patna Medical College.

"The second half of the nineteenth century was flooded with new knowledge and experiments in the history of medical education in Bengal Presidency" (Majumdar, 2018). Calcutta was its base for administration and control. One of the pioneering medical college- Calcutta medical college was known for its high standard of education. Patna was one of the peripheral cities of Bengal presidency. The spread of medical education to Patna from Calcutta is a noble example of how the socio-economic structural relationship spread spatially from centre to periphery. Although Patna erstwhile Patliputra, in ancient times was an important centre for learning. However, with the advent of the Mughals and the British it lost its glory and intellectual luminaries. With the establishment of British empire Calcutta became an important centre for trade and administrative control. However, with the expansion of the British territory, the need to preserve the health of the civilians and military soldiers arose. Health was an important issue for territorial expansion right from the beginning, for the British. Thus, with the territorial expansion the expansion of medical policies to the peripheral region was a trickle-down effect. Thus, establishment of Temple Medical School (TMS) in 1874 was the result of one such trickle-down effect. As a result, the Temple Medical School in Patna received the Calcutta Medical College's Military class. A team was established to do research and create a thorough curriculum for the vernacular classes. The Committee produced a recommendation in 1878, which was adopted by the Bengal Government. Practical knowledge, clinical surgery, medicine, and midwifery were all given a higher priority. In 1894, the government passed another set of restrictions by a resolution. The resolution's main provisions included: special restrictions on admission to schools in Patna for those who were not Bihar natives; all applicants for admission to a medical school possess at least rudimentary English proficiency; bonds requiring scholarship holders and free students to serve the government for a specific period of time if requested to do so; a stipend of Rs. 7 per month for each student. The trained candidates worked as sanitary inspectors, army medical service subordinates, hospital assistants, and independent village doctors. To serve the health needs of people more and more health workers were required and education of native doctors was necessary

to make western medicine, acceptable and accessible to the people. These people were cheaper to employ and were engaged in mass vaccination programmes (Majumdar, 2018).

“Initially it was decided to attach the medical school with Bankipore Dispensary which had 50 to 60 beds which would suffice to give chemical instructions to the students.” (Majumdar 2017). For the lecture the students were required to go to a separate distant college. There was shortage of dissection room and cold storage systems. This speaks volumes about the quality of education in Temple Medical School (TMS). Of course, the TMS had inferior quality of courses and syllabi, infrastructure, lodging, medical equipment, and faculty members than the Calcutta medical college. As a result, it is assumed that the students' academic standards would be lower than those of the institution. Initially the medical school was established to generate local assistants rather than skilled physicians (Majumdar, 2018).

As time went on, it became apparent that doctors were unable to control and contain diseases like malaria, stomach problems, high infant and maternal death rate, typhoid, and recurrent outbreaks of plague and cholera epidemic. Mazharul Haque while presiding over the fourth session of Bihar Provincial Conference in 1911 said that Temple School of Medicine and Bihar School of Engineering were still schools and had not been raised to the status of College (Pandey, 1975). Babu Saligram Singh in his speech on March 31, 1905, demanded for TMS to be elevated to the status of a college (Majumdar, 2018). Public opinions were being created in favour of technical education by educated and enlightened persons in Bihar.

The Temple Medical School was under the jurisdiction of the health department of Bihar in 1912. It had 130 students in 1918 as compared to 118 students in 1912. At that time, there was no chance of building a medical college in Bihar. The students of Temple school of medicine could not go to Calcutta Medical College for higher training due to cost and distance involved. The students of temple school of medicine did not have any hands-on training about the diseases of women as no women would come to the male trainees. The Bihar Engineering College and Temple School of medicine together had one shared laboratory. The Lack of Fund was a major problem because of which the medical school could not be upgraded to the level of college. (Calcutta Medical College was the only college of medicine in Bengal presidency.

Bihar, Orissa was included in Bengal presidency till 1912). There was dire need for upgrading the training standard of the physicians of the Temple School of Medicine in Patna. Even after the partition of Bengal, unfortunately the national political and revolutionary movement and World War I and II forced the government to postpone the plans for upgradation. In 1912 the separation of Bihar and Orissa presidency (with Patna as its capital) from Bengal further led to lack of fund for a separate medical college in Patna. A team of 18 students from Bihar were sent to Calcutta Medical college for the training who would come back and set up the medical school, however World War II once again led to the decline of the prospect of a well-equipped medical college in Patna (Pandey, 1975).

The funds given by central government to district board of Bihar and Orissa together was not enough to deal with the medical problems, especially leprosy which was a scourge at that time in 1932-33. There were two problems –first the lack of financial and second the trained doctors of sub-assistant class in district boards to deal with the health problems of that time. The two medical school- Temple School of Medicine in Patna and Orissa Medical School at Cuttack trained very less doctors in comparison to the requirement of the time (Rout, p274). Women doctors were also not available (Rout, 1988). During this time, there were just three Bihari Hindu doctors (Pandey, 1975).

With the help of Babu Ganesh Dutt Singh, a minister of Local Self Government who took special interest in highlighting to the notice of the central government the need of establishing a medical college in Patna. Sir Syed Sultan Ahmad, the then Vice Chancellor of Patna University also utilised his contacts with the British Government. Maharaja of Darbhanga also in 1920 donated generously a fund of Rs 5 lakh for the proposed medical college. To raise the fund "Prince of Wales Medical Fund" was established in which people started contributing generously. When Prince of Wales visited Patna in 1921, he eventually lay the cornerstone for the proposed medical college. With 30 students, Sir Henry Wheeler, the previous governor of Bihar, inaugurated the medical institution. The school's first Principal was Dr. H.R. Dutton I.M.S.[14]. As a result, Prince of Wales Medical College was established in 1925 to honour the Prince of Wales' visit to Patna. Patna Medical College is the new name of

[14] (http://www.pmch.in/history.htm (accessed on 23.03.2020)

this institution (PMC). The ‘Temple School of Medicine’ was relocated to Darbhanga (Majumdar 2017).

There were other medical hospitals and schools established in Bihar in the early twentieth century. An old lunatic’s asylum was there in Patna in 1908 in the compound of which Patna training College was built (Pandey, 1975). Mental Hospital was the first mental hospital in India which was established in Bihar in 1940. (Now it is in Ranchi in Jharkhand. Jharkhand was divided from Bihar in year 2000).

3.10 Discussion and Conclusion

Medicine provides a direct line of communication with the Indian people's social, cultural, and material existence. The nature and form of western medicine, as well as Indian traditional remedies in India, were shaped through cross-cultural contacts between the British and Indians, who shaped the health of both the British and Indians. The fusion of eastern and western medical knowledge affected and modified each other. With the expansion of knowledge and technological breakthroughs, Western medicine underwent epistemological and paradigmatic shifts. In indigenous medical systems, such shifts were not visible.

It is observed that before the Christian era Indian science and technology in various fields of science was very much advanced and it was a source of learning for the western world who built on it further. However, such advancements and growth were not able to sustain themselves due to changing political power in the Indian landscape. Medicine was also not an exception and its nature and form changed with changing political allies and economic interests. In the ancient and medieval times there was sharing and exchange of knowledge between various systems of medicine in India. Both the Ayurveda and Unani systems co-existed in a symbiotic relationship with peaceful mutual exchange and respect for each other during Mughal period. With the arrival of the British East India company, in the beginning the company surgeons who were brought to serve the British army and traders were recipient of the Indian indigenous knowledge. The social and professional standing of European doctors were not high in comparison to their Indian counterparts and they were looked down upon even by European civil and military elites. The western surgeons collected the local wealth of knowledge to upgrade their status both in the eyes of the army and the

local people. They practiced among the rich and charged heavy fee and thereby further increasing their power. Thus, specialists were a product of social situation rather than the rationality of medical science (Qadeer & Nayar, 2005).

The introduction of western medicine in India was integral to the socio-political dynamics of that time. With the expansion of the British army, the Indian soldiers recruited were not ready to accept the western medicine, so they appointed practitioners who compounded their medicines with the surgeons. The Indians recruited in IMS were put in subordinate positions. It was a strategy of British to uphold the supremacy of western medicine to keep a control on the local population. Thus, the western medicine played an important role in hegemonizing the power of colonialism.

Later universal coverage became a necessity as the health of the local population was necessary to keep the armies and white civilians healthy. Among the locals it was mostly local elites who had access to western medicine while the lower class depended on indigenous medicines. The Indian royals and local elites were open to western medicine and they patronised it. The institutionalisation of western medicine took place with the establishment of Indian Medical Services (IMS). Thus, while the 19th Century represents the evolution of the sanitary movement, the strategy of welfare and the growth of service infrastructure for universal coverage in Britain, the Indian Medical service (IMS) that dominated the medical scene, all through remained centred around the needs of the army. Welfare strategies if any, were restricted to the barracks of the armed forces and the Sanitary Commission that was set up remained subservient to the Director General IMS (Qadeer & Nayar 2005).

In nineteenth century serving in India for European doctors was not a very lucrative option due to changing social, economic and political scenarios. Native medical doctors were required to serve in Indian Medical Services for various socio-political reasons. The establishment of Native medical institutions was not only the need of the hour, the British used it to train more of the native practitioners in western medicine who would not only serve them but would also accept the supremacy of western medicine over indigenous medicines. It was a soft approach of the British to acclaim the superiority of western medicine over the indigenous medicine as medical teaching in vernacular language and a bridge course of western and indigenous medicines

attracted more of the native practitioners. However, this relation of peaceful co-existence ended with further advancement of western medicine in Europe during nineteenth century. With Bentick's and Macaulay's educational reforms during 1830s and institutionalization of English as an official language of India, the gulf between both the systems of medicines widened. The British campaigned against the indigenous medicines and established the supremacy of western medicine. The oriental knowledge was denunciated as unscientific and irrational. Thus, with state's support and power western medicine achieved the status of official medicine and it was used as a tool for social control. The relationship between the two systems of medicines moved from acceptance and appreciation to scientific skepticism and rejection of indigenous medicines.

From the nineteenth century onwards, the western medicine traversed great heights and advanced with the progress and discoveries in other fields of science. The period saw a surge of drug discovery, small pox vaccination and a new understanding of disease aetiology was developed. There was paradigm shift in the principles of western medicine from humoral theory to germ theory of diseases. Various breakthroughs in western medicine both in terms of drugs their treatment made it far more advanced than any system of medicine. The medical profession, drug manufacturing and pharmacy were established as separate branches of western medicine. Simultaneously in India it spread its roots and established itself as a scientific and well-advanced medicine in comparison to the indigenous medicines. The Patrons of the indigenous medicine soon lost their power to British and many of them started adopting western medical system and started promoting it.

The Public health movement of nineteenth century and the reformist ideas of Bismarck and Chadwick were diluted gradually and the idea of social basis of disease and welfare strategies for it, was replaced by notions of practice of family medicine and community-based medicine. In the Indian colonies Sanitary commissions remained subservient to IMS although it was proved that most of the diseases required public health approach (Qadeer & Nayar 2005).

By the end of the 19th century, major cities and towns had a sizable Western medical presence. Due to the entire loss of official support and the deterioration in their social status, hakims and vaidyas felt intimidated and abandoned. To remain relevant, some

began to doubt their own system and embraced western medicine. Others vigorously defended and promoted their systems in order to stand up for them. They initiated a campaign and established training facilities for traditional medicines. They started standardising and professionalising their medicine by taking exams after training and fixing consultation fees etc. Some started mixed practice. The Indian ruling class who was the main patron of indigenous medicines declined and with them the high remuneration and prestige of the indigenous physicians also declined. Thus, the patrons of indigenous medicines found it difficult to sustain and uplift their culture and tradition.

Thus, western medicine was introduced in India to under British colonialism was designed more to ensure the health of the Europeans and the indigenous labour force that was crucial to the process of capital accumulation than to protect the population as a whole.

Health measures taken by British had little influence on mortality and morbidity of Indian population, but they did establish a framework of personnel, ideas and institutions. Therefore, even though modern medical services had been beneficial, the mass of Indian population did not benefit. Preventive campaigns such as vaccination and plague control which were never available to the general population.

The colonial medical past's institutional, philosophical, and epidemiological legacies continued to shape and restrict post-colonial discussions and policies on public health (Kumar & Kishore, 2020). Post-independence Bhore committee (1946) completely adopted the western system of medicine and institutional structures created by British. Though the committee report looked like it had great health plan for Independent India, it suffered from practical and implementational flaws. As they removed the licentiates who were the main work force in rural areas. It was a known fact at that time as well that doctors who belonged to the elite class were not comfortable and ready to serve in the villages. Lack of Health budget further added on to the woes of the flawed policy. Bhore committee completely rejected the indigenous medicines as unscientific on whom about eighty percent of population depended. This was a clear showcase of political economy of health on which India started its developmental journey at the dawn of its independence.

The holistic health approach adopted by Bhore committee was further relegated in the past with the adoption of maternal and child health programs. By 1965 the family planning programs gained importance as it was thought that by controlling the population the socio-economic and health conditions of Indian population could be improved. In spite of the ardent recommendations of several health committees India was still beleaguered with several public health problems. The imported and ineffective health-care paradigm has the disadvantages of having top-down centralised approach, and is very expensive (Shah, 1984; Kumar and Kishore, 2016). NC Saxena says that bureaucracy has failed to design health programmes to large section of population and failed to decrease the gap of inequality through their various schemes and policies (Kumar & Kishore, 2020)

Amrith (2009) argues that Post Independence the Indian political elite like the British was less concerned with the issues of public health of the masses as they had easy access to the high-quality, urban curative health services. They easily gave in to the demands of international pressures as is seen in the adoption of MCH and RCH and population control programs. The provision of safe drinking water, improvement of environmental sanitation and health education, provision of employment opportunities, and other long-term measures to eliminate diseases were relegated to the background, and progress in industrial development did not trickle down to the underprivileged and the poor. The role of social, political and economic factors in the field of health highlighted by scholars like Siegerist (1941), Dubos (1952) and later Mc Keown (1972) in the 20th century was never taken into account (Quadeer & Nayar, 2005). The international organisations in the form of providing aid and support, controlled India's health policies and directed it around population control and reproductive health to retain their economic market and control over it. They promoted privatisation and liberalisation in the health sector as well. The Rockefeller Foundation, WHO, UNICEF, and other international organisations provided the required chemicals and vaccinations for the national health programmes (Duggal, 2005b). Financial support was accompanied by political and ideological influence. The overall policy framework, programme design, and budgetary obligations, among other things, were decided by experts from numerous international organisations (Duggal, 2005b; Qadeer & Nayar, 2005).

The growth of private sector in health care has further weakened the government health infrastructure and institutions. It has focussed more on curative aspect of health and has siphoned of more good doctors from government hospitals. Preventive and promotional services are nearly entirely provided by the State sector, while the private sector provides the majority of the nation's curative health care services (to the tune of two-thirds) (Duggal, 2005b). They dictate and dominate India's health planning and policies in both covert and overt ways. Consequently, at grassroot level the direct impact of this can be seen in the form of out-of-pocket (OOP) expenditures of people which is pushing substantial number of people below poverty line every year. The private providers have become first point of contact for diseases which are government priorities and for which government is spending heavily. The government facilities have failed to attract poor due to a lot of accessibility, affordability and quality issues. The multinational companies have further promoted privatisation of health sector for their own benefit.

Through significant expenditures in the capital goods industry, infrastructure, and financial services, the Indian state was heavily involved in assisting and supporting the process of capital accumulation in the private sector in the early years following independence. Health and education were considered to be low priority social sectors. The phrase "industrial growth" was used. From the first five-year plan through the ninth five-year plan, economic services received more than four-fifths of the resources, while social sectors including health, education, water supply, and housing only received one-fifth (Duggal, 2005). The basic reasons of ill health which were inadequate nutrition, clothing, and housing, and the lack of a proper environment were ignored (Duggal, 2005).

The public opinion created by British campaign for western scientific education and medicine, successfully created favouritism for their medicine. Thus, Bhore committee completely ignored the Usman report on indigenous medicines and termed it as unscientific. The adoption of western health system for managing the public health problems of India further marginalised the indigenous systems and the poor people. This also showed that the Indian political elites adopted a health system that was more suitable for their needs and requirement rather than the needs of the masses that largely depended on indigenous systems. The post-independence policies of various

health committees and health policies were largely based on curative approach, could not provide services for the masses.

Western medicine is a gift of colonial hegemony in India which still continues to have hegemonic impact on the Indian health system. Rather than understanding best practices of all the health systems –like local cultural healing practices, Ayurveda, Unani, siddha, and homeopathy and western medicine and incorporating them into the Indian health system best suiting the culture, topography and diseases of the vast Indian subcontinent, the government of India has blindly adopted the framework of the western medical system. This is not to mean that it is bad but definitely the other systems of healing are equally good incorporating them into the health system would have given better results.

The sustenance and further progress of indigenous system of medicine has been the result of socio-economic and political factors. The Vaidyas, Hakims had always tried to find out ways to institutionalise and further consolidate the indigenous profession. The indigenous pharmaceutical companies that opened up during colonial time, continue to provide services in a much better form. The support received from three members of Bhore committee proved very important for its further organisation and development. The sporadic support received every now and then always worked in favour of the sustenance of indigenous medicines. Efforts to regulate the research, practise, and teaching in traditional medicines often suffered from lack of funds and political will to do so. The set-up of Central Council of Indian Medicines, post 1970s paved a long way for institutionalisation of Ayurvedic and Unani practices. The meagre health budget allocation of developing countries and the need of cheap health care resource by large mass of rural population made WHO adopt indigenous medicines as an alternate system of practice especially in developing countries in 2002. This similar situation forced the political elites to adopt and promote indigenous medicines in the health planning and policies. Thus, Department of AYUSH was formed in 2003 and it further elevated to Ministry of AYUSH in 2014. The integration of AYUSH has been done at various levels in the health care system. However, the practitioners do not have equivalent status to that of the western medical doctors. The Ayush practitioners are often hired on contractual basis and they The two systems of medicine exist separately in the national health department and the patients

are not treated holistically (Ruhil, 2015). Ayush drugs are often in short supply in government hospitals. There should be some integration of AYUSH courses in the MBBS course to upgrade the knowledge of allopathic students and also to sensitise them towards AYUSH system of medicine (Ruhil, 2015).

The history of pharmaceutical industries is traced back to the trade of various herbs and chemicals which were used for treatment. The difference between a doctor and a chemist existed right from the inception and evolution of the concept. As in the Roman era the better educated who belonged to the upper class used to become physicians and were highy revered. The medicine gatherers were known as apothecary. Gradually the medicines were stored in a room known as 'apothecary' meaning drug store. Around 850 A.D. these apothecaries were owned by educated men of high class. In around thirteenth century these medicine shops and herbalists were inspected by government officers in Persia and in middle eastern countries. The king of Germany Fredrick II issued a treaty which stated that physicians and apothecaries could not enter into business relationship. These apothecaries or medicine sellers used to come under the trader's association of England. In seventeenth century, the King James of England established a separate association of apothecaries which was later established as pharmaceutical society in 1841.

The pharmaceutical industry first emerged as a subsidiary of nascent chemical industries in late nineteenth century. The first pharmaceutical manufacturing and their patenting began in 1842, with Beecham company. The patenting was done to sustain the profitability of medicines to one company. The pharmaceutical industries grew with rapid development and advancement of modern western medicine. Allopathic therapy or western medicine began to reach new heights in twentieth century with the discovery of antibiotic in 1928 by Alexander Fleming. A new era of antibiotic therapy began and with the development of streptomycin the treatment of contagious diseases like TB began. The biomedical health services had increasingly commercialized the pharmaceutical industries.

Till early twentieth century the pharmaceutical market was unregulated and there was hardly any distinction between pharmaceutical and chemical industries. During 1876 around the time of American civil war, Eli Lilly company started first research and development (R&D) in their manufacturing firm. Before this the chemical industries

used to conduct trial and error kind of test on all sorts of chemical to find its potential for treatment.

In the nineteenth century the European companies especially Germans and Swiss dominated the pharmaceutical market and later after the world war US gained dominance. The beginning of globalization of pharmaceutical companies was observed before and after the world war. The discovery of insulin and penicillin between 1918-1939 and their mass production by pharmaceutical companies saved many lives during the war. Earlier the pharmaceutical companies were engaged in production and marketing of their existing patented and over the counter (OTC) drugs. Later after the second world war they started engaging more in R&D. For R&D they required huge amount of money for which they had to increase their profit margin. They engaged into pharmaceutical promotion marketing to earn huge profit. The discovery of new drugs on the other hand provided huge profits due to patent protection especially in the US market. With the growing market the ethical conflict of selling drugs to the patients became apparent. This led to the formation of government regulation bodies like Food Drug Administration (FDA).

The post war boom in drug production took place in a broader landscape of high standard of living. The simultaneous population growth, vastness of unmet needs and emergence of lifestyle diseases due to improvement in living standard are some of the contributary factor for sustained growth and development of industry.

Post 1960s the industries began to invest heavily in sales and marketing, as well as in R&D. until 1930s drugs were sold directly to patients. With the introduction of prescription drugs, the pharmaceutical companies started to contact the doctor instead. Thus, the physicians and apothecaries who were earlier barred from entering into business relationship in the thirteenth century, started entering into amicable business relationship. The changing economic scenario and rise of capitalism led to state's consent in such kind of business model with some regulation. In 1929 the prescription drugs accounted for 32% of consumer expenditure which increased to 57% in 1949 and 83% in 1969 (Malerba & Orsenigo, 2015). Thus, the pharmaceutical companies developed vast and sophisticated market forces for itself. Post 1970s the two different group of companies- the R&D intensive and the advertising intensive began to converge through merger and acquisition. With saturation of the US and European market the pharmaceutical companies started becoming international and global. They

had to comply with local regulations and thus they established networks with local firms. The 'oligopolistic core companies' (10-20 largest firms around the world) come from Swiss, German and after World War II from US and UK.

Now after antibiotic revolution, the firms are now focusing on lifestyle diseases. With advancement in biotechnology, it is anticipated that the future market will be of personalized medicines. This trend would be then similar to the customized and personalized treatment administered by indigenous medicines. Indigenous medicines on the other hand are moving away from personalized medicines to generalized medicines. It is observed that research into antibiotics has stagnated due to non-profit of the new drug discovered. A big crisis of multi-drug-resistant (MDR) bacterial diseases is anticipated in the world in future. It is a matter of grave concern as the absence of new antibiotics to treat the MDR would not be available.

The delegitimization of peoples prevailing knowledge resources and medicalization of health led to a lack of cultural confidence to deal with one's own health, a greater dependency on medical expert – the doctor and thereby gave to the later absolute powers with freedom to abuse them for personal and professional gains. The powers and their abuse then trickled down to other health care providers (Priya & Godhajkar, 2018).

The establishment of Patna medical college in Bihar shows how western medicine has gained prominence in the state. The British campaign for western scientific education was successful to create a public opinion among Indian masses which further created public opinion among its own masses for it. It needs to be mentioned here that people of Bihar forgot their own scientific progress that had already been made in ancient times by Nalanda University. Political dominance of the Mughals and the British made the people forgot their own cultural and scientific endeavour. With the political and economic dominance of the British in the region the scientific progress of the Nalanda University which was the Vanguard of scientific education in ancient times was long forgotten. This shows how state control and power dictate the dominance of medical practice in a region. The practice of Ayurveda and Unani in the state of Bihar was limited to the lower class and poor population. This also doesn't mean that western scientific education and western medical practice was bad for the people but its benefits are limited to the few elites of middle class of the state. The poor still depend on the pluralistic health practice to a great extent.

CHAPTER 4

MEDICINE, MARKET AND MEDICAL REPRESENTATIVES

The sale of medicines or pharmaceutical drugs is in dialectical relation with the care giving principle of 'Medicine'[15] as a whole. For this very reason during King Hammurabi's rein diagnosis and treatment were separated from the preparation of medicine. The apothecaries or drugs sellers were separated from the profession of the physicians or doctors so that the physician can treat the patient without additional pecuniary benefit of selling his medicine. treatment was most often free or minimally charged out of philanthropic concern. However, in the later stages the profession of physicians also entered into the market relation and diagnosis and treatment were also charged. Hence the benevolent and philanthropic care-giving principle of medicine was lost and diagnosis, treatment and medicine all aligned in a market economy to charge from the patients or care receiver. The dialectics of sale of medicine for profit in a capitalist market and the health care as a human right of an individual or a social group is a subject of great concern for sociologist or anthropologists of medicine. A number of studies has critically assessed the impact of allowing the market forces to dictate the shape of health care delivery in US (Rylko-Bauer & Farmer, 2002; Kelman, 1971). There is a huge gap and inequality present in such system. However, such studies are deficient in developing countries or states. Current debates on rising health care and drug costs sparks off against the backdrop of unchallenged and expanding for-profit medicine market. It's also critical to pay more attention to the growing effect of market ideology and corporate structures on medicine and health-care delivery (Rylko-Bauer & Farmer, 2002).

Works of Baer et al. (1997), Navarro (1976,2002), Salmon (1990), and Waitzkin (2000) (all as cited in Rylko-Bauer & Farmer, 2002) critique the market-based models of health care delivery within a political economy perspective. We are aware of the lived experiences of people who have been at the receiving end of inequalities of access and high cost of care. In India too, western medicine dominated market ideology and corporate structures are shaping the health care delivery and costs. We have seen that in Bihar socio-economic structural constraints continue to shape and

[15] Depending on the context, 'Medicine' here is used for the pharmaceutical drugs as well as systems of medicine like biomedicine or indigenous system of medicines.

sustain the health inequalities and increase health care costs. On top of this the capitalist orientation of western medicine is escalating this health inequalities and cost.

Brett et al. (2003) examined the physician's perspective on gifts, sponsorship and prescription pattern and found that gifts are moderate to very problematic. The young trainee physicians at the beginning of their career were more comfortable and happier with the culture of gifts and sponsorships while the senior resident and faculty physicians found the recreational gift more problematic than educational gift.

Geest et al. (1996) give a very interesting analogy and definition of medicines or pharmaceuticals- "Pharmaceuticals constitute a perfect opportunity for the study of the relation between symbols and political economy. On one hand, they are a part of the international flow of capital and commerce. On the other, they are symbols of hope and healing and of the promise of advanced technology. They are more thoroughly incorporated than blue jeans and popular music, and they are more desperately sought than Coca-Cola and videos. They allow individuals and peripheral communities to exercise more autonomy in health care but also create dependence on distant markets".

In their review of anthropological studies on pharmaceuticals, Geest et al. (1996) identify a biographical life of pharmaceuticals in which they go through a'social life' in each phase of their transaction, starting with their manufacturing in industries, then marketing to wholesalers or retailers such as clinics and hospitals, chemists or pharmacists, and medical practitioners, and finally to end users or patients, either by prescription or direct sale. Each stage of life is defined by its own set of circumstances and actors. Scientists and businesspeople working for pharmaceutical businesses are the key social players during the production and marketing phases. In the prescription phase, health professionals and their patients are primarily involved in the context of a medical practise (Geest et al., 1996). They organised their assessment of the literature using Appadurai's concept of the social life of things and Kopytoff's biographical framework. Pharmaceuticals have considerably more meaningful lives and "deaths" as commodities than their shelf lives and expiration dates (Geest et al., 1996). Pharmaceuticals are seen by medical professionals as indispensable in their interactions with the sick. Pharmaceuticals are seen as commodities by pharmacists

and other salespeople, whereas patients and their families want medications to solve their issues. A "biography" of drugs is, of course, a metaphor. People give these chemicals a history by creating, trading, prescribing, buying, and consuming them (Geest et al., 1996).

On the whole biography of pharmaceuticals, the role played by the medical representatives to increase their sale is looked at by very few anthropologists and that too a holistic analysis is lacking. In this chapter this very missing aspect has been looked at in detail through an ethnographic study in Bihar.

The present chapter basically focuses on two major issues – (a) it tries to explore the factors influencing doctor's prescriptive behaviour; and (b) understand how pharmaceutical marketing influences prescription and their patients. In this chapter the researcher explores how the pharmaceutical companies control the market at micro-level through their medical representatives and how doctors are controlled by them and the patients are oblivious part of the system. An attempt was made to capture the western medical practices and pharmaceutical companies marketing strategies in the study site of Patna and Saran district. In this chapter the pharmaceutical journey in socio-economic, political and cultural context is analysed from the time it reaches the chemists, in the local market setting and from there to how it reaches to the hands of the end consumer i.e. the patient. The chapter further explores how the medicines as a commodity assume their biography, and how they define other social relationships in the local market. The promotion strategies of the pharmaceutical industries is understood through ethnographic observation and unstructured ethnographic interview of their medical representatives, pharmacists and western medical doctors and quacks. The impact of the global and local pharmaceutical industry on the western medical practice in the state of Bihar is explored in Patna and Saran districts. An attempt was made to understand the marketing efforts of the pharmaceutical companies at the grassroots by interacting and interviewing the medical representatives, doctors, quacks, and patients. The themes which emerged from the empirical evidences gathered from the field are discussed in the following sections.

4.1 Sales and Marketing in Pharmaceutical Companies

A pharmaceutical company is not only an important and influential part of a country's economy but its products are also actively sought to achieve good health by the people. A pharmaceutical company is dependent on marketing of its drugs to achieve more profit which they ought to utilise in research and innovation to bring out new drugs. The pharmaceutical companies spend more on marketing of their products than on research and development (Manchanda and Honka, 2005; Angell, 2004, as cited in Applbaum, 2006). According to Applbaum (2006) these companies sell their products through 'pull' or 'demand stimulation strategies' and increased disease awareness by designing the medical almanacs.

Pharmaceutical industries set aside a large amount of money each year to market their medicines. This is done in two ways- 1) Direct-to-consumer advertising and 2) ensuring constant sale through prescription by the doctors and the pharmacists.

Direct-to-consumer advertising receives a portion of this budget, with national television and magazines being the preferred media outlets for pharmaceutical companies. Another portion is dedicated to prescription generation by physicians through various means like - continuous medical education initiatives such as symposia, direct monetary incentives, travel funds, and research grants for physicians and pharmacists (Hajjar et al., 2017). To the physicians the company sell their products through their sales representatives and in India they are known as medical representatives.

MR4 explained about the department or divisions of a pharmaceutical company. He said –"*In a good pharma company there are four departments- 1) HR department 2) Marketing department 3) Strategic department 4) Medical department. The Marketing department, Strategic department and Medical department together work for increasing the sales of drugs. The HR department takes care of salary structure, job profile of all employees, recruitment, increment, transfer, punishment. This department is not there in a propaganda company. The strategic and marketing department takes care of different marketing strategies, gifts, schemes, bonuses, incentives etc. The medical department is concerned with giving information, training*

related to efficacy of the drugs and their use". (The details of the propaganda company is given in later section in this chapter.)

Hence, we understand that for marketing of drugs, the marketing wing of a pharmaceutical company have four departments as illustrated by MR4. The entire focus of all these departments is on sales and marketing of the company's drugs. The HR department is concerned with the recruitment, training, salary, incentives and monitoring of medical representatives' work. The other three departments i.e., Marketing, Strategic and Medical work together to decide how the product of a particular division needs to be marketed. They basically help to facilitate the medical representatives. Therefore, we understand that for the sale of the drugs or medicines, an army of people work in the background to assist the medical representatives. With all the marketing effort the pharmaceutical company create a strong pull factor from the physicians. Pull factor here means that the physicians create demand for drugs by prescribing them.

MR4 further said that, *within the marketing department of a company there are different drug divisions like cardiac division, diabetic division, gynae division, etc. Medical representatives are appointed for each division to sell the drugs or medicines of the particular division. The Medical Representatives of a particular division have to generate a greater number of prescriptions for the various drugs present in that division, to increase their sale*. This is also understood from MR2.

MR2: *I am in Cardiac and Diabetes division. I have total of 15 products, like Isosorbide-5-Mononitrate 10mg and 5 MONO 20mg, Attor (10mg), Biopril, Clopod, Clopod-A*[16]*. If my division has sales target of Rs 2 lakh/month then I have to generate prescription and Over the Counter (OTC) of two lakh/month out of the 15 products.*

Apart from the above two MRs, the interaction with various other MRs showed that the pharmaceuticals are grouped in various divisions of the company. The MRs did not know much about the rationale behind the grouping of the drugs in a division, as it

[16] *(for the researcher it was difficult to understand the name of the medicines as told by the MR and write quickly in her field diary, so she google out those names during transcription process to find out the exact names of the medicines told by the MRs)*

was decided by the marketing division. The grouping is mostly done on the therapeutic value of the drugs, as it seemed to them.

MR3 working in an international pharmaceutical company whom the researcher met in Patel Nagar in 2008, boasted of his company's profit as:

...Company X[17] *has annual turnover of 2200 crore in India. From the entire Bihar the company earns 26 crore per annum. In Patna it has a sale of 6 crore annually and from Chapra it has sale of 36 lakh per annum. He informed that Company X is a brand leader in spasmodic brands. Spasmodic drugs are used as painkillers and used in migraine and headache. Since last two years the company is number one in multivitamins.*

As understood from Manchanda and Honka (2005), Hajjar et al. (2017), and Grouse (2014), the pharmaceutical industries spend heavily on its sales and marketing forces and thus earn huge profits in return. The above company X earns huge profits in the researcher's study area i.e., Patna and Saran districts. (Chapra is the Head Quater of Saran district.) MR5 working in a leading Indian pharmaceutical company Y during telephonic interview[18] in 2020 said, "*Bihar,U.P., West Bengal, Orissa belt aur north east belt mein India ki sabhi companies bahut profit kamati hai. Ye sara area business point of view se bahut important hai. Ye hamein training mein bakayada map ke saath bataya jata hai. Volume wise sale yahan jyada hota hai". (MR5 meant that -in Bihar,UP, West Bengal belt and north east belt, all the pharmaceutical companies earn huge profit. All these areas are important from business point of view. This is told to them along with showing of map of these regions in their training given by their respective companies. Volume wise sale is more over here).* He further explained the reason behind high sale in volume in these regions- "*Yahan patient jyada hai aur awareness kam hai. Bimari jyada hai, doctors pe dependency jyada hai. Yahan ke log pareshani barh jane ke baad achche doctor ke paas jaate hain. Usse pehle jhola chaap ya chemist ke paas jate hain*. He meant that – (*Here patients are more and awareness is less. Disease is more and dependency on doctors is more. People here*

[17] Note- the names of the companies are also coded along with the names of the respondents to ensure complete anonymity to them. The researcher is thankful to her respondents to speak without any fear and restraints. As given in chapter 2, MRs are coded as -Mr1, MR2, MR3……Doctors are coded as- Dr1, Dr2,Dr3…..Quacks are coded as Q1, Q2,Q3… and People/Patients are coded as P1,P3,P3….

[18] The researcher took telephonic interview at it was lockdown due to Covid. She took fresh interview to understand the change in the market since the time she collected her first data.

visit the doctor only when their distress increases (due to disease aggravation and health deterioration). Before that people visit jhola chaap (quacks) or chemists).

Thus, we see that Bihar being eighth among the economically empowered action group of states provides a very fertile ground for reaping profits for the pharmaceutical companies. The socio-economic backwardness of people like illiteracy, poverty, lack of jobs is leading to ill health which in turn is exploited by pharmaceutical companies to gain more profits. MR5 says that companies earn more by selling in volumes i.e., by selling a greater number of drugs. This trend of earning profit by selling in volumes in low-income places is a good business model explained by economists like Simanis (2012). The sale of pharmaceutical drug in volume is likely to increase in Bihar due to high disease burden, high population and high population density of Bihar which is also being reflected in the training of medical representatives by the pharmaceutical companies (as informed by the medical representatives).

Therefore, as Geest et al. (1996) suggests- pharmaceuticals or medicines are not just pills in the hands of the patients that brings good health for them but a very powerful tool that brings profits for the pharmaceutical industries. Hence an attempt was made to understand how a drug travel after being manufactured and packed in the industry.

4.2 Drug Supply Chain

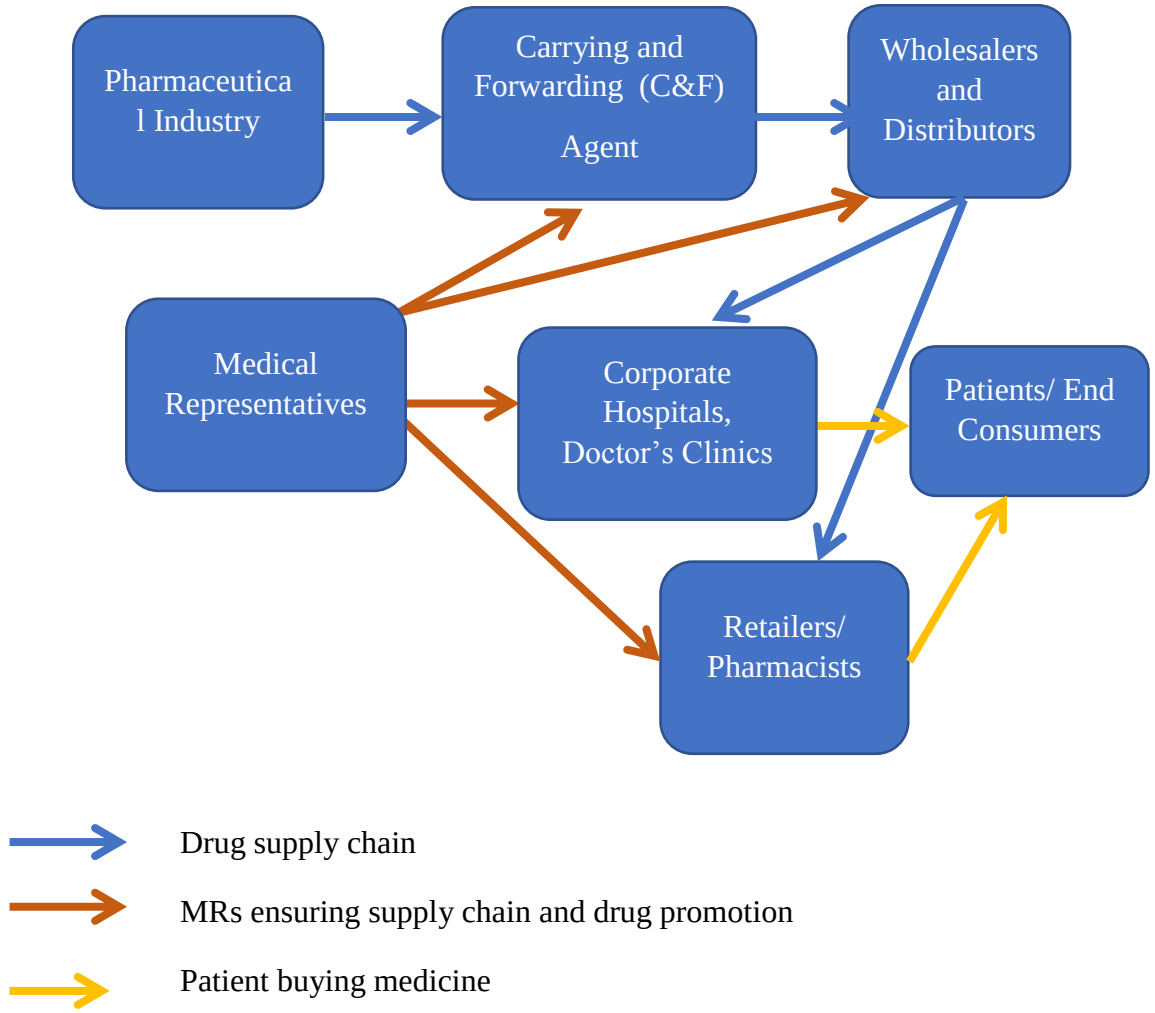
The pharmaceutical supply chain refers to the process of producing and delivering prescription medications to patients. However, the supply chain network is actually quite complicated, necessitating a series of processes to ensure that pharmaceuticals are available and accessible to patients (Farooqui, 2021). The pharmaceutical supply chain is intricate and sophisticated, which ensures that the correct drug reaches the right individuals at the right time and in the right condition to cure disease and suffering. In most states, pharmaceutical corporations nominate one corporate depot or clearing and forwarding (C&F) agent, as well as authorised stockists in each district. Retail pharmacies purchase drugs from approved stockists on a daily or weekly basis, depending on demand. Patients go to pharmacies to purchase medications that have been prescribed by a doctor or advertised in the newspaper. Any pharmaceutical company's end customer is the patient who is also the consumer

of its products, and direct customer is the doctor. Companies need more and more trained medical representatives to create good rapport with their direct customers (doctor) and promote their drugs or medicines to them. Furthermore, these medical representatives have good product knowledge and a distinctive selling proposition for their products over competitors in order to persuade doctors and PULL demand for their products from doctors to retailers to stockiest to C&F agents to the company. The job of the supply chain managers is to understand the customer's requirements and ensure a smooth delivery of these requirements and the medicines in the supply chain (Parmata & Chetla, 2021).

Some of the medical representatives' explanation of drug supply chain in Bihar corroborated with Parmata and Chetla's (2021) view on drug supply chain. MR3 while explaining the journey of the pharmaceuticals from the manufacturing unit said that, *the pharmaceuticals from the manufacturing unit travels to the Carrying and Forwarding Agents (CFA) or stockists of the state. From CFA it travels to various stockists. From the stockists it goes to the wholesalers and retailers. Some of the big retailers also act as wholesalers who take the wholesale license from the Drug Inspector (DI). The company directly sends pharmaceuticals only till the stockists; hence the drug quality is assured till the stockist level.* A few respondents said that, *sometimes fake drugs are introduced in the market in the brand name of a good company, whose quality is not assured and are poor in efficacy.* MR4 said, "*Stockists will not have fake drugs as they get direct supply from the company. Stockists have a turnover of Rs 50 lakhs to 1crore. The whole sale market for medicines in Patna is in Govind Mitra Road and it is one of the very big whole sale market of Asia. From Patna to Gorakhpur in UP there are lot of drug hawkers who do not have proper document for selling drugs. In Patna in the whole sale market, the medicines are not sold by keeping medicines in heaps like in Bhagirath whole sale market of Delhi, rather all the shops are good and properly organised".* MR4 also informed: "*For getting C&F license people give Rs 50,00000 to the company and can get stock of medicines for Rs 50,00000. There is only one C&F (controlling and forwarding agent) for each state. These people are very rich and powerful. C&F get 2% commission on medicines. To get licence for drug manufacturing only Rs 25000 is required. So small companies do not have a wide supply chain and they do not have C&F/CFA".* He meant that small companies operate on a small scale with low

budget. That is why they do not have C&F or stockist to distribute their drugs as they may not be manufacturing drugs worth 50 lakh to 1 crore. Later when the companies grow up then they may add C&F and stockists in their drug distribution chain.

Figure 4.1 Life Stages of a Drug



The above diagram in fig 4.1 shows that the pharmaceuticals from the company travels to the CFA of the state who is usually only one in the state. The CFA forwards the pharmaceutical to the stockist. Sometimes the company also sends the pharmaceuticals directly to the stockists of the state. From the stockists the pharmaceutical travels to wholesalers or big retailers like corporate hospitals or bigger clinics. From the wholesalers the pharmaceuticals go to the retailers. The patient buys drug/ medicine from retailers/ pharmacy shops and from pharmacy shops located in doctor's clinic or big hospitals. The medical representatives deals with the doctors, retailers, wholesalers and stockists to ensure the supply of drugs.

The retailers as observed in the study region in Patna and Saran districts are- chemists or pharmacist, chain of pharmacy, quacks or the doctors selling in their clinics. In Patel Nagar when the researcher revisited in 2021, she observed that a small pharmacy shop closed down and a new big retail pharmacy chain had come up in the vicinity by the name-BM (name coded). It was pharmacy chain which gave franchise to open more such shops by the same name. The researcher was surprised to see the new shop as the area already had many chemist shops and a very big and old one too by the name SM Store (name coded). The opening of the new pharmacy shop showed that the sale of pharmaceuticals had increased giving profit to each shop in the area. More surprising is that the place is very close (about 4-5 kilometres away) to a big shopping hub in boring road which is well connected to Patel Nagar. This shows that in urban Patna the drug supply is ensured at the door step of the people. On the contrary in Hussepur Village there was only one pharmacy shop located in the main market of the village. The doctors over there however, do home visit many a times for patient care and give the drugs to the patients, themselves. The doctors also have their clinic in the main market and they manage their time in the clinic and home visits accordingly.

Figure 4.2 Picture of Pharmacy Shops

A retail pharmacy shop in Patel Nagar

A pharmacy shop in Hussepur village

The supply chain of iron and folic acid tablets in Bihar's public health system is as follows-The Bihar Medical Services and Infrastructure Corporation Limited (BMSICL), was established in 2010. It is the sole corporation responsible for procurement and distribution of drug and equipment on behalf of Government of

Bihar. Purchase orders are sent to BMSICL, which procures medicines from suppliers and distributes them to regional warehouses. All districts are required by policy to acquire enough medicines to last 6 months, with a second order placed 3–4 months later to provide a 2–3 month buffer supply. Districts are responsible for retrieving medicines with cash in hand from Patna-based depots. The drugs should then be allocated to the blocks based on their estimated needs (which should be presented as a written request or 'indent'). The Medical Officer in Charge, and Civil Surgeon of the district, must authorise indents from the block store before they may be submitted to the District Store for fulfilment. ANMs get IFA to distribute at their health sub-centres and monthly Village Health, Sanitation, and Nutrition Days (VHSNDs) from the primary health centre. Though there is a clear policy for Iron and Follic Acid (IFA) tablet distribution and counselling to pregnant and nursing women, there is no clear policy for health sub-centre medicine requests and stock management. Accredited Social Health Activist (ASHAs) in villages receive IFA on their own through ASHA medication kits. IFA is not given to Aanganwari Workers for the distribution of prenatal care. Through VHSNDs, all three are in charge of arranging IFA distribution to pregnant women in their coverage areas. However, the particular tasks and stock management responsibilities of the three positions are unclear (Wendt et al., 2018).

Thus we understand the drug distribution chain in public and private system. In private set up, the MRs play an important role in the last mile connectivity at the retailer's end. This also helps them build relationship with the retailers. Owing to the complex regulatory and quality assurance requirement in the drug supply chain, the overall cost of the medicine is negatively impacted. Introducing new technology and other process improvement in the entire health care supply chain is also slower because of the conservative practices adopted considering complex legal framework. These complexities lead to substantial increase in the cost of the drug at the retailer's end. In the health-care industry, supply chain costs account for 38% of overall costs, while in the retail industry, supply chain costs account for 5% of total costs (Kim and Kwon, 2015).

4.3 Marketing and Sales Strategies of Pharmaceutical Companies

The pharmaceutical companies make a very extensive marketing strategies to make their drugs travel from their retailers to the end consumers or patients. The field data and observation indicate that pharmaceutical companies hire Medical Representatives for each therapeutic divisions, to promote their drugs (products). One therapeutic division hires many MRs. Each MR is then given a specific region of a district to take care of drug sales in that region. Similarly, the sale of all the drugs of a particular therapeutic division is tracked by MRs in each and every region of a district and likewise the state. The MRs are supervised by their superiors like Regional Sales Representative, and they (Regional Sales Representatives) are supervised by Zonal sales representatives and so on.

Among health providers- like doctors and quacks, the pharmaceutical companies do not make any difference among them. The doctors and quacks would increase the sales of the drugs by prescribing them. Everyone who prescribes the companies' products (drug) and increase their sales is their 'customer'. 'Customers' may be MBBS doctors and other prescribers like ayurvedic degree holders practicing allopathic treatment, pharmacists prescribing medicines to the patients, or those who after working for some years under a doctor, starts prescribing on their own. In order to meet the sales target, the MRs said that they have to generate prescriptions from their "customers". By "customers" they mean those people who prescribe the drugs of their companies: *"Chemist pe based nahi hai hamara kaam. pharma company ka customer doctor hota hai. Patient nahi hai. Company prescription nikalne pe hi chalti hai. Prescription hai to sale hai." (Our work is not based on chemist. Doctor is the customer of pharmaceutical company. Patient is not their customer. Company's business relies on prescription. If prescription is generated then sales take place),* said MR5.

MR5 futher continued, "*ek MR ke liye jo bhi unka drugs prescribe ya sell karta hai wo unka customer hota hai. ek Zarrah*[19] *bhi hamara customer hota hai. Kabhi kabhi wo bahut jyada sale dete hain"(For MRs everyone who prescribe or sell their drugs are their customers. A Zarrah (one who prescribes Unani medicine) is also our customer. Sometimes they give very good sales).*

[19] *Zarrah* pronounced as **ज़र्राह**- they are informal practitioners of Unani medicine.

MR1 and MR7 indicated that *quacks* are their customer as they give business to them*: "In Patna they can be found in corner place where they cover low profile patients or poor patients. They can be found from Digha to Danapur road in Patna but not in Bailey Road, or boring road" (MR7).*

All the MRs agreed that they visit quacks for prescription generation and sometimes they are good customers as they help in generation of prescription of their drugs: "Deoriah mein ek Zarrah tha jo 30,000 se 40,000 ka business per month de deta tha" *(In Deoriah there was a quack (trained in Unani medicine) who would give business of 30,000-40,000 per month) (MR5).* Hence it is observed that apart from MBBS doctors; quacks or anyone who is not trained in western medicine, yet practice it; is a customer of the pharmaceutical companies. They do not leave anyone who could prescribe their drugs and help in their sale. Hence it is distinctly seen that the pharmaceutical companies do not restrict themselves on qualified professionals for meeting their sales target. They track each and every prescriber of a locality, district and state, and promote their drugs among them.

MR4 said, "*The patients are unaware of the fact that for a particular health problem of theirs, they should visit a doctor specialised in that particular field. They consult any doctor whom they feel comfortable to consult. Hence, we MRs while marketing our products, we visit all the doctors and not just the doctor of a particular speciality. The doctors also cater to all patients".* All the MRs informed that in the area assigned to them they visit all the western medical doctor, ayurvedic doctor, and quacks practicing in their area. For doing so they also work in tandem with the chemists or retailers. Increase of prescription generation for their drugs, is the main motive of Medical Representatives (MRs). MR4 said, "*Doctor, retailer, aur MRs sabhi ek saath kaam karte hain*" (*Doctor, retailer, MR all work together);* to boost the sale of MR's brand drug *(MR4).* For this the company gives training to the MRs at regular intervals. "*Time to time training of MRs is done, regarding -1) their skill improvement in rapport building, 2) sales promotion, 3) product knowledge, 4) understanding a customer (doctor)- how to know him?", "wo mere sath cheat kar sakta hai ya nahi, product likhega ya nahi" (whether the doctor will cheat an MR or will write his product or not),* said MR4. He further informed that *the pharmaceutical companies give detail training to the MRs to improve their communication skills and build*

relationship with doctors, quacks, chemists, in-depth product knowledge, sales strategies and how to understand a customer.

All the MRs said and agreed that *their most important job is to generate prescription for the drugs in their portfolio*[20]: "*prescription generate karna MR ka main kaam hota hai*" (*MR's prime job is to generate prescription), said MR5.* The pharmaceutical companies train their MRs for prescription generation. For this they make them visit the prescribers on a regular basis and also train them how to ascertain the maintenance of continuous generation of prescription. MR4 said that, *an MR tells a doctor about the new drug in his portfolio, reminds him about the old medicines through small gifts like calendar, coaster, pen etc with brand and drug name written on them.* Repeated visits are very important for MRs to increase the prescription of their drugs and thus increase the sales. Dr3 said, *"Repeated visits helps a lot. If the company send information through mail or courier, then it won't work as much as face to face meeting as lot of doctors do not have time to read mails".*

All the MRs said that the companies fix yearly sales target for its representatives meeting which they are given incentives in terms of cash or holiday packages. The marketing and sales division make different strategies in the form of incentives of different forms and values to be given to the prescribers (doctors and quacks) as well for continuous generation of prescription. MR4 said that, *the profit margin of medicine is very high. Company reduces its own margin and share it with doctors by giving them gifts and sponsorship.* In return of the incentives the pharmaceutical companies get the prescription for their company's drugs generated. MR4 while talking about the pharmaceutical companies' marketing policies said, "*use hisab kitab se matlab rahta hai" (company is only bothered about its accounts. In other words, he meant that whatever company spends on the doctor, it gains and gets back from the prescription of that doctor.)* Thus, the companies do not reduce its own profit margin to share with the doctors for prescription generation as told by MR4, as he himself contradicts that the company is only interested in getting back what it gives to the doctors.

The MRs are trained in companies' sales strategies and they know when, where and for whom to use the incentives. Most of the MRs reiterated what MR1 said,

[20] Portfolio over here means the range of drugs that MRs have to generate prescription for.

"Company kuch bhi free mein nahi deti hai" (company does not give anything (gift) for free). The MRs change the prescriptive behaviour of doctors with the help of incentives to achieve their sales target and compete in the market with similar products (drugs). "*With the help of visual aid, promotional input, gifts, samples, scientific study and information, latest drug trial information, we try to influence the doctors. Company gives compliments or incentives to doctors from time to time, like on marriage anniversary, birthday. We mainly try to develop a good personal relation with the doctors", said MR1.*

Dr3 said, "MRs visit us in the OPD. They give us the information regarding their product- the molecule and their chemical composition, research done on the product efficacy and its utility on different therapeutic diagnosis. The way of presentation, product explanation and constant repetition by the MRs are helpful for doctors in remembering the drug name and its use".

The pharmaceutical companies change their incentive strategy with the change of the seasons to grab market of the changing health problems: *The months of December and January are off season for sales as these are healthy seasons with less sales. So, companies engage themselves in recruitment and training of MRs or other staff in this season. Summer is the season of diseases; hence the MRs get busy in their work by the onset of summer, informed MR4.*

MR4 said that *the MRs maintain complete profile of each doctor in a particular format like doctor's name, place, DoB, marriage anniversary, number of family members. Such profile is available online with MRs and is also available at company's head office.* MR4 further said that *only good companies keep this data. This is an internal data of the company and they do not share it with anyone. MRs also do not share among themselves. However, it may happen that fifteen companies' MR will wish and gift to celebrate marriage anniversary of a doctor.*

Hence it is observed that the pharmaceutical companies lay down very detailed strategies for increasing the prescription for their drugs. The assumption here is that - the more the prescriptions are generated, the more the drug is sold. Hence, they give very extensive training to their MRs that covers – communication strategies, drug information and use, skills to understand their customers. For this they make their

MRs visit the doctors frequently and at times daily. They incentivise both the MRs and doctors to ensure continuous increase in prescription of the drugs. However, nothing is free. So, what they invest in doctors they get it back. Doctor pays for the goods received from the company by writing prescription. Here it is interesting to note that pharmaceutical companies consider prescribers, -doctors and quacks as their customer and not the patients who actually buys the medicine and consume them. They also do not make any difference between an allopathic doctor, Ayurvedic Vaidya, Hakim, unlicensed practitioner or quacks, etc. they promote their drugs among whom ever prescribes them. Thus, they do not bother on the impact of the use of drugs on the end user. The companies take care of seasons and do not waste any time and resources.

Therefore, over here the market is created by pull or create demand by increase in supply theory. The argument given by the pharmaceutical companies is that they give right to self -determination through providing lot of choices to the patients. However, this choice is an illusion as the patients are depended on doctors, who are the actual customers of pharmaceutical companies (Applbaum, 2006).

4.4 Marketing Strategies of Big and Small Companies

There are two types of companies – small- "propaganda" companies and big - "good" companies as told by the medical representatives. The big companies have higher turn-over with good quality drugs/medicines and well laid structured marketing policies. The medical representatives interviewed were mostly from big companies and they called the small companies as "propaganda company". In the words of MR1 it was expressed as: "*Propganda companies ethical marketing nahi karti hai"* (*Propaganda companies do not do ethical marketing).* Almost all of the MRs agreed that there are lot of unethical marketing practices in the pharmaceutical market due to propaganda companies. The intrusion of small companies has brought about change in the marketing practices of big companies as well.

The MRs have their own measure of defining big and small companies. In general, the big/small companies are defined by their annual revenues and profits. The bigger players in Indian market like Sun Pharma, Divi's Laboratories, Cipla, Dr. Reddy's Laboratories, Gland Pharma, etc. have huge market capitalization. However, in every

major region like Bihar there are smaller regional players who have to compete withs these bigger organized companies. Smaller regional players involve themselves in bigger propaganda to market their products to the medical practitioners. This is perhaps the reason why the MRs classify medical companies into small propaganda companies and big companies.

According to MR4 and Dr2 both big and small companies try to allure doctors. The difference between them is that, "*Small companies cannot approach big doctors as they can't negotiate and pay high value gifts, so they approach the young doctors with little experience",* said MR1. MR1 further said that, *small companies directly talk about gifting cars and giving cash in return for prescription. They do not spend much in marketing and usually go to small doctors, or quacks for generation of prescription. Small companies introduce their drugs to quacks and young doctors who easily get lured by cash and small gifts like wrist watch or wall clock. It is because of these companies the marketing of other companies gets hampered. They give Rs 20 commission on one box of medicine. They try to allure the doctors by saying, "Dr. sahib aapki gari purani ho gayi hai badal lijiye." (Dr Sahab your car is old now you change it). MR1 further continued, "Small companies sell by hit and trial to small doctors. Once their drug gets established in 2-10years and their product efficacy is known by doctors, then other big doctors also start prescribing their products".* Such view about marketing strategies of "propaganda companies" has been given by all most all the MRs. The small companies try to copy the marketing practices of big companies, and also alter their marketing practices informed MR4.

MR4 says that small companies alter the marketing practices of big companies and at the same time he also says that small companies try to copy marketing practices of big companies. It means that both types of companies influence the marketing practices of each other. It was understood that small companies emulate the big companies in terms of giving incentives and hence they give cash to the doctors. The big companies then are forced to give cash to some doctors in order to compete in the market.

MR1 further explained - *"small companies do not have manufacturing plant, do not indulge in R&D, they do not have brand image and goodwill. They do not have quality tests for their drugs. Hence, the profit margin of their product is very high. So small companies corrupt doctors by directly bribing them. They tell the doctor that if*

they(doctor) give five prescription per day then at the end of the month they (small company) will give them fridge or colour TV. These days doctors also demand air ticket, or IInd AC ticket, or booking for a hotel in Mumbai. Such change has occurred since 2000-2002, as the number of small companies increased to 20,000 approx".

MR4 also informed that, *small companies do not have wide distribution chain as they have limited capital. To get licence for drug manufacturing only Rs 25000 is required. So small companies start on a very small scale, they do not have a complex distribution chain and overhead expenses of advertisement, brand image, etc. They gain high profit by selling in a very small area of a state.* MR4 also informed that a lot of small companies have also mushroomed in Bihar. MR1 further explained that *small companies mostly market in villages where doctors are less qualified and quacks are more.*

On the contrary the big national and multinational companies have well laid marketing strategies as indicated by all the MRs. MR4 said, *"Good company has state wise customer data. In training of MR, they discuss about the customer profile of all state, in order to understand how to market with such doctors".* MR1 said, "*Now big companies give big offers like they offer Malaysia and Singapore trip to doctors. The doctors are also demanding".*

Thus, the big companies spend a lot in prescription generation. The salary of big companies' MR is more than the small company's MR as informed by a few of the MRs. These companies employ MRs having good educational qualification and give them proper training for marketing their pharmaceutical products.

MR4 *further elaborated that good company's marketing policy varies according to different state, cities and villages as the customers (doctors) vary. For example, In Kerela due to high education (literacy) the attitude of doctors is different. Thus, the bargaining doctors are less in the state. In Bihar such bargaining doctors are more. Hence the company has state wise customer data. In training of MRs, they discuss about the customer profile of all state, in order to explain how to market with such doctors.* MR1 said that, *in big companies the cost of product is high as they maintain the quality of product by following good manufacturing practices. The profit earned*

by companies are spent in R&D, quality control, marketing of products etc. MR1 said that, the product margin of big company is very high. Company reduces its own margin and share it with doctors by giving them gifts and sponsorship. The big companies MRs are highly paid.

MRs informed that they talk about incentives to the doctors directly once they find that a doctor is a good prescriber.

MR4 further continued that, *in big companies sometimes even if new drug experiment is in pipeline, they start promoting the drug. Example tramadol was earlier used analgesic later it was found in curing herpetic neuralgia. If a drug is found to be efficacious in any country or place, it is marketed in India based on such study.*

Both big and small companies compete with each other and influence each other's marketing strategies and indulge into unethical marketing practices. In Bihar there are lot of Bargaining doctors as informed by MRs. Therefore, it can be assumed that the unethical prescriptive practices will also be more. The big companies according to MRs do ethical marketing practices. By this they try to mean that they are more polished in their marketing and do not indulge into openly bribing the doctors until and unless required, due to the presence of MRs of small companies.

It was surprising for the researcher to know that the MRs said that the small companies do unethical marketing and big companies do ethical marketing. The researcher also understood their point of view as the small companies are very unpolished and they do not follow any marketing principles or guidelines. By openly giving cash and bribing the young doctors they are endangering the patient's life more than the big companies. The big companies are very polished and they market their drugs, following certain marketing principles.

4.5 Change in Marketing Trend

Regarding the change in marketing trends MR4 (interviewed in 2007) said that, *earlier there were less companies, less products and less doctors. Now there are more companies, more products and more doctors. The competition between them has increased.* MR1 (interviewed in 2008) said that, *now there are 40,000 listed companies and about 2 lakh unlisted companies.* MR4 said, *"Now there are lot of*

small companies producing generic drugs and hence there is a lot of competition between them. Earlier generic drugs were not much in sale as there used to be big branded companies who had their own R&D product".

MR4 explained that *now new molecules are not coming, so patented drugs have reduced*. He continued, *"With the expiry of the patents, the number of generic drugs has increased in the market. Now there is more competition to sell the same API (active pharmaceutical ingredient) with different brand names. That is why the policy of giving gift, and sponsorship has increased".*

A few MRs indicated that now due to drug price control pharmaceutical companies bring out new molecule by slightly changing the earlier molecule to evade the price control.

Now unethical marketing practices have increased due to competition between big companies and small companies producing generic drugs of same salts. MR4 said, *"Now to gain an edge over the competitors, bonus and sponsorships are given by companies. Now rigorous marketing practices are followed by giving more gifts and incentives of higher value to MRs, doctors and retailers. MRs of big companies do not talk directly about giving gifts to the doctors. They talk about it in a very polished and refined way. High value gifts given to the doctors are car, computer, washing machine, and anything else which the doctors need or demands. Now big companies give big offers like they offer Malaysia and Singapore trip to doctors".* All the MRs said that doctors' conferences are organised by pharmaceutical companies and their conference trip is funded by the companies to get the prescription of their drugs from that doctor.

MR4 further said, "*Now the MRs report online on the progress of their work on daily basis, which was not so earlier. This puts extra pressure on the MRs to fulfil their targets. The MRs also go for foreign trips on completion of their target. In contrast to this, earlier they were given salary, bonus and commission".*

A few of the MRs lamented that earlier the MRs were respected by doctors for their knowledge on drug and drug molecules but now they are not. The propaganda companies due to unethical marketing strategies have tarnished the image of the MRs as well. MR5 said, *"chalis saal pehle MR log Medical Representative hote the, magar*

ab aaj ke date mein prescription generate karna unka kaam hai. Iske liye chemist se miliye, doctors kuch demand karein to fulfil kariye" (40 years ago MRs were known as Medical Representatives but presently their work is to generate prescription. For this they meet the chemists, if doctors demand for something then they have to fulfil it). MR4 said, *"abhi trend change ho gaya hai, abhi doctors baat karte hain - kahan se aaya paisa. Ek jamana tha ki doctor log MR ko chai pilata tha , aur ab MR kya de ke gaya dekhte hain."(Now the trend has changed. Now the doctors talk about coming, from where did the money come. There was a time when doctors offered tea to MR (out of respect) and now they see what MR has given him as gift.)*

MR4 said that, *the therapeutic subdivisions in pharmaceutical companies have increased. Earlier one MR used to sell all therapeutic drugs of a company but now there are different subdivisions and many MRs are recruited by one therapeutic subdivision to promote the sales of their products.*

MR4 said that, *now 50 percent of doctors are greedy for sponsorship and gifts and they demand high value gifts***.** MR4 said**,** *"pehle doctor log cycle, scooter, car pe chalta tha aur aaj ka doctor sidhe plane pe chadhna chahta hai. Isliye companies bahut jyada gift, bonus aur sponshoship deti hai." (Earlier doctors used to travel in cycle, scooter, car but now the doctors straight away want to travel on planes. So now companies give lot of gifts, bonus and sponsorship).* MR1 said, **"***These days doctors also demand air ticket, or IInd AC ticket, or booking for a hotel in Mumbai. Such change has occurred since 2000-2002, as the number of small companies increased to 20,000 approx"* He further continued, "*There are some doctors who prescribe on the basis of drug quality. These are old doctors. The new doctors are corrupt right from post graduation. In the new generation of doctors 99% of them are corrupt. Doctors say, "dekho yaar kahe ke liye barbar kar rahe ho? Paise! Tumhari company kuch kar sakti hai to bolo. Tumhare product likhne par kya karegi company?" (see my dear friend, why are you unnecessarily blabbering? Money! If your company can do anything then tell me. What will your company give if your product is prescribed?"*

MR4 said, "*there is change in the customer profile as well. Now the super speciality doctors have increased. They not only have their own clinics but also own diagnostic lab and pharmacy shop. So, all the profit goes to one doctor and such doctors are known as consuming doctors".*

MR4 further informed that, *his cousin brother a junior doctor gets request from pathological labs to refer patients to their labs and gets commission (bribe) from them*: "*ab bina test ke doctor log ka treatment nahi hota hai; pehle ka doctor log bina test ke treat kar deta tha" (now doctors do not treat without prescribing test for diagnosis; earlier doctors used to treat without writing for tests)"*.In other words he meant that now doctors are very ambitious and they want more money and faster growth of their income.

The change in the pharmaceutical companies marketing trends as told by MRs show that now the number of companies have increased and there is more competition between them for the marketing of the generic drugs. Now the doctors of Bihar are also more demanding and the incentive value has increased tremendously leading to high value gifts being offered to the doctors. Most of the MRs informed that for proper sale of the drugs, the therapeutic subdivisions in pharmaceutical companies have increased. MRs are recruited for each division and are given a group of drugs of the particular division for sale. Earlier one MR used to sell all types of therapeutic drug of a company. Now many MRs of the same company meet a doctor to promote different set of drugs of their company. Earlier doctors used to respect MRs for their knowledge and they would offer him tea. Now they see how much incentive would an MR give in cash or kind in return for prescription. Now prescription generation rather than giving product knowledge to the doctor, is the most important job of an MR.

These changes at the local level and the time frame given by MRs can be corroborated with the Macro level changes that occurred at the policy level. With the change of patent regulations in 1970, Indian Pharmaceutical companies witnessed tremendous growth through reverse engineering (process of manufacturing generic patented drugs) and legally selling the less expensive copies of these patented drugs. Due to inadequate product protection, price control by government and reduced profitability, majority of global pharmaceutical companies which were dominating the Indian market left the country. This along with thirty-five years of protection allowed Indian pharma companies, both big and small to move up the value chain and offer competitive pricing. The number of domestic pharma firms grew from 2250 in 1970 to more than 20,000 by 2005. On March 22, 2005, India changed its patent law to conform to WTO TRIPS agreement. Under the new patent laws the companies were

not allowed to reverse engineer the globally patented drugs however, it allowed off patent generic drugs and generic version of drugs patented before 1995 to be sold, which gave enough breathing space to these organisations since 97% of all drugs manufactured in India were outside the new patent laws. Due to majority of companies focussing on small number of generic drugs which were off patent, fierce competition started which motivated all kinds of unscrupulous methods for increasing the volume of drugs sales (Greene, 2007). This was the reason for pharma companies working in Bihar to change their marketing strategies and increase the value of giving incentives to both MR and doctors to meet with the cut throat competition with both big and small pharma companies. The change in the culture of incentivization in turn changed the attitude of the doctors as well. They also became greedier and demanding for the high value incentives.

4.6 Reasons for Sale through Prescription Rather than OTC

According to one of the owners of a local pharmaceutical company in UP- the pharmaceutical companies sell its products in two ways- 1) advertising in media like TV or magazines to sell the products over-the-counter (OTC), 2) by generating prescription from the doctors. Generating sale of drugs through advertising in media is very costly and profitable only in the long run. Only those drugs can be sold OTC which are very old and their safety and efficacy is well established and approved by DCGI over long term use. So, for the small companies' media advertisement in not very preferable mode of advertising as it is very costly and the drugs sale takes long time to get established. For them the second way i.e., through prescription generation is cheaper and more viable option. He gave an example that small companies with about 25-30 staff can earn a turnover of 1.5 to 2 crore. They keep around 20 MRs and 5 office staff to manage their sale through prescription. The expenditure on staff and MR salary is around 84-96 lakhs annually. He further informed that the company shares around 20 per cent of the profit with the retailers, 10 per cent with the stockist and rest 70 per cent it keeps with itself. The incentives given to doctors are taken back in the form of prescription. *"doctors ko paisa ek haath se de aur ek haath se le leti hai" (to the doctors it gives money with one and and with another hand it takes back.) "agar doctors prescription likhna band kar de to company unko diya hua gari utha leti hai" (if the doctors stops writing prescription then company takes back the car given to him)*

With the goal of promoting public health safety, the Drugs and Cosmetics Act 1940[21] distinguishes prescription drugs, narcotic and psychotropic substances, over-the-counter drugs, and medical devices. Schedule H drugs as given in this act contains a list of pharmaceuticals that can only be purchased with a qualified medical practitioner's prescription. Another rule that must be followed is that just the prescribed number of medications can be dispensed. Only licensed parties are permitted to supply or sell these drugs. Hence the pharmaceutical companies can increase the sale of these drugs only through doctor's prescription.

The majority of Big Pharma's marketing budget is spent on doctors and others with prescribing power, who are effectively the gatekeepers to medicine sales. To promote drugs to doctors, Big Pharma spends more than $19 billion annually in the United States alone (Buckley, 2004). The companies spend so much money on doctor promotion as they recognize that doctors are the gatekeepers to the success of specific brands. According to Barnes (2003 as cited in Buckley, 2004) a physician's prescription can make or break a brand's success. This is why marketing through prescription generation is very essential and indispensable for pharmaceutical companies.

4.7 Role of MR in Prescription Generation

Sales representatives have attracted little attention from anthropologists. It is important to understand the way in which the MRs generate prescriptions.

The process of generating prescription across the companies is more or less same. All the MRs and company managers interviewed agreed to the fact that in order to generate prescription regular visit to the doctor is a must. Regular visit ensures that the doctor remembers the medicines of the pharmaceutical representative which he needs to prescribe. Regular visit, gift with drug name and company name printed on it, samples, calendar, pen, writing pad or anything that is on the doctors table or in his room reminds him of the medicines and the pharmaceutical company which has obliged him and he needs to give in return in the form of prescription.

For example in Indira Gandhi Institute of Medical Sciences (IGIMS) small paper chits of medicines given by various medicine companies were pasted in front of the doctor

[21] https://legislative.gov.in/sites/default/files/A1940-23.pdf (accessed on 26.12.2022)

Dr2's table like- Flothin of Ranbaxy, Amloz TS of Shreya, Rosuvas EZ – 70% cholestrol reduction (without company name) etc. The pharmaceutical companies try to capture the mind, memory and life of a doctor in different ways to ensure that its drugs are prescribed by the doctor on the daily basis to meet the monthly and annual sales target.

A Business Manager from Company Z (code name of company), said that with the help of visual aids, promotional inputs such as gifts, samples, scientific information, latest trial information about the company's drugs, the MRs try to change the prescriptive habits of the doctors towards their company's brands. The MRs have a complete profile of each doctor in his portfolio regarding his birth and marriage anniversary, the taste of doctors regarding sports, business, cars, colours, his needs both intellectual and material. A soft copy of such profiles is also kept in the big MNC companies so that if the MR leaves the job, then the new MR replacing him can use the data. Thus, apart from describing the product features and its advantages over the competitive brands, the MRs give gifts and offer sponsorship for conferences in return of prescriptions for his products. The MR from company Y said that no company provides gifts or sponsorships to the doctors for free. The company is interested only in its profits which it gets by obliging the doctors to write more prescription for its products.

4.7.1 Maintenance of Prescription Generation Habit

This is done by regular or repeat visit of the MRs to the doctors mainly to maintain 'Human touch', as said by a Business Manager from company Z. Each company may have at least 2-6 competitors for each of its products. So the MRs face intense competition from their competitor brands to generate prescription for their products. According to an MR of compnay Z, maintaining the prescription generation is a big problem for them as the moment the prescription starts being generated by a doctor, the other competitor starts hammering immediately and tries to 'break' the doctor. By the term 'break' he meant to change the prescriptive habit of a doctor from his competitor's brand to his company's brand.

Therefore, each MR of a company has to visit on an average 200 doctors in a month depending upon his division and the products he handles. Therefore, on an average each MR has to meet 10-12 doctors in a day.

MR1said, "*MRs have to generate prescription from various types of medical practitioners like- quacks, doctors, etc. They have to ensure the availability of their product at stockist and chemist's level. Help stockists and chemists to maintain their inventory and take order and payment from the stockist to company. He gathers information on promotional plan and activities from the company and passes on the information to stockist, wholesalers and retailers. He gives feedback of the field to his senior head."*

MRs are given targets broken down to yearly, monthly, weekly and daily basis. MR2 working in Cardiac and diabetic division of company S said that he handles total of 15 products , some of them are - DTM-5-mono Eso-Sorbid 5 and mononitrate 10, 20; ATOR; Ator-EZ, R-Pril, Neurostem, Diclim, Diclim Pz, Clopod, Clopod-A. (If he has sales target of 24 lakh /annum. The yearly target is further divided into monthly target, for the ease of MR and to help him understand his target achievement. eg he would have monthly target of Rs 2 lakh/month then he has to generate prescription and OTC of two lakh out of the 15 products.) Hence, he has to ensure that the product of 2 lakh is available from company to stockist. Or else send the list of requirements to company every fifteen days. There are total of five stockists of his company in Patna/Bihar. They also help the stockist in forwarding the demand draft or cheque of 2 lakh to the company. Then he ensures that the chemists have the stock of the product and the doctors are prescribing the medicines. With experience they get to know the tentative sale of the product per month. For each day their work and sales target are chalked out, which eventually help them to meet their target at the end of the month.

There are set rules for meeting the sales targets. As evident from the response of MR4, the process is well organised. In the words of MR4*: In meeting the target, an MR has to meet 12 doctors and 5 chemists per day. The time of meeting is fixed. MRs face a lot of difficulty in meeting such targets daily. The MRs resolve such problem of meeting daily by contacting on phone if he has good rapport with his customers which is built over a period of time. The MRs have penetrated in all nooks and corners of cities, towns and village and they map all the prescriber- doctors or quacks sitting in every nook and corner of the area given to them to work in.*

MR of company S said**,** "*Big company sell costly products and one needs to know deep product information and knowledge. It depends on doctors which product he wants to write. The repeated visit of MRs helps in influencing the doctors*". The researcher asked "How does he ensure that the doctor will write?". He confidently said, "*In one crore population (of doctors) someone will definitely write".*

MR4 explained -Why a doctor will write his product? *In a month an MR has to meet the doctor twice and has to explain his product in 2-3 minute. Hence, an MR has to be good in*

a) product knowledge

b) communication skills

c)smart personality

d) good in local influence and local language

e) maintain his visiting frequency

4.7.2 Drug Promotion among Quacks by MRs

MR1: quacks write the drugs of propaganda companies more as these companies' MR say that "doctor sahib aap agar roz 5 prescription likh denge to ham aapko 10 sample free denge ya koi gift denge." (If you write 5 prescriptions daily then I' ll give you 10 sample free or give you some gift.).

4.7.3 Drug Promotion among Pharmacists

The interaction with MRs and pharmacists[22] revealed that *a retailer is a very important source of information for an MR. The MR sits with the retailer on weekly basis for ½ -1 hour to find out how much is the prescription generated for the drug in his portfolio and from which doctor. The retailer gives him information regarding- from which doctor a patient comes with the prescription for the MRs company's drug. A good relationship of MRs with retailers ensures a good information about his brand drugs. For the retailer, it's only the MR who informs him about various bonus schemes, else the retailer will not get it. The stockist will not tell the various bonus schemes given by the company as he would like to sell those bonus drugs to retailers to get profit. Hence MRs are important for retailers in giving such information. The*

[22] Note: pharmacist, chemists and retailers are used interchangeably at some places.

MRs also help retailers in keeping the stock of his medicines or else he may incur loss. Example If the retailer gets ten prescriptions for a particular brand drug for which he gets Rs 2 profit on each prescription. Then he will be at loss of Rs 20 if doesn't have the particular brand drug.

The schemes vary from company to company and it is company's internal policy. The MRs have no control over it and they are only implementing the policies of the company. Example Some company can give bonus of 10%, some give 20% or some may not give at all. Some medicines which are very popular and are sold over the counter may not have any bonus schemes. For example. Antacid like – digene.

MR4 said that, *all MRs have target which they have to meet. MR knows very well where the prescription for his drug is being generated. He manages 10-20% of prescription through drug substitution and giving incentive to the retailers in form of different bonuses.*

MR1 said that, *he requests chemist to replace prescription*. Requesting chemist to replace prescription means that MR also tries to replace medicine of other companies by his companies at chemist level. MR1also said that, *Companies also give gifts to chemists like writing pad, pen, pen stand, key ring etc.*

Such practices of financial inducements to retailers for medicine substitution in prescription have been reported by Brhlilkova et al. (2011). The retailers account for 70-80% of pharmaceutical sales in India. The retailers or pharmacists are an important point for medicine sales as they promote the medicines on which they get incentives as they have the facility of returning the branded medicines and is able to send back the expired stock (Brhlikova et al., 2007).

4.7.4 Types of Doctors

The pharmaceutical companies with the help of MRs, classify doctors into various types based on different criteria. Such kind of classification is done to ease the job of MRs to change the prescription habit of the doctors. The MRs approach them and provide them incentives according to their nature.

MR1: There are different types of doctors depending upon their nature:

Bookish/Silent/Timid: Some doctors do not speak much. They are bookish. Such doctors are interested in books and latest information on science and technology.

Trend setter: These doctors are highly learned. *"adhyatm ki oor jure hote hain" (they are spiritual).* They have ethical values. Example Dr. Sheila Kundu in Dhanbad, Jharkhand does not take even sample medicine. She likes latest information and talk to the point. She completely denies gifts. Their prescriptions are followed by other doctors of small towns or villages.

Open mouth: These doctors are talkative and openly ask for whatever incentive they want.

MR1 and MR4 said that, the doctors are also categorized based on the number of patients they see per day and the number of prescriptions they generate for a particular brand of a company. It is as follows:

1) A+ or core doctors
2) A
3) B

1) A+ or core doctors - They see 30-50 patients per day and generate maximum number of prescriptions for a drug/drugs of a company. These constitute 20% of doctors and they treat 80% of patients. Such doctors demand for Mercedes, plane tickets etc. So, for different companies' different doctors will be A+. The company sends latest information to these doctors through mail, courier, journals. The company takes care of such doctors in all respect.

2) A - They see 20-30 patients per day and generate moderate number of prescriptions for a drug of a company.

3) B - They see less than 15 patients per day and generate a few prescriptions for a drug of a company.

The A and B category constitute 80% of the doctors. For different company's different doctors will be A+ depending on the number of prescriptions generated by them for a particular brand. Same A+ doctors will not fall in A+ categories of all companies.

MR4 said that, *if a gift is given to the doctor, then he may not necessarily prescribe the drug. Certain things have to be kept in mind by an MR:*

1) Some doctors do not compromise with the drug quality and company.

2) Some doctors need academic knowledge, he needs access to journals and articles, then only he writes

3) Some doctors give importance to salesman's behaviour, appearance and knowledge. So, while prescribing the doctor will remember his product.

4) Some MRs have good convincing power and communication skills with which they change the prescriptive habits of the doctors.

5) Some doctor looks for quick result drug.

6) Some doctor writes the products if both the doctor and MR is from the same region.

7) MR4: He said that some doctors have their own counter to sell medicine. They are called consuming doctors. These doctors have their own nursing home and their own pharmacy.

The MRs are fully prepared about the type of his customers. Example- Old doctors are especially concerned about the low cost of medicine. Some doctors are interested in physicians' sample which he can sell and get money. So, MR gives him sample medicines so that he can write the MR's product in his prescription.

The researcher asked if there is any difference of approach by MR between public or private institution? MR1 said that the MRs follow aggressive marketing strategies in private institution, however this is not so much in public institution. Costlier drugs are prescribed in private institution. In public institution cheap drugs are prescribed keeping in mind the socio-economic status of patients. Cheap drugs of better efficacy are prescribed for such patients in public hospitals.

Table 4.1 Types of doctors or customers of pharmaceutical companies

S.No.	Criteria for classification of doctors	types	remarks
1.	Based on number of patients seen in a day	A+	prescribe maximum prescription for a company
		A	prescribe moderate prescription
		B	prescribe less prescription
2.	Based on age	Old doctors	have more than ten years of experience and prescribe low-cost medicine
		Young doctors	have less than five years of experience and very interested in incentive of MR
3.	Based on personality types or likes and dislikes	same region	prescribe because Doctor and MR are from the same native place.
	Based on personal likes or taste	bookish/silent/ timid	such doctors do not speak much and expects books of their choice and access to journals from MR
		trend setter	such doctors are learned and ethical, they expect

			MR to give only drug information and new knowledge of medical field. Their prescription is followed by other doctors.
		open mouth	some doctors look for higher incentives or high value gifts -some doctors look for drug from MR which can have quick result on patients; to retain them.
4.	Based on ownership	Own only clinic	such doctors are only interested in samples + incentives for doctors. Non consuming doctors.
		Own clinic and pharmacy located in same compound	Doctors owning a pharmacy in the same compound are called consuming doctors. Such doctors are also interested in knowing drug discounts.

Thus, the doctors are classified into various types in order to understand how to influence them and how to incentivize them. The MRs approach them according to their nature, taste and attitude. The MRs know about their birthdays, anniversaries and important events of their life so that they can oblige the doctors on those days and form a good relationship with them. The researcher observed that for personal

relationship development an MR of the same locality who know about the culture of the place, knows local dialect and accent can establish better personal relation with the doctors. Thus, the pharmaceutical companies make good use of the anthropological and sociological data regarding the doctors and utilize them in their favour. They have classified the doctors into various categories like- A+, A, B; old doctors and young doctors; Bookish, trend setter, timid, open mouth; non consuming and consuming doctors. Hajjar et al. (2017) also mentions similar classification of doctors based on patient turnover in their qualitative study done in Lebanon. Therefore, it can be said that such classification of doctors is done globally by pharmaceutical companies.

4.7.5 Incentives for Maintaining Continuous Prescription Generation

In order to sell drugs through prescription generation, the companies give heavy incentives to the people involved in different stages of drug life. Here heavy incentives given to the MRs, prescribers and chemists is discussed.

4.7.5.1 Incentives for MRs

The companies fix yearly sales target for its representatives, which if they meet, they are given heavy incentives in form of cash or tour abroad. For example, *an MR of company Y working in Patna said that there were five MRs working in different parts of Patna from his division. In the financial year 2007, they met their set pool target of 102%. All five of them along with their spouses were given a holiday package for meeting their targets. The company sent them to Bangkok for one week. The package included travel, stay in a five-star hotel, food, site seeing, guides, safety and protection; everything was provided by the company. This year they have a target of 110%. Every successive year there is a growth of 10-15% of target, which is fixed on some logic by the company. Apart from the incentives, this increases the pressure on the MRs and they learn to live under pressure,* according to him. The MRs meet their target by influencing the prescriptive practices of doctors and get the prescription generated for their company's drugs.

4.7.5.2 Incentives and Gifts for Doctors

Almost all the MRs reported that they do not talk directly about giving gifts to the doctors. They talk about it in a very polished and refined way. When the researcher posed the below question, an MR replied as follows:

Researcher: *How does company promotes its drug?*

MR4: *For promoting the drugs among doctors, the company offers various incentives like-*

1. gifts and sponsorships. The gift and sponsorship value may vary from Rs 50,000- 1 Lakh. This may vary from company to company and from time to time.

2. The company also gives journals and books to the doctors. According to the doctor's demand an MR may buy a book for him and get it reimbursed from the company.

MR1: There are some doctors who prescribe on the basis of drug quality. These are old doctors. The new doctors are corrupt right from post-graduation and they openly demand for incentives for prescription. In the new generation of doctors 99% of them are corrupt. Doctors say, "dekho yaar kahe ke liye barbara rahe ho. Paise! Tumhari company kuch kar sakti hai to bolo. Tumhare product likhne par kya karegi company." (See dear friend! Why are you blabbering! Money! If your company can do something then say.)

MR4 further explained that for doctors the gift policy are of two types:

1) *Small gifts- the company decides for such gifts in consultation with MR, i.e whether to spend rs 100/ or 200/. What kind of gifts to give like: belt, purse, goggles etc. the company then ties with another branded company for the gifts like wrangler for belt. It then decides to distribute gifts to 25 doctors who would increase the sale upto 25-30%. The MRs inform the doctors about the gift and if the doctors give the desired sales increase, then he gets the gift.*

2) *High value gift-this may be in the form of a sponsorship for a conference. In his division there are five MRs and each meet 200 doctors. Area is divided for each MR. Each MR identifies and make a list of 200 doctors to work with in his area.*

(These doctors may be general practitioner, ENT, paediatrician etc). The company through their MRs openly tell doctors that if he generates a particular number of prescriptions for a particular product (drug) of the company then he will get sponsorship for travel either in India or abroad. The MRs job is then to follow and keep a record of the doctor's prescription, which he does with the help of nearby retailers. Time period is given to the doctor for writing the prescription either before or after the trip. If the prescription falls short of, then MR reminds him, that he has decreased the prescription for his company's medicines.

If one doctor goes to a conference, twice in a year, that means that doctor ties with two companies for it. That is, he is promoting and generating prescription for two company's products. The company do not share the expenses of a trip for a doctor. As each company is rival of the other company.

The doctor also does not ask for incentive from all MRs. He asks from those with whom his personal relation is good and also of a good reputed branded company with good product in affordable price in his portfolio. The MR also do not offer such high value gift to all doctors. He also offers it to those doctors with whom his relation is good, otherwise the doctor may betray him after getting the gift. In case two companies offer the same incentive to the doctor, the rapport of MR of a particular company with the doctor makes the difference, and the doctor writes the prescription of that MR.

MR4 said that *Dr. ABC is a very good doctor as he directly asks for money to write prescription.* (Here the doctor is good for MR because he prescribes his drug)

MR1 said that *in order to influence the doctors the company organizes conference in which it invites renowned doctors and ask them to speak about their experiences on their product. Example- It will invite cardiologists from AIIMS and ten leading cardiologists of Patna. It will ask AIIMS doctors to speak on Atorvastatin (a drug administered to cardiac patients. The renowned doctor's speech on Atorvastatin product makes it acceptable to other doctors).*

MR1 also said that, s*ometimes company participate and contribute monetarily in conference organized by doctors' association. The pharmaceutical companies organize quiz contest, and give gifts. They organize games like - doctors have to write*

10 products of the company in one minute and give gifts to winners. These conference counters are sold between 2 lakh - 4 lakh.

4.7.5.3 Incentives for Chemists

MR4 said, "*The retailers get bonus at regular intervals for the purchase of various drugs depending on the company policy. For instance- the company may give bonus of five free bottles on purchase of 10 bottles of cough syrup. The retailer will benefit and the company will also sell its product as for cough syrups people usually buy it directly from pharmacist rather than going to the doctors. Depending on the company policy the retailer may be able to sell the syrup at the profit margin of 5% to 10%.*

The researcher asked him to *explain how does the schemes vary from time to time?*

MR4 explained that, *as winter is the season for cough and cold so the companies which manufacture cough syrups gives bonus to the retailers on cough syrups in this season. Winter is also the season for tonsillitis and pneumonia so the company gives bonus on antibiotics like cefaxime , taxim, omnatax etc. Typhoid fever is seasonal so its antibiotics will sell more in monsoon season. MRs ask the retailers to substitute the doctor's prescription and they give them bonus on drug substitution and sale of their pharmaceutical products. These schemes change from time to time.*

MR4 said that, *cardiac and diabetic drugs are not in his division. However, regarding these drugs, he said that if a doctor once writes a drug, then the patient is likely to eat it till 3years or more. For such drugs the schemes are different. There are some special schemes for which the profit is 50% or more. The information of it can be known from retailer or stockist.*

4.7.5.4 Incentives for Quacks (Q)

MR1 said that, *it is mostly seen that MRs of big companies' do not visit quacks and MRs of small companies' visit quacks and they give wall clock and wrist watch to them. Quacks are mostly found in villages as no doctors are found in remote villages.*

MR4 and MR1 said that they directly ask quacks in their local language to write their drugs. MRs also give them samples. These quacks treat MRs with great respect. They offer him tea, coffee. There are lot of quacks in Delhi and Bombay.

Q1 works in Rajeev Nagar, Kesari Nagar and Patel Nagar. He does home visits in times of emergency for giving injection, patient consultation, saline drip etc. He used to work as an assistant to gynaecologist and dentist in their clinic in Rajeev Nagar. He was 34 years of age at the time of interview in 2007. He was not even a graduate and was pursuing his degree from BD evening college. Q1 has been working as a compounder or male nurse for Dr4 for the last 14 years in Rajeev Nagar. Before that he worked under a doctor in Purnea district of Bihar. He also works for a diagnostic centre and collects blood samples from home. One of his friends from the same village Sisauna brought him to Dr4 in 1993, where he continued to work. (Sisauna village is in Patna district. His father is a farmer).

During the conduct of in-depth interview, he got a phone call from a patient. Patient was having loose motion, so he said that injection may have to be given. On phone he asked his patient to stop Taximo (medicine) and start O2 syrup.

He informed the researcher that *he learnt about disease and medicines to be used from the doctor's prescription. He sees the weight, age and mg of medicine prescribed*. He said that, *earlier MRs used to meet them and they would talk about the drug to the doctor.*

Q1 said that, *earlier MRs used to give lot of gifts but "ab doctor log bik jate hain, ab paisa ke upar bonus milta hai sidhe, ab doctors log ko to AC, Car milta hai" (doctors now sell themselves to MR. They get money and bonus, AC, car as well). Earlier, MRs used to give gifts like jug, steel vessels etc., to the doctors. Now more costlier gifts are given. Now more companies are there and more competition. Earlier only good companies' medicines were prescribed.*

Q1 said that, *MRs meet him as well and tell him to prescribe their company's medicine. MRs used to give him gifts earlier. But now they only give sample medicine. Now companies have stopped giving gifts. MRs visit him every 15 days. MR of company Y is a good friend so he sells more of his product. He mostly prescribes low-cost medicine. Some of the companies whose drugs are cheap are Mankind, McLeod's.*

Q1 meant that earlier companies used to give small gift items which the MRs used to give to them as well as to the doctors. But now since the value of gifts has increased

so, now they don't get gifts from the MRs, only doctors get the costly gift items. It was also observed that incentives are very less for quacks as they follow prescription of renowned doctors.

4.7.6 Problems Faced by MR in Generating Prescription

The MRs are in constant stress to fulfil their target and to compete with the MRs of rival companies.

MR4: The targets are fixed by the company every year. There is 10-15% of growth in the target every year and in good companies it is based on some logic. The MRs learn to live in pressure. The company also support them in meeting the target.

When the researcher asked MR4 for the problems of an MR, he laughed heartily for such a long interview, lasting for about 2-3 hours. He said that, *meeting the target is not much of a problem as he can reason it out. His company Y is not very strict with the targets. The problem is that, there is no fixed job hours so their personal life is hampered. Sometimes they have to work till 12 midnight and start their work at 6am in the morning. Their work mostly involves field work. "jaara, garmi, barsat mein, har haal mein kaam karna hai, har mausam ko jhelna hai" (be it any season- winter, summer, or rainy they have to go out to work). They do not have any fixed eating time. They have to work with the CFA and stockists which sometimes is problematic. However, in his company, the MRs do not have to deal with them. MRs job is to meet the doctor and make the product available to them and nearby pharmacies. Payment problem is there. A good pharmaceutical company gives salary of 15,000 -20,000/- to their MRs and propaganda companies give commission to their MRs. The starting salary of an MR is 5000-7000/-. There is an yearly increment of 3000-4000/- based on personality, clothes and performance.*

MR1: He says that, *job of an MR is tough as it is difficult to ask the doctor to prescribe in the face of competition, and ask chemist to keep the stock of medicines as the chemist says that if the doctor doesn't prescribe then no point in keeping the medicine. Likewise doctors also say that if chemist doesn't keep it, then no point in prescribing it. Sometimes MR takes stock of medicines for chemist at his own risk and with his own money, and if any problem occurs then he has to solve it at his own end*

or bear the loss of money from his pocket, if the chemist faulters to pay back as the company doesn't take any ownership of the stock purchased by MR.

A very negligible percent of doctors is still there in the market who do not accept such kind of promotional offers from the MRs. These are very old, high-profile doctors having in-depth knowledge and experience. They have a moral and spiritual orientation towards their life and their profession.

The study, 'Promotional Practices of the Pharmaceutical Industry and Implementation: Status of Related Regulatory Codes in India', was carried out in 2018 with an aim to explore the ground realities of promotional and marketing practices of the pharma industry and the implementation status of related regulatory codes in India by Gadre and Diwate (2018). The study primarily focuses on medical representatives as they are the front-line workers who are present on the field to promote drugs. Gadre and Diwate (2018) found that MRs are very much stressed in their job. Their basic salary is low and more dependent on incentives or commission which is based on their performance in target achievement. Management imposes pressure on MRs in the form of warnings, withholding salaries, reassignment to remote areas, and even termination letters if sales targets are not fulfilled. Supervisors have been seen using iPads to follow MRs' daily movements, which is a constant cause of stress (Gadre & Diwate, 2018). Based on the study a short documentary – "Ek MR ki Maut" is also made (Express News Service, 2019). Their working conditions, are highly stressful and cause sustained pressure on their mental and physical health. This was also reported by MR1 and MR4 in the present study.

4.8 Doctors' Role in Managing Prescription Generation

With years of pharmaceutical promotion through incentives now there is a change in the trend of prescription generation[23]. From what the MRs said, earlier doctors led a simple life and were less dependent on incentives and used to be more ethical in prescription generation. Now with the change of culture and with more inclination

[23] It was observed that the researcher could not ask very openly about the pharmaceutical business and the doctor's role in it as she could with the medical representatives. The medical representatives were very open and articulate about their ethical and unethical business, however the doctors were not very open about it. The reason that the researcher observed was that if the doctors would talk openly about their prescriptive behaviour, then it would tarnish their image and ruin their career as patients would stop coming to him.

towards lavish material life, now the doctors are more dependent on incentives for prescription generation. Majority of doctors follow the market trend for personal benefit. This is evident from the interviews of most of the MRs and also some of the doctors who were initially hesitant but later agreed that majority of doctors are influenced by the pharmaceutical companies' marketing techniques and prescribe their drugs to gain personal benefit. Dr2 said that *MRs provide different facilities to doctors like sponsor their seminar and conference trip.* He further said that, *a doctor has to listen and meet all MRs. Indirect benefit of this is that new things are learnt by doctors which they do not have time to learn from internet. Or later they verify the knowledge through internet.*

Dr3 told the researcher that *MRs visit them in the OPD. They give them the information regarding their product- the molecule and their chemical composition, research done on the product efficacy and its utility on different therapeutic diagnosis.* When the researcher asked about the sources of information for a doctor regarding the recent research on cardiac disease and technology, new drugs etc., Dr3 said that, *they have academic meetings twice a week for each department in Indira Gandhi Institute of Medical Sciences, (IGIMS) where a review or presentation is given by a senior resident doctor or a consultant. They also get information from library, books, internet and MRs.* He said that, *MRs are the main sources of information for the recent research done on drug use and innovations. If they do not visit the doctors then the information's will reach late. Doctors are so busy in their profession that they do not have time to update themselves. The way of presentation, product explanation and constant repetition by the MRs are helpful for doctors in remembering the drug name and its use. Sometimes a company organizes a seminar around its own products and call up renowned doctors to speak about its drugs to attain its acceptability among other doctors.*

Dr3 said that, *MRs visit them from 12-2pm weekly or twice in week. They organise conferences, seminars or sponsor the conferences organised by Association of Physicians of India (API) or Cardiological Society of India. They organise awareness programmes and health camps. The MRs give gifts to the doctors and hence some practitioners prescribe the medicines of the company which gave them gift.*

The researcher: *How MRs convince a doctor to write their prescription?*

MR1: *No doctors are 100% loyal to one company. He writes 80 % of the products of those companies who oblige him. The rest of the share of prescription is used for other competing products otherwise he will lose his image in the market. The doctors do not count but through his practice he makes an approximate estimate to write the share of products of different companies. MRs also help him in keeping a track of prescriptions written by him.*

Dr2: *Both big and small companies try to allure doctors. Small companies cannot approach big doctors as they can't negotiate and pay high value gift, so they approach the young doctors with little experience. The small companies try to copy the marketing practices of big companies. However, doctors prefer to prescribe the drugs of the bigger companies as its efficacy is known and quality is ensured. Also, the Doctors have to return what they get as gift or sponsor from them in the form of prescription, so they prefer the drugs of bigger companies. Small companies sell by hit and trial. Once the small company gets established in 2-10years and their "product efficacy"*[24] *is known by the doctor, then doctors also start writing their product.*

Regarding the MRs cardiologist Dr1said that *they sometimes give new information to the doctors. There are so many brand names in the market that sometimes it is difficult for the doctors to remember the medicine brand to prescribe. MRs help them in remembering their brand drugs and prescribe accordingly. In the market the big pharmaceutical companies are respected for quality assurance in their branded generics, hence patients who can afford those medicines also expect the doctors to write branded generics.* He said that *he selects drug based on good brand and cost of the drug. He has fixed MR timings in the OPD from 2-2.30pm.* He said that *he does not deny any MR from visiting him however in 30 minutes he meets about 20-30 MRs. If he needs any new information then he asks MR.*

[24] (efficacy of a product or medicine is known from the patients who come for follow up visit. If a drug leads to improvement in symptoms or completely cures the disease then it is supposed to be efficacious. Such drugs can be prescribed.) (for a drug to be efficacious, it should have very less side effects and also no dangerous side effects. But BPS did not mention this.)

The researcher observed that *he scolded one MR for telling him about high-cost medicines*. As in Indira Gandhi Institute of Medical Sciences (IGIMS)[25] where Dr1 worked, people mostly from lower socio-economic strata came who would not be able to afford the cost of the medicines. It is evident here that in spite of the pressures of generating prescription for the pharmaceutical companies doctors still try to balance their prescription habit depending upon the patient's socio-economic background as well as maintaining the professional standards of treatment.

Cardiologist Dr1 said that *MRs do aggressive marketing. They manage the results of trials and study for marketing of particular brands. Example- Beta blocker is marketed as first line of treatment, whereas in Europe and America the study states that beta blocker should be used as third or fourth line drug. A doctor has to go by what MR says or be critical and cross check his information. Majority of the doctors go by what MR says and only a few (about 20-25%) cross check the information given by the MRs. MRs extend their hospitality as a marketing strategy. The doctors also oblige the MRs to gain pecuniary benefits. The aggressive marketing is ethically and morally not justified.* He said that *companies sell drugs by giving incentive of free packets. Example, buy two packets and get one packet free. Pharma industries have profit margin of 300-400%. Government should regulate the profit margins and carefully implement the patent law. He said that he consciously prescribes his drugs based on price, potency and standard of company.*

Most of the MRs said that, *there are some doctors who prescribe on the basis of drug quality. These are old doctors. The new doctors are corrupt right from PG. Among the new generation of doctors 99% of them are corrupt. They directly ask for incentives. There are some doctors who are good prescriber of a particular medicine of the MR's company. The MRs directly approach such doctors.*

A patient P10 said that *the medicines prescribed by doctors are usually available in the pharmacy located in doctor's clinic or nearby chemists. Some of the medicine or brands are not available with other chemists. Hence a doctor usually write medicine which is available in the nearby clinic.*

[25] Indira Gandhi Institute of Medical Sciences (IGIMS): IGIMS is an autonomous government institution in Patna District of Bihar. The hospital dispensary which dispenses medicines free of cost, often fall short of many medicines which the doctors prescribe and the patient have to buy from outside.

4.8.1 Case Study of Dr2

During his interview when cardiologist Dr2 is asked about the influence of market on his prescriptive practice he doodles at first (draws round circles and long straight line and then curve it to right) and said "*jyadatar log apne fayde ke liye dawayen likhte hain", Majority of the people write medicine for their personal benefit."* He paused, thought for long and then said that he cannot comment on how much the market will influence. He further said that negligible percent of doctors are there who are not involved in malpractice or influenced by market. (He again thought for long in silence….) He then said that Dr. Om Kumar, nephrology head has 10years of experience and Dr. Bharat Singh, Orthopadic practicing in Punaichak near boring road, having 15-20 years of experience in PMCH are two doctors who have not involved themselves in unethical practices driven by market.

In his office room in IGMS, there was a book shelf. some of the books in it were 1) Davidson's principles and practice of medicine 2) ACC/AHA guidelines compendium 2005 3) Current Essentials of Medicine 4) Field and Guide (to bedside diagnosis) 4) Harrison's Mannual of Medicine. It was observed that most of the books were related to ethical and standard practice of medicine.

From these collection of books on ethics and observations of his interview; the way he answered his question on the influence of market in generating prescription, it's evident that it is very difficult to negate the pressures of influencing forces of market (that is incentives in various forms) of market on doctors. A doctor how so ever he tries to be ethical, he has to get corrupt in order to stay in the system.

The researcher: *How doctors Manage MRs?*

Dr2: *First doctors get satisfied by the knowledge given by MRs. Then they try the efficacy of drug on 4-5 patients and after that they start using it. Doctors have to oblige all MRs so they try to prescribe all companies' drug. They usually give share to all MRs. Sometimes even if MR is not convincing, but if the drug is efficacious and cheap, he personally prescribes it. "This is true of all doctors of my level". If the level change, then these criteria change, the reason for this is that the competition between MRs of different companies increase and they frequently visit the higher-level doctors. MRs meet the lower-level doctor less. Regular visit of MRs changes prescription habit*

of doctors in form of brand names. Example, Duphalac drug they used to write right from internship. One vial costed rs70-80/- approx. earlier there were few companies and few products. But now many new companies have brought the same drug at a cheaper rate.

Dr2 said that *sometimes doctors add extra drug in the prescription and add an extra cost to the patient which is not good. Example, "untoward drugs" which is not required much like b-complex or anti-oxidants. Usually this is not required for most of the patients."to ek extra load kyon badhaya jay patients ke pocket pe" (why to increase extra load on patients' pocket.)some doctors do think about the extra burden on the patients pocket but it is observed that doctors do such practice under the influence of the promotional practices of pharmaceutical companies. Irrelevant test is prescribed which is not required. Frequency of same tests increase. "ek test kaun sa bimari hai pata karne ke liye aur dusra test bimari theek hua ke nahi, ye pata karne ke liye"(doctors prescribe one test to find out the disease and another test is prescribed to find out whether the disease is cured or not). Doctors prescribe extra drug from the multivitamin basket which will not harm the patient if it is of no good for him. This adds extra burden on the patients' pocket.*

Thus, a doctor helps in sale of medicines of the pharmacy near his clinic and those pharmacy also keep a stock of specific medicines prescribed by doctors. The MRs help both the pharmacist in maintaining the medicine stock and the doctors in continuing the prescription generation of those stocks of medicines. Doctors give prescription trying to balance push from MRs, patient's economic situation and their own professional ethics, as evident from the interview with the doctors. If the doctors are aware about the ground realities of the patients, then they will also try to prescribe more genuinely based on the cost of the drugs. Although a doctor's knowledge of drug costs helps in rational prescription for certain therapeutic groups, however, evidence suggest that doctors' knowledge on drug costs is not accurate (Earl-Slater, 1998; Ryan et al., 1996). Hence, the doctors whether they agree or not are influenced by incentives of pharmaceutical companies while prescribing. Several studies reviewed by Buckley (2004) show a strong corelation between doctor's tendency to recommend a drug and incentives received by them from pharmaceutical companies. Many studies show that prescribing practices are negatively influenced by advertising

and incentive practices of pharmaceutical companies. Incentives influence the doctor's prescription in many ways-

1) they are unable to recognise false information about medications;

2) prescription of new drugs whose efficacy is not established;

3) irrational prescribing practises;

4) prescribing medicines more than required; and

5) prescribing of fewer generics and more expensive new drugs without any discernible benefits.

4.8.2 Ethics and Doctors

The researcher: *What would be called as ethical practice?*

Dr1: *An ethical practice should always work in the interest of the patient. Weather a patient can pay or not a doctor should serve him. Doctor should prescribe cheaper drugs and avoid irrelevant drugs. A doctor should not be judgemental based on the patient's status. Example, if a patient have to undergo surgery, even if he cannot pay for the surgery, the doctor has to tell the patient about the surgery. Unethical practice in government hospitals is less in comparison to private hospitals especially corporate hospitals. Now a days most of the drugs are present in government PHC. If drugs have to be prescribed to be taken from outside then the government doctors prescribe costly drugs to oblige MR. A small fraction of doctors does not oblige MRs otherwise majority of them oblige MRs and enter into unethical practices.*

Dr1 further state that, the companies give attractive gifts to the doctors. This marketing policy of companies is very alluring and unethical. Example, suppose if for buying one tooth paste one gets one brush free. Hence, we have the tendency to buy such products with free gifts. Similarly pharmaceutical companies allure doctors by giving them some facilities, like sponsoring conference, seminar, so doctors avail it. Most of the doctors take the attractive policy offered by companies. When doctor projects himself as consumer he doesn't forget his ethics. Companies can only influence a doctor's prescriptive habit to some extent. Ultimately universal truth is that quality and merit of doctors matters and he has to establish his practice, so he cannot by swayed by the company.

If a doctor doesn't avail the facility, then what will happen? Will medicine company reduce the price of drug? However, if government reduce the tax of good companies and companies reduce expenditure on drug promotion then cost of drugs can reduce and patients can be benefitted. He gives example of TB – how multi drug resistance is increasing as patients cannot afford the cost of the drugs so they do not take the medicines as prescribed. All TB drugs are many a times not available in government hospitals.

MRs help in continuous medical education of doctors. Doctors agreed covertly or overtly that the incentive policy of pharmaceutical companies is very unethical and it is so much embedded and deep rooted in the system that it is difficult to avoid or ignore it. As a result, doctors must preserve their reputation in the marketplace as well as with MR of other companies, as no one in this business is a friend or adversary. Overall, it is understood that it is difficult to prescribe ideally and ethically. Doctors have to go with the trend of the market to be in the system.

Almost all the doctors and MRs agree that a doctor learns from the MRs and hence they have to listen and meet all MRs. They agreed that they are very busy and do not have much time to update themselves on new information and knowledge on drugs through self-study on internet. This fact shows how lack of time and busy schedule makes a doctor so much mechanical and dependent for knowledge from MR. The MR sometimes exploit the doctors by giving him unauthentic study reports and half information about the drug to get prescription generated from the doctor. The doctors do not even check such information on google due to lack of time.

Thus, it is necessary to rethink and detangle the relationship between doctor and pharmaceutical companies.

Despite strict regulations of MCI (National Institute of Health and Family Welfare [NIHFW], n.d.) against gifting practices, everything continues as there is no strict implementation.

4.9 Impact of Market on Nature of Practice

The demand for western medicine is more in Bihar in comparison to the other indigenous medicines like ayurveda and homeopathy. As mentioned, the use of

different sources of health care according to NFHS-4 (International Institute for Population Sciences (IIPS) and ICF, 2017) in Bihar use of western medicine in public sector is 22.2 percent and in private sector is 73.7 percent. The rural population is more dependent on private sector than urban population. The doctor population ratio in Bihar is 1:17,685 (Press Trust of India (PTI), 2018) whereas the national average is 1:11,039 (Central Bureau of Health Intelligence [CBHI], 2017). There are 10 lakh registered doctors in the country whereas the number of registered doctors in Bihar is only 40,043 (CBHI, 2017; PTI, 2018). There are very few MBBS-trained doctors or doctors with advanced degrees in Bihar. Thus, there is a huge gap of trained medical practitioners in Bihar which is filled by other practitioners, who may be indigenous practitioners or quacks.

MR5 informed that at certain places the allopathic practice of a quack is more in demand in comparison to the trained MBBS doctors, as these quacks give high dose medicines to the patients so that they get well quickly. The patient's regard such quacks as good doctors and prefer going to them as they reduce their suffering quickly.

The village people have a high respect for western medical practitioners even if they are quacks and they trust such providers a lot as they have low fees and they give immediate relief to the patients by giving high dose of medicine. On the contrary the trained MBBS doctors who are mostly found in urban cities start with a low dose of first line of treatment of any drug and gradually move to the higher dose if the patient do not get relief. It is observed that for a patient his literacy, the expenditure in the treatment of a disease, as well as the immediate relief are major factors for choosing a practitioner. As most of the people especially in the rural areas are poor and illiterate therefore, they want to get well soon with minimum expenditure so that they do not further lose their working days.

In a state like Bihar where majority of the population live below poverty line, there is a huge dependence on private practitioners mostly quacks who provide them low-cost health care. However, this low-cost health care turns out to be costly and dangerous many a times as evident from the following instances:

A woman P12 belonging to scheduled caste in Hussepur Village had a paltry income of Rs 150 per day by working in the agricultural fields. She informed that she borrowed Rs 5000 from the money lender of the village for the treatment of her husband who succumbed to some cardiac problem. She borrowed money at the interest of Rs 20/day. She further informed that whatever little land she had, she lost in paying off the debt as she could not pay back the debt amount. As she is illiterate, she doesn't even know how much her debt was. She now lives on a very small piece of land in a thatched hut, with very few belongings in the hut. She said that she doesn't have money for the treatment of her fifteen-year-old daughter who is under mental shock of the early and sudden demise of her father (Singh, 2005).

The vicious cycle of poverty, illness, and financial burden for the poor never ends. It's also been discovered that, as a result of ineffective therapy, not only does the iatrogenic effect of medicines accumulate, but drug resistance to many diseases increases. This further complicates and makes it expensive to treat the disease, which in effect results in the vicious cycle of poverty and illness.

According to residents of Hussepur village in Saran district, basic causes of mortality for the poor include stomach infection, incorrect treatment, a lack of money, and accidents. Even basic treatable ailments can result in death due to erroneous diagnosis by local non-medical practitioners. In the case of a woman- P13's husband, for example, this truth is very evident (Singh, 2005)

Woman P13, belonging to schedule caste is a widow and is 43 years old living in Hussepur village. She has six girl children. She informed that her husband died of a knee infection that could not be correctly diagnosed by the village quack. Withing 2-3 days his infection got worse and by the time he was taken to the nearest PHC in Marhowrah, he succumbed to his illness. She is also in heavy debt of the money lenders, and she is not aware of the amount as she is illiterate and the account of her debt is kept by the money lender himself.

MR5 informed that *while working in the field he observed that a woman was suffering from arthritis since last seven to eight years. She was prescribed painkiller by the local healer of her village, which she took for 4-5 years. Due to continuous intake of pain killers her liver got damaged and finally she went to a trained western medical*

doctor for treatment. He further informed that *a Zarrah in one of the villages in western Bihar, cut the infected finger of a patient with a hex saw and put about two percent of Mox capsule powder on the cut potion of the finger. Mox capsule is an antibiotic and is taken orally as a treatment of bacterial infection, however he used to put the powder of the capsule in the cut wounds to heal them.* Thus we see that village quacks find new ways of using the medicines which are usually not known to the pharmaceutical company or the western medical doctors.

MR5 continued and said that *in another case there was a person with paralysis. He was prescribed clopitab medicine of 300mg by a quack.* He explained that, *Clopitab is a blood thinner and usually 150 mg is prescribed by trained doctors to patients with cardiac or stroke problems.*

In another example 20 mg of Statin medicine is prescribed to patients having cardiovascular problems, however a quack used to prescribe 40 mg of it. The patients get well quickly with such higher doses of medicine; however, they would suffer some side effects in the long run, said MR5. MR5 told about many other examples of misuse of medicine by quacks in which another striking example is that *of a child living in Jahanabad district of Bihar. He was very thin so his parents requested a quack to make him fat and healthy. The quack prescribed betnisol – a cortico steroid to the child, so that he becomes fat. When his body swelled disproportionately his parents took him to a trained western medical doctor. From the doctor they came to know that the medicine prescribed by the quack was not good.*

Though western medicine reaches the villagers through local healers, who may be competent and accredited or quacks, and are regarded as the lifeline of the village health care system, the villagers may pay a high price for it at times due to their lack of knowledge. Increased iatrogenic impact, increased drug resistance, loss of life or permanent impairment of the body, or complexity of uncomplicated illnesses owing to incorrect treatment are all examples of the harm they produce. MR5 said that, *the quacks use heavy doses of drugs and more of injections so that their patients recover soon. They then boast to the patients, that they are a better doctor in comparison to any other doctors as they treat patients quickly. They mostly treat low profile patients who are poor or have less paying capacity. The quacks have low confidence as they have little knowledge of western medicine, so they are afraid to write new drug. They*

often work with some MBBS doctors and daily or once in a week they sit with the doctor and learn about medicine and local health. They refer the serious cases to their doctors. Hence quacks act as a customer or referral point for senior doctors. They very frequently use antibiotic. They use injections even if the illness can be treated with tablets. They write the drugs of propaganda companies more.

Illiteracy of the people is another problem in accessing health care. As they are not aware of the iatrogenic effect of medicine and they demand medicine and injections to get well quickly. The poor population are pushed into poverty every year due to money that they borrow from money lenders for their treatment and they fall into a debt trap. They keep repaying the money lender for long time, may be their lifetime, to get out of the debt trap. Irrational drug use and multi drug resistance is on rise due to unrestricted pharmaceutical promotion.

After a few years of experience and obtaining a training certificate from a training agency, a male nurse or compounder can practise western medicine. It is tough to tell whether someone is an MBBS or a nurse by looking at them at a clinic, informed an MR.

The majority of the local indigenous practitioners change to western medicine and are trained frequently by MRs. In Hussepur village, the demand for western medicine is so strong that a trained BAMS doctor who couldn't make enough money practicing ayurveda, in contrast to the village's other western medical practitioners, has switched to allopathic practice. Chandra and Patwardhan (2018) found that the AYUSH doctors acquire training in allopathic doctor’s clinics and later they join smaller hospitals on cheaper salaries to assist western medical doctors or start their own independent practice. Such people are accessed by rural poor due to unavailability of western medical doctors.

According to studies, rural practitioners treat their patients using a mix of western and indigenous health-care systems (Djurfeldt & Lindberg, 1975). Even in the field, in the Hussepur village, individuals have various degrees of faith in both systems, depending on the type of illness they are experiencing. For example, a child who had a skin ailment and developed little boils all over his body, underwent both herbal and allopathic treatment. The local allopathic quack specialist in skin diseases, was seen

curing him. At the same time, the child's mother applied neem paste, a herbal remedy, to the wound, hoping that the combination of both systems of treatment would quickly heal her child's infection (Singh, 2005).

The retailers sell or substitute the prescription of doctors by drugs in which he gets larger profit. Many people consult chemists or retailers for their health problems and take medicine directly from them instead of consulting a doctor (detail is given in chapter 6).

Rural medical practitioners, according to Rao and Rao (2017), have a high level of respect among rural inhabitants and urban slum dwellers. They are self-styled practitioners who, despite their lack of knowledge, skills, and qualifications, are thriving and filling gaps in the public health system. The relationship between pharmaceutical companies and quacks is the worst since they are low-cost consumers of enormous quantities of drugs for many unfortunate individuals.

The researcher also observed that the pharmaceutical companies by their drug promotion strategies create more of unqualified medical practitioners to address the local needs of rural and urban areas of Bihar. On one hand it is good as they fulfil the need of a practitioner and on the other hand it is creating more of inequality through OOP expenditure on medicines. People land into debt traps due to expenditure on health. Due to the pharmaceutical promotion the consumption doctors have increased who have their own pharmacy in their clinics, to earn more profit from the sale of medicines as well. Such doctors must be having an inclination to prescribe extra medicine or costly medicine which increases the OOP of the patients, which pushes them further down in their socio-economic status.

MR4 "pehle khujli ki dawa jyada bikti thi par ab kam bikti hai" (earlier medicines for skin diseases and itching were sold more but now it is less.) Now medicines for life style diseases, mental depression, and diabetes are sold more.

There is a change in the disease trend as well and there is an increase in life style diseases.

About difference in the nature of practice between government and private hospitals, Cardiologist Dr1 said that, *in private hospitals if a doctor knows that the patient is not*

going to live, he will put him on ventilator and pace maker and charge 3-5 lakh extra on a dead body. Such cases never happen in government hospitals. In commercial hospitals there is an attitude that-'marij ke paas jitna paisa hai nikal lo'. (Extract as much money as you can from the patients). The private doctors write investigations which are not needed. Sometimes an operation is not required but still the doctor will perform it. He said that, *ideally if one cannot serve patient then one should not cheat. However, in reality this does not happen. Sometimes the hospital asks their doctors to advice patients to get tests done in the same hospital whereas such tests may be done at a cheaper rate outside. For example, Thyroid test is of Rs 535 in a hospital and of 175 in private lab. Sometimes the doctors get some benefits for sending the patients to private labs. Now a days most of the drugs are present in government PHC. However, if a government doctor has to prescribe a drug that has to be taken from outside the government pharmacy, then they prescribe costly drugs to oblige MRs*, said Cardiologist Dr1.

Regarding the lab tests MR4 said that, *his cousin brother is a junior doctor. So, people from pathological labs come to him to give commission (bribe) and ask him to refer patients to their labs. "ab bina test ke doctor log ka treatment nahi hota hai, pehle ka doctor log bina test ke treat kar deta tha" (Now doctors do not treat without the diagnostic tests, earlier doctors used to treat without the help of diagnostic tests). Irrelevant test is prescribed which is not required. Frequency of same tests increase. "ek test kaun sa bimari hai pata karne ke liye aur dusra test bimari theek hua ke nahi, ye pata karne ke liye"(one test is done to diagnose a disease and another test is prescribed to understand whether the disease is cured or not).*

Unethical practice in government hospitals is less in comparison to private hospitals especially corporate hospitals. However, many of the government doctors also want to do private practice. Cardiologist Dr1 working in a government hospital explained this as, *in medical profession not much importance is given to government service, particularly in Bihar as pay scale is very less, work load is high, political interference is high, local MP, MLA disturb a lot. "wo log unethical kaam karwana chahega"(they (MP, MLA) would get unethical work done) so many doctors avoid it. From security point of view nothing is provided to doctors. Anyone can come and say*

anything to the doctors. They even indulge into "mar peet" (fighting). In private practice or hospitals doctors can get body guards.

Regarding the marketing practices of MRs Cardiologist Dr2 said that, *the MRs follow aggressive marketing strategies in private institution, however this is not so much in public institution. Costlier drugs are prescribed in private institution. In public institution cheap drugs of better efficacy are prescribed keeping in mind the socio-economic status of patients.*

So as the doctors and MRs talk about the malpractices in western medicine, they mean to say that such malpractices are rampant and spread everywhere- right from diagnostic lab referrals, irrelevant tests prescription, increasing the stay in the hospital to increase the cost of care, irrelevant medicine prescription etc. Such malpractices are more in the private sector as they have lesser regulation and control. Amidst such rampant medical malpractices people of Bihar are more dependent on private hospitals and clinics and on quacks, as the public health services are in a deplorable situation in Bihar. Thus, in such an adverse situation the deplorable state of poor patients can be imagined.

4.10 Regarding Generic Drug and Branded Drug Prices and Prescription Based on Satyamev Jayate Episode

Out of the total money spent by a patient on his treatment, about 70% of money is spent on medicines. An episode of "Satyameva Jayate (SJ)" meaning "Truth is always victorious" a Television (TV) program aired on various channels like star network or DD national, was hosted by Aamir Khan. A team from SJ took prescription of certain essential medicines and bought it from a pharmacy store which costed about Rs 2151 and the generic versions of the same set of medicines costed 354/ . There was a huge difference between the branded medicine and the generic medicine of the same salt combination. The program aired the interview with Dr. Samit Sharma, a retired IAS, who is known for his work on access to low-cost generic medicine during his service in Chittorgarh, Rajasthan. Dr. Sharma said that every day some people in India die due to incapacity to buy costly medicines. Some medicines are 2 -50 times costlier than its generic counterpart. He further added that more than 40 crore people can not afford to eat two meals a day. Hence, they do not have money to buy medicines.

According to WHO, about 65% of the Indian population lack regular access to essential medicines. The doctors also under the pressure or lure of the pharmaceutical marketing tactics prescribe branded medicines. The patients on the other hand do not even know that its generic is cheaply available and they can buy it from any shop. He further informed that, diabetic medicine- one branded tablet is sold in Rs 117/ and its generic form of 10 tablets is sold in Rs 1.95/. Both the medicines are same however there is huge difference in their cost to the consumer due to the marketing and profit margin. The actual production cost, manufacturing, packaging, transport, retail margin together will cost Rs 1.95/. On one of the medicines used in blood cancer, Dr Sharma said that one packet of such medicine in the market cost Rs. 1,25,000 which last for a month. Its generic is sold in Rs 10,000, another company sells it in Rs 8800/, and another sells it in Rs 6500/. Therefore, in Rajasthan they are distributing such essential medicines at the lowest cost.

The question is why doctors do not write the generic name on the prescription. Dr. Sharma during the interview in the program said that, Medical Representatives pressurize and tempt the doctors to write the branded drugs of their medicine. This is the biggest reason that increases the cost of the medicine 5 - 50 times. To the Rajasthan Medical Service Corporation (RMSC), all branded companies give medicine at the lowest price whose market rate otherwise is very high. He said that Rs 70/ medicine is given to the RMSC for Rs 5, Rs 30 medicine is given in Rs 2. Therefore, it is evident that low-cost medicines even by the prominent pharma companies is a possibility provided the huge expenditure on marketing and promotion is curtailed. He further said that, India exports generic medicines to the tune of 45,000 crore. Such generic medicines are not easily found in India. In terms of resistance faced, he said that there are lot of threats involved. Drug Mafias are involved in this.

He shared an anecdote of a poor maid Lakshmi who used to work at their house. Her son used to come with her and play with Dr. Sharma's child. Once when they came back from vacation, Lakshmi came alone without her son Raju. Dr. Sharma asked her about her son. She said that Sir when you went, then my son got *ulti dast ki bimari* (diarrhoea). When she went to buy the medicine, the chemist told her that it will cost Rs 400. She said that she doesn't have that much of money and she requested a lot to the chemist to give her the medicine but of no avail, and her son kept having loose

motion and he succumbed that night itself. The actual cost of such medicine is Rs 1.50- Rs 2. If she would have got the medicine then her child would have been saved. Dr. Samit said that, after 65 years of independence if a child dies of Diarrhoea, then it's the most shameful thing to happen in a country. He said that, all the wrong that is happening can be controlled. No big factory has to be established or any major changes have to be done.

4.11 Covid-19 and Pharmaceutical Industry in Bihar

COVID-19 has had a big influence on the healthcare business, causing major disruptions throughout the supply chain, from raw materials to manufacturing and delivery. The global demand for medical ventilators has prompted manufacturers to increase production by 40% to 50%. The health-care industry was unprepared to deal with such a large-scale public health issue. As the epicentre of virus origin was China which supplies 60-70 percent of raw materials to the pharmaceutical industries in India, hence these companies suffered a lot. The supply chain balance was disrupted (Shah and Dey, 2021). With lockdown around the globe, almost all the countries were affected, and suffered heavy losses which further led to loss of jobs. The pharmaceutical industries too incurred heavy losses however, the Indian government quickly facilitated them for self-reliance, and the Indian industries competed with global pharma companies for vaccine development and manufacturing (The Science World, 2020). The pharmaceutical companies gained heavy profit in the subsequent years and the price of drugs soared abnormally high, during the first and second wave of the pandemic in India.

The pharmaceutical industry in Bihar suffered a setback during the first lockdown[26] and the consecutive lockdowns due to covid-19 in the year 2020. MR5 informed that *they could not go out for their daily visits to the doctors and chemists, however their business continued due to good personal relations. As their company was big so in spite of the loss in sale, their salary was also not cut*. However, due to the pandemic the pharma industry had to suffer production loss, revenue loss and employment loss.

[26] During the lockdown in 2020 and 2021 to reduce the spread of covid-19 the migrant workers of Bihar suffered a lot as there was complete lockdown of the business and transportation. Only manufacturing and transportation of essential goods were allowed. Hence the migrant labourers not only lost their jobs, daily wages, they had to return on foot to their homeland. Many died on their way home, those who reached back their home in Bihar had to suffer due to lack of resources. Mental illness problems and domestic violence increased.

Some of the manufacturers focussed on producing pandemic related items like masks, sanitizers, PPE kit, ventilators etc. to pull them out of the difficult situation of financial loss in the year 2020. According to a report by Kunnathoor (2020) the state government of Bihar does not support the local pharmaceutical entrepreneurs, that is why they suffered a lot during the pandemic.

Covid -19 led to social economic and health crisis in Bihar. It exposed the already unprepared and dilapidated public health system. MR5 said that *whoever went to hospital suffered more and death was certain for them. Those who stayed at home, their survival chances were more*. During second wave hospitals had run out of their in-patient admission capacity. Many people died due to lack of oxygen, medicines and medical facilities in the hospital. People living in remote areas in Bihar did not have ambulance transportation facilities to transport the serious cases affected by Covid-19 to the district hospitals. The essential medicines were selling in black market in Delhi at a much higher price than usual and were not even available everywhere particularly places where paying capacity was assumed to be low such as Bihar.

As per newspaper reports most of the medicines, equipment's and covid tests were available at much higher prices leading to large scale suffering in the villages of Bihar. TV and newspaper report during second wave in 2021 showed dead bodies flowing in the river Ganga which pointed out the grim situation of people who could not even afford last rites of the dead and were in such dire situation that they resorted to throwing the dead bodies of their loved ones into the river.

4.12 Pharmaceutical Regulation

The pharmaceutical industry has gone through a tremendous change in the last 20 years due to improved supply chain management, improved information technology applications, better drug discovery mechanisms, improved clinical trials etc. However, since there are multiple ministries involved in the regulation, control and growth of pharma industry, any attempt to improve policy, which can help reduce the prices of drugs and better regulation of pharma, takes long time and may not even pass through. India's pharmaceutical regulation is in the hands of three ministries viz. the Ministry of Health & Family Welfare, the Ministry of Chemicals & Fertilizers and the Ministry of Commerce. All the ministries have different goals for the

pharmaceutical industries. The Department of Pharmaceuticals, under the Ministry of Chemicals and Fertilizers and Ministry of Commerce aims to boost the growth of pharma business while the Ministry of Health and Family Welfare aims to oversee that the drugs are distributed at a low cost to the public in such a way that it does not affect the growth of the pharma industries. Such a dichotomy of aims and responsibilities of Ministries tends to bring out national policies which are biased toward pharmaceutical industries. For example, the National pharmaceutical Pricing Policy is critiqued to be more oriented towards the growth, development and profit of the pharma industry rather than the people. The Central Drugs Standard Control Organisation (CDSCO) under Ministry of Health and Family Welfare (MoHFW), Government of India (GOI), provides general information about drug regulator requirements in India. The National Pharmaceutical Pricing Authority (NPPA) is a non-statutory body under the Department of Pharmaceutical (DoP) in the Ministry of Chemicals and Fertilizers which regulates the pricing of drugs to ensure accessibility of medicines at affordable prices to people.

The National Pharmaceutical Pricing Policy (NPPP) 2012 is envisaged by the Department of Pharmaceuticals to regulate and control the prices of drugs. The policy envisages control over prices of drugs on the basis of companies' turnover and its market share (The Gazette of India, 2012). In India there are small number of large companies which dominate the market through oligopolistic market practices. Given the information asymmetry between the consumers, doctors and industries, the competitive market approach with complete consumer sovereignty, doesn't work here to reduce the prices of medicines. The grip of these influential companies on the market as well as on policy maker is very strong, and combined with their aggressive marketing strategies, the supplier induced demand pushes the high-priced medicines in the market (Selvaraj et al., 2012). Thus, the market-based pricing (MBP) mechanism as given in National Pharmaceutical Pricing Policy (NPPP) 2012 does not work at the ground level to lower the pricing of the drugs. The market based political economy approach tends to compromise with the healthcare as a fundamental right of the people.

Ministry of Health and Family Welfare (MoHFW) is responsible for overseeing the registration of pharmacists and practitioners. There are regulations for licensing of a

pharmacist and practitioners. However, it is observed that some pharmacists do not hold license. There are various kinds of practitioners in the market who do not have adequate qualification for getting registered as a practitioner. Anyone can buy medicines from the pharmacists without the prescriptions. There are often self-prescription of schedule H drugs which ideally require the prescription of a qualified medical practitioner. The Drugs and Cosmetics (D&C) Act, 1940 regulates the manufacture, distribution and sale of drugs in India. The schedule M of the D&C Act specifies the basic minimum facilities under which the drug can be manufactured in a factory. The Pharmacy Act (1948) is meant to regulate the profession of pharmacy in India (The Indian Pharmaceutical Association, n.d.). However, there is little evidence that any guidelines are followed or disciplinary action is taken against any infringements (Jeffery & Santosh, 2009)

Jeffery and Santosh (2009) argue that a large gap exists in pharmaceutical regulation between what is on paper and what is being implemented. Medicine that enters into Indian market needs approval of Drugs Controller General of India (DCGI) and State Licensing Authorities (SLAs) issues manufacturing licences in India. However due to inefficiencies and varying standards of production the manufacturers get their new combination of medicines approved by less strict SLAs. District Health officers and drug inspectors of the state are responsible for implementing regulations on medical practitioners, pharmacist, drug wholesalers and consumers.

Under Indian Medical Council (Professional conduct, Etiquette and Ethics) Regulations, 2002, a physician is required to uphold his responsibility of caring for the sick and any reward or financial gain should be subordinate in consideration. No person other than doctor recognised by Medical Council of India (MCI) or state medical councils is allowed to practice Modern system of Medicine or Surgery. “A person obtaining qualification in any other system of medicine is not allowed to practice modern system of medicine in any form.” (NIHFW, n.d.).

Every physician as far as possible should prescribe the generic name of the drugs and shall ensure the rational prescription and use of drugs.

The Medical Council of India, Amendment Notification dated December 10, 2009 clearly and unambiguously prohibits the medical practitioners from taking any gifts or

incentives of any kind from pharmaceutical industry under the clause 6.8 (The Gazette of India, 2009). It states that a medical practitioners shall not accept any gift, travel facility, hospitality, cash or monetary grants from any pharmaceutical or allied health care industry or their representatives. It has been observed in the field that such guidelines are not followed, as MR5 interviewed in 2020 said that *companies now have standard operating procedure (SOP), so now incentives are given under the table.* He said, *"das saal pehle len den khul ke hota tha, ab har cheez hota hai per ab chhupa kar hota hai" (ten years ago the incentives and gifts were given openly but everything happens but very secretly).* He further informed that small companies still deal in cash.

The Uniform Code for Pharmaceutical Marketing Practices (UCPMP), as prepared by Department of Pharmaceuticals guide the marketing practices of pharmaceutical companies. This Code clearly mentions that medical representatives must maintain a high level of ethical conduct and comply with all relevant requirements of the code. It further mentions that MRs should not give any gift or benefit of any kind to the medical practitioners or distributer, wholesalers, retailers etc. for prescription of drugs and promotion of their sale. The Pharmaceutical companies are directly responsible for any unethical behaviour of any employee including medical representatives (Department of Pharmaceuticals, 2014). However, such self-regulatory mechanisms of pharmaceutical industries are not working on the ground, as observed during the researcher's field work. India's pharmaceutical industry is third largest in term of production and 14th in terms of value. However, the system of pharmaceutical regulations are partial and ineffective.

4.13 Discussion and Conclusion

As Geest et al. (1996) suggest, the pharmaceuticals have a more meaningful and social life than their deaths. The pharmaceutical companies spend huge amount of money in marketing of their products. The marketing of their products is done in two ways – 1) by direct-to-consumer and 2) by generating prescription for the products. The second way of marketing i.e., prescription generation for their products is done with the help of medical representatives (MRs). Sale through prescription generation is an inevitable mode of marketing for the pharmaceutical companies as according to Drugs and Cosmetics Act, 1940, schedule H drugs can only be sold through

prescriptions. Thus, doctors or prescribers are effectively the gatekeepers of medicines' sale. Thus, prescription generation is one of the major strategies of marketing of the pharmaceutical companies. It ensures that the drug manufactured at the manufacturing unit is finally sold. Hence the pharmaceutical companies lay down very detailed strategies for increasing the prescription for their drugs. The assumption here is that - the more the prescriptions are generated the more the drug is sold.

The pharmaceutical companies are interested in generating the prescription once the drug is approved by the competent authority and they do not worry about the efficacy and utilization of the drug by the end users who actually pay the price of the drug.

Based on the therapeutic value, the drugs are divided into various divisions. Each drug division employ a group of MRs who are posted in such a way in the state of Bihar that they cover each and every nook and corners of the state where a prescriber of their product is located. These prescribers may be MBBS or specialized doctors or quacks or indigenous practitioners prescribing western medicine. Bihar, West Bengal and Orissa belt and North eastern states provide a very huge market for these pharmaceutical companies. The pharmaceutical companies earn huge profit through sale in volumes of their drugs. As India and specially these regions have a price sensitive market, so pharmaceutical companies reduce the price of their drugs and earn profits through selling large number of drugs. The reason for this is that people in these belts are poor and illiterate. The access to public health services is very poor and the quality of care is dismal.

Thus, the life stage of medicine from pharmaceutical manufacturing unit to the prescription by the doctors is very important from pharmaceutical companies' profit point of view. Therefore, they have a very efficient drug supply chain to ensure that the drug prescribed by the prescribers, reaches the patient and is bought by them**.** For this they ensure that the drug is in the close vicinity of the patient to whom the drug is prescribed and the nearby pharmacy stores keep stock of the medicines, so that the prescription does not miss the sale of its drugs. Thus, through the medical prescription they pull the demand for their products. In the private sector the MRs play a very major role in prescription generation and in ensuring an efficient drug supply chain.

It is interesting to note that pharmaceutical companies consider prescribers, -doctors and quacks as their customer and not the patients who actually buys the medicine and consume them. For pharmaceutical companies, whoever prescribes their drugs is their customer. They also do not make any difference between an allopathic doctor, Ayurvedic Vaidya, Unani Hakim, unlicensed practitioner or quacks, etc. they promote their drugs to anyone who prescribes them. Thus, for increased prescription generation the MRs map each and every prescriber in his work region and tries to form a good rapport and relation with them. Thus the pharmaceutical drug forms the reason for relation between MRs and prescribers. The prescribers, MRs and retailers work in a symbiotic relation to increase the sale of a pharmaceutical drug.

However, nothing is free. So, what they invest in doctors they get it back. Doctor pays for the goods received from the company by writing prescription.

The MRs are assisted by an army of people working at the background to equip them and train them with all the necessary skills on each and every aspect of marketing to generate prescription from the prescribers. The MRs are trained in– drug use, skills to understand their customers, product knowledge, good communication skills, smart personality and appearance, good in local influence and local language etc. The MRs visit the doctors frequently and at times daily. They incentivise the retailers, and the doctors to ensure continuous increase in prescription of the drugs. The companies fix the sales target for their MRs and support them and incentivize them to achieve their target. The policy of frequent visits to prescribers, small gifts containing the drug and company name, scientific study or information on drug are used by the companies to influence the doctors or prescribers. In the presence of tough competition between various MRs of different pharmaceutical companies for the same salt, the companies use heavy incentive policy to break their prescribers or doctors. A complete profile of the doctors and other prescribers of Bihar is maintained by the company. Thus, sale through prescription generation becomes very unethical in the presence of tough competition between various companies producing same salts with different names. The small companies incentivize the doctors through directly giving cash and the big companies have a more sophisticated way of marketing their drugs and they give gifts of higher value to the doctors. The small companies mostly target the young doctors or village quacks and the big companies target all types of prescribers.

With the macro level policy changes in 1970 (change of patent regulation and legally selling less expensive patented drugs) and in 2005 (WTO TRIPS agreement where reverse engineered patented drugs were not allowed to be sold and allowing sale of generic drugs patented before 1995) supported and boosted growth of the domestic pharmaceutical industries in India. Thus, the increase of domestic and global companies in the Indian market increased the competition for drugs' sale in the Indian market. In Bihar which provided a very profitable market to these pharmaceutical companies, the competition increased and so did the unethical marketing practices.

This was the reason for pharma companies working in Bihar to change their marketing strategies and increase the value of giving incentives to both MR and doctors to meet with the cut throat competition with both big and small pharma companies. The change in the culture of incentivization in turn changed the attitude of the doctors as well. They also became greedier and demanding for the high value incentives.

The policy level changes brought in a change in the prescription generation strategy at the grass root level. After nineties the competition between the pharmaceutical companies increased and they adopted vehement marketing practice wherein gifts of very high value started being given to generate prescription from anyone and everyone. The unethical marketing practices promoted more of unethical prescriptive practices. The high incentive policy of big pharmaceutical companies has corrupted the doctors of Bihar and they negotiate with the MRs for writing prescription. Neither the prescriptions are free nor the incentives or the gifts are free. However, the pharmaceutical companies negotiate a higher profit in this exchange. They negotiate prescription generation of higher value than the higher value of gifts given by them to the doctors. Thus, the pharmaceutical drug sale creates a market situation or condition in such a way that no doctor can escape entering in the unethical prescriptive practices.

As powerful "technical device and cultural symbols" (Geest et al., 1996) medicines impact on people's life in a number of ways. "*They acquire the status of a force or a tool in society. They are not only a product of human culture but are also producers of it. They direct peoples thought and actions and influence their social life"* (Geest et al., 1996). They are the reason for forming certain social relationships that is the

relationship between an MR and a doctor, relationship between a doctor and a patient, relations between chemists and MR etc. They are a powerful source for capital accumulation for pharmaceutical industries and in the process impact on the economic, social and political life of the people where they live and are transacted (Geest et al., 1996).

Thus, we see that medicine direct people's thought and actions. The pharmaceutical companies produce a culture of incentive giving and taking back in the form of prescription. The culture is such that hardly any doctor is left out of this gift taking prescription writing practice. It is needless to say that the 'patient' the actual end consumer of medicine does not have any say in the choice of medicine until he or she takes self-medication. The choice of medicine is done by the doctor or anyone who prescribes medicine for the patient. Amidst the pressures of generating prescription for the pharmaceutical companies; doctors still try to balance their prescription habit depending upon the patient's socio-economic background as well as the maintaining the professional standards of treatment. The field observation in Bihar demonstrated that there is immense pressure on the doctors from both the sides in the market-a) from the pharmaceutical company's side with their rigorous daily visit and marketing tactics as well as b) from the patient's side many of whom are economically weak and adding a costly drug or extra drug in his prescription would dig a bigger hole in his wallet and which would push him further into poverty. The incentive policy of companies is so alluring that it is difficult for the doctors to say no to it. Most of the doctors take the attractive policy offered by companies and compromise on patient care and welfare. According to MRs, Bihar has a large number of doctors who negotiate for high value gifts. As a result, it's logical to expect that unethical prescriptive behaviors are more. The majority of doctors are clustered in and around cities. As a result, unethical prescribing practices are more prevalent in cities. Nonetheless, as the majority of Bihar's population is reliant on quacks, the magnitude of unethical prescriptive medicine and its harmful impact on the patient is more on rural people.

Thus, the prescribers or doctors most often choose medicines based on the market forces rather than on the therapeutic concept of medicine or based on the standard treatment guideline of the essential generic drugs. It is a paradox that the patient, who

ultimately purchases the medicine and is the primary consumer of pharmaceuticals, is overlooked in marketing strategies. Despite the fact that the patient pays for the company's expenses and profits in the form of drug prices, which he purchases on the advice of a doctor, he is never given importance in the pharmaceutical supply chain. The patient is completely unaware of the whole background process taking place to make him pay for all the expenditure of the pharmaceutical companies. The whole system is unethical as it doesn't involve the consent of the patient who pays for the whole process. Not only that the patient pays more for the medicine, he sometimes has to bear the brunt of side effects of irrational dosage and medication.

The unethical prescriptive practices negatively impact the nature of western medical practice in Bihar. Bihar being the third largest populous state in India, and one among the economically weaker group of state, has a very large percentage of poor, illiterate and sick population. The doctor population ratio being very less and skewed more towards few cities and urban regions of Bihar, the population is largely dependent on quacks.

Heavy dependence on private health services further deteriorates the health of the poor through OOP (Baru et al., 2010). Bihar shows low level of utilisation of government facilities by rich or poor. The poor suffers more by going to the private sector for health care. Studies have shown that in most parts of developed and in developing world OOP expenditure in government and in private sector is often high and is detrimental for the poor (Mclktyre et al., 2021; Kumara & Samaratunge, 2019; Rahman et al., 2013; Baru et.al, 2010). Drugs or medicines account for the largest share of total health expenditures in the poorest and wealthiest quintiles (Ulep & dela Cruz, 2013) Medication nonadherence is linked to high out-of-pocket costs, which can thwart doctors' efforts to deliver high-quality care (Alexander et al., 2003) Furthermore in India, in the years 2011–2012, OOP payments for pharmaceuticals pushed 38 million people into poverty. Cancers, traumas, cardiovascular diseases, genitourinary ailments, and mental disorders are among the primary causes of high OOP expenditures (Selvaraj et al., 2018).

Amidst such a scenario, the unethical incentive practices forces prescribers to either over prescribe or prescribe costly drugs. The exploration of the market of medicine reveals that the pharmaceutical companies interfere with the real and cost-effective

need of the market and complicate the nature of western medical practice further. As the people of Bihar are battling for the improvement in their health, health care access and expenditure, the unethical intrusion of the pharmaceutical companies and their marketing practices complicate their situation further. Sometimes the half-trained quacks through their field experience and little knowledge bring out new uses of drugs which are not scientifically known and are harmful for the patients in the long run. The quacks who are trained and promoted by MRs sometimes prescribe higher doses of medicine to retain their patient's trust. The poor public health care facilities, do not motivate the use of indigenous medicine, rather the promotion of western medicine further pushes the poor population to private sector, which further increases their out-of-pocket expenditure especially on medicine. The dependence on quacks for low cost of health care, sometimes becomes dangerous for the people. The private health care practice has lesser regulation and control and the unabated aggressive marketing practices of pharmaceutical companies in private sector further complicates the health and socio-economic situation of the poor population of Bihar.

The patient is not aware of what is happening behind the scene (that is behind the prescription practices of doctors) and he has no control over it. Patients is the actual buyer or customer of medicine. The doctors, who are actually the middle man between the companies and patients get benefitted from both the sides. He gets incentives of various kinds from pharmaceutical companies and consultation fees from the patients. The patient does not even know of extra burden added to his pocket by the doctors as either literate or illiterate they have no knowledge of medical field and in Bihar most of the population are poor and illiterate. The patients suffer due to overdose of medicines or iatrogenic effect of it. Many a times they suffer financial loss in a number of ways- loss of daily wage, out of pocket expenditure on medicines, and sometimes pushed below the poverty level etc. The patient is not in a position to file any case in a consumer court, against any of the parties as the intent of practice is difficult to establish and also no one wants to spend their time in the costly unending judicial process. Patient are not even aware of their own rights. Such a market system is creating more of inequality and every year millions of people are pushed below the poverty line in which the people keep drowning down in the vicious cycle created by the market.

It is said that doctors, patients and pharmaceutical companies work in a free market. The patient has the right to get the best available drugs and treatment standard, however he is not free to choose the drug himself. He is dependent on doctors. Patient wants to get well and thus takes the help of doctors to choose products for him as he has absolutely no knowledge of pharmaceutical drugs and its pharmacology. This dependency is exploited by doctors and pharmaceutical industries in the name of free market. Health is not assumed as a natural human right rather it's a consumer product to be sold.

The recent reform proposals of health insurance by Ayushman Bharat does help a few but due to its inability of universal coverage many are still out of the ambit of coverage. Such Insurance schemes reflect the insurance based private health system of US which is highly inefficient to give universal health coverage to its people. It creates more of the inequality than of equity. It can be said that promotion of insurance-based sector is nothing more than a continuation of the incrementalistic market-based agenda that prioritises profit over equity and compassion. (Rylko-Bauer & Farmer, 2002). The researcher seconds the views of Rylko-Bauer and Farmer (2002) who views healthcare as a right and not as a commodity.

A pharmaceutical company is not only a vital and significant aspect of a country's economy, but its goods are also actively sought by the public in order to achieve excellent health. A pharmaceutical firm relies on the marketing of its products to generate more wealth, which it then invests in research and development to develop new drugs. However, a cap should be fixed as to how much profit they can make on a particular drug. These companies, according to Applbaum (2006), promote their medicines through 'pull' or 'demand' stimulation techniques, as well as improved disease knowledge through the creation of medical almanacs. Marketing through pull or demand stimulation strategy is problematic. It reduces the possibilities of free market for the people where they can make their own choices without any biases. Some other way of profit making should be looked at by pharmaceutical companies.

Prescription generation impacts people in a number of ways-

1) For health care many a times people have to borrow money on loan at a very high interest rate of more than Rs 100 per day which they are often not able to pay back as they are very poor. This further pushes them back into poverty.

2) Some of the quacks prescribe high doses of medicine as first line of treatment which are actually third line of treatment drugs. This further deteriorates the health of the sick and poor patients.

3) Sometimes extra nutritional supplements are given which is not required by patients and at the same time it is not harmful for the patient, but it adds to the cost of his out-of-pocket expenditure.

All this impacts negatively in a place like Bihar where majority of the population are poor.

There is a huge demand for trained medical practitioners in Bihar, which is filled by quacks or registered medical practitioners. At certain places people prefer such quacks more in comparison to trained medical practitioners as they give high doses of medicine with which patients get well soon, however estrogenically it is not good practice. People trust such providers a lot as they have low fees and they give immediate relief to the patients by giving high dose of medicine. It is observed that for a patient his literacy, the expenditure in the treatment of a disease, as well as the immediate relief are major factors for choosing a practitioner. As most of the people especially in the rural areas are poor and illiterate so they want to get well soon with minimum expenditure so that they do not further lose their working days.

Sometimes such dependency on quacks becomes very costly as they lose their near and dear once forever, enter into a debt trap for life long, thus there is further there is no scope for their socio-economic development. Even basic treatable ailments can result in death due to erroneous diagnosis by local non-medical practitioners. Sometimes we see that village quacks find new ways of using the medicines which are usually not known to the pharmaceutical company or the western medical doctors. Though western medicine reaches the villagers through local healers, who may be competent and accredited or quacks, and are regarded as the lifeline of the village health care system, the villagers may pay a high price for it at times due to their lack of knowledge. Increased iatrogenic impact, increased drug resistance, loss of life or permanent impairment of the body, or complexity of uncomplicated illnesses owing to incorrect treatment are all examples of the harm they produce. *Hence quacks act as a customer or referral point for senior doctors. They very frequently use antibiotic. They use injections even if the illness can be treated with tablets. They write the drugs*

of propaganda companies more. So illiteracy of the people is another problem. As they are not aware of the iatrogenic effect of medicine and they demand medicine and injections to get well quickly. Irrational drug use and multi drug resistance is on rise due to unrestricted pharmaceutical promotion.

The majority of the local indigenous practitioners change to western medicine and are trained frequently by MRs. AYUSH doctors acquire training in allopathic doctor's clinics and later they join smaller hospitals on cheaper salaries to assist western medical doctors or start their own independent practice. Such people are accessed by rural poor due to unavailability of western medical doctors. According to studies, rural practitioners treat their patients using a mix of western and indigenous health-care systems. The retailers sell or substitute the prescription of doctors by drugs in which he gets larger profit. Many people consult chemists or retailers for their health problems and take medicine directly from them instead of consulting a doctor.

They are self-styled practitioners who, despite their lack of knowledge, skills, and qualifications, are thriving and filling gaps in the public health system. The relationship between pharmaceutical companies and quacks is the worst since they are low-cost consumers of enormous quantities of drugs for many unfortunate individuals.

The researcher also observed that the pharmaceutical companies by their drug promotion strategies create more of unqualified medical practitioners to address the local needs of rural and urban areas of Bihar. On one hand it is good as they fulfil the need of a practitioner and on the other hand it is creating more of inequality through OOP expenditure on medicines.

Due to the pharmaceutical promotion the consumption doctors have increased who have their own pharmacy in their clinics, to earn more profit from the sale of medicines as well. Such doctors must be having an inclination to prescribe extra medicine or costly medicine which increases the OOP of the patients, which pushes them further down in their socio-economic status.

There is a change in the disease trend as well and there is an increase in life style diseases.

The private doctors prescribe tests which are not needed. The doctors are sometimes forced to cajole patients to get the tests done in the hospital itself, sometimes doctors get commission for referring a patient to a private lab. Frequency of irrelevant test prescription has increased.

In government hospitals the doctors are less paid so they are forced to do private practice to increase their income. In government hospitals too, the doctors are sometimes forced to do unethical work by the powerful bureaucrats or politician and the doctors do not have any safety from patients' family members who sometime out of emotion and anger get very aggressive and beat the doctors. Government doctors also prescribe costly medicines to oblige the MRs which the patient has to buy from the private pharmacy. Sometimes private hospitals extract money unethically from the patients in a number of ways, keeping the dead person in ventilator and not informing their family members to get more money, prescribe costly medications and tests etc.

MRs follow aggressive marketing strategies in private institutions, which is very less in public institution. So as the doctors and MRs talk about the malpractices in western medicine, they mean to say that such malpractices are rampant and spread everywhere- right from diagnostic lab referrals, irrelevant tests prescription, increasing the stay in the hospital to increase the cost of care, irrelevant medicine prescription etc. Such malpractices are more in the private sector as they have lesser regulation and control. Amidst such rampant medical malpractices people of Bihar are more dependent on private hospitals and clinics and on quacks, as the public health services are in a deplorable situation in Bihar. Thus, in such an adverse situation the deplorable state of poor patients can be imagined.

There was a huge difference between the branded medicine and the generic medicine of the same salt combination. Some medicines are two to fifty times costlier than its generic counterpart. He further added that more than 40 crore people cannot afford to eat two meals a day. Hence, they do not have money to buy medicines. According to Bhargava and Kalantri (2020) about more than half of the Indian population lack access to essential medicines. The doctors also under the pressure or lure of the pharmaceutical marketing tactics prescribe branded medicines. The patients on the other hand do not even know that its generic is cheaply available and they can buy it from any shop.

The doctors do not write the generic names on the prescription as the MRs pressurize and tempt the doctors to write the branded drugs of their company.

It is evident that the state itself is responsible for such malpractices in marketing and prescription of drugs, which negatively impacts on the nature of western medical practice and ultimately the people have to suffer. The regulation systems are poor and ineffective. Lupton (2003) further develops Illich's (1976, as cited in Lupton, 2003) thesis and call it as Political Economy of Medicine. There is symbiotic relation between capitalism and health care: "capitalism produces health needs which are treated in such a way as to obscure their origins and demands the consumption of commodities to secure the healing process, which in turn supports the capitalist system of production" (Lupton, 2003, p 10). On one hand, modern states subject their citizens to social control in the form of numerous tests, vaccination requirements or by organising individually targeted campaigns, on the other hand, governments fail to regulate large companies so that they would create a healthier environment for work, stress management and health. The government do not take the necessary action against the production and marketing of unhealthy goods such as alcohol or tobacco. The regulation and control of pharmaceutical manufacturing, distribution and marketing is also not very stick and there are many loop holes, the advantage of which is taken by pharmaceutical companies. "Medical care thus tends to be oriented toward the treatment of acute symptoms using drugs and medical technology rather than prevention or the maintenance of good health" (Lupton, 2003, p. 10).

There are many side effects of medicines and the drug resistance to many diseases also increases, which further adds on to the public health problem of prevention and control of certain diseases. The pharmaceutical companies are also not spending on innovation of antibiotics as it requires huge investment and the cost of the antibiotics is very less. Thus, the vicious cycle of poverty, illness and disease continues.

The study explored that in the health market, various factors are generated that influences the rational ethical practices of the doctors. Specially the aggressive marketing strategies carried by the Medical Representatives at micro-level and the drug pricing lobby that operates at a macro level influences the patient's choice and demand for the medical services and the doctors prescriptive practices. Pharmaceutical companies try to capture a doctor's mind, memory, and life in a

variety of ways, including regular visits, free samples, calendars, pens, writing pads, glass sets, coasters, birthday, marriage and anniversary celebrations and other items kept in his clinic, as well as constant reminders to ensure that its drugs are prescribed by the doctor on a daily basis in order to meet monthly and annual sales targets. The doctors are under constant pressure for prescription generation. The health market subtly creates a condition that forces doctors to go into unethical prescriptive practices. The aim here is not to justify the unethical practices of the doctors but to emphasize on the need for market regulation to ensure health security to the people.

Almost all the doctors and MRs agree that a doctor learns from the MRs. Hence, they give time to MRs and meet them on a daily basis since they fear that if they do not maintain a good relation with an MR, the MR may stop visiting him. He will lose both the new knowledge on drugs and the incentives and gifts of pharmaceutical companies. In the community of MRs of various pharmaceutical companies his image may be tarnished that he doesn't entertain MRs and so other MRs would also stop visiting him. He is afraid of being ostracised from this culture of MR visit and gifts giving as well as this community of MR and doctors. This fact shows how lack of time and busy schedule makes a doctor so much dependent on MR for knowledge. Thus it is recommended that doctors Continuous Medical Education (CME) should be done by the state and by medical institution and not by pharmaceutical companies. The funds for it should by provided by state and not by pharmaceutical companies. The taxes of the pharmaceutical companies should be increased and it should be utilised in health care and medical education. Regulation of big and small pharmaceutical companies should be done by the government and their marketing strategies and budget should be regulated and audited.

CHAPTER 5

MEDICAL PLURALISM: INTERACTION BETWEEN INDIGENOUS AND WESTERN MEDICINE

5.1 Introduction

Health is a multi-dimensional aspect of people's life. It affected by a multitude of factors and is also addressed by a multitude of solutions. To be healthy and keep diseases away; and to cure ailments, has been historically done using home-based remedies to local healers to alternative medicines. There are different kinds of practitioners of different systems of health care and healing. Given the highly constraint health system, a large share of care provisioning is done by local healers, and untrained persons. At present about 70 percent of the primary healthcare is provided by unqualified practitioners (Kumar, 2015).

'Medical pluralism' exists in all societies. However, the term was introduced by social scientists in 1970s to characterize the situation in the third world countries wherein people resorted to multiple health care options outside the government health care system which was dominated by western biomedicine. By the 1990s, the definition of Medical Pluralism changed and it came to denote the inclusion of CAM in the government health system. In modern life state sponsored medical pluralism is not only characteristic of third world countries but is also a reality of health care in the west (Sujatha and Abraham, 2009). Medical Pluralism refers to "the coexistence in a society of differing medical traditions, grounded in different principles or based on different world views." (Gabe et al., 2004 as cited in Amzat and Ramzum, 2014). It can also be defined as adoption of more than one medical system or optimum integration of available medical systems for health and illness (Amzat and Ramzum, 2014). The demand for cure and the growing health care needs which eludes any particular system of medicine has ascertained the spread, continuity and growth of the alternative systems of medicine. In India the indigenous systems of medicines - namely, Ayurveda, Yoga, Unani, Siddha and Homeopathy (AYUSH), has thrown up a lot of concerns on how to incorporate them into the centralized health systems? (Sujatha and Abraham, 2009). (The definition of indigenous medicine can be seen in

chapter 2 under the section on - "Operational Definition of Concepts Used in the Thesis").

As Western medicine also known as Biomedicine is the most dominant system in our Indian health system that claims to be scientific and evidence based, the incorporation of indigenous medicines is the biggest challenge that has to prove its scientific worth in the terms of biomedicine. The continuity and growth of other indigenous systems of medicine namely Ayurveda, Siddha and Unani, and Homeopathy has put them into constant negotiations with western biomedicine. Thus, in the context of medical pluralism it is often seen that biomedical hegemony often supersedes the other systems of indigenous medicine. In a mixed economy like that of India the cultural, political and economic structures often seem to suppress the indigenous systems of medicine to establish biomedical hegemony. Medicine and health care has become a commodity for profit making and those who have money and political power dominate the medical systems. Here in India the biomedical hegemony was established before independence and it continued post-independence as well.

In this context the present chapter seeks to engage in exploring the hegemonic relations between the western biomedicine and indigenous systems of medicine in Bihar and how the market of both the medicines influences each other. How people are negotiating their health amidst the medical pluralism and medical hegemony. This chapter talks about medical Pluralism and includes field interviews of people of Bihar and their medical choices, experiences and views on Indigenous and Western medicine. Impact of Market on Medical pluralism, political economy of health budget and marginalization of indigenous medicine and its importance. An attempt here is made to critically examine both the systems of medicine and the reason for their advancement and establishment and what further needs to be done to give better health choices and practices to people against the backdrop of broader political and socio-economic issues, in other words medical landscapes.

5.2 Medical Pluralism or Medical Diversity

"Medical Pluralism" coined by Leslie Doyle originally referred to the situation of medical revivalism in South Asian societies (Penkala-Gawecka and Ratjar, 2016). The concept has been criticized for creating a 'false consciousness of choice' and

underplaying the importance of political, economic, structural and power issues and implicitly producing a monolithic concept of Biomedicine. The strongest criticism came from critical medical anthropology who emphasized on the dominance of biomedicine in the modern world and calling into question the notion of 'pluralism' itself. (Baer, 2004, as cited in Penkala-Gawecka and Ratjar, 2016) Despite this Baer along with other anthropologists admit that the dominance of biomedicine over other systems of medicine has never been absolute (Baer, 2004, as cited in Penkala-Gawecka and Ratjar, 2016). Despite much criticisms, the notion has gained more value and popularity in the recent years. This resurgence of the concept of medical pluralism has occurred due to growing popularity of the complementary alternative medicine (CAM) in the context of public health funding crisis that is putting pressure on government to include CAM in their health policies (Cant and Sharma, 1999, as cited in Penkala-Gawecka and Ratjar, 2016).

Moreover, within recent debates on medical Pluralism the focus has moved, as Krause, Alex and Parkin (2012) put it, from 'an understanding of pluralism as consisting of separate systems to thinking about mixture and intersections of different therapeutic practices.' In the light of this, the authors prefer to speak of 'medical diversity.' In Parkin's (2013) words-

Medical diversity refers to more than medical pluralism, if by the latter is meant a number of medical traditions coexisting relatively insulated from each other within a region. Diversification is more than this and implies mutual borrowing of ideas, practices and styles between them, and by implication more differentiated strategies adopted by patients in search of cure. (as cited in Penkala-Gawecka and Rajtar, 2016, p. 130).

Regarding medical pluralism Gupta's framework envisage that "resort to multiple systems of relief to gain relief from suffering was basic to humans in general, and cannot be explained as cultural obduracy or ignorance of third world population. Neither was it due to the absence of proper allopathic facilities, for multisystemic approach is found even when the best of the facilities are available. He also argues that the co-existence of traditional and modern medicine has, therefore, to be seen not as dichotomies but as "overlapping instrumentalities." (Gupta, 1988, as cited in Sujatha and Abraham, 2009)

5.3 History of Medical Pluralism in India

From the chapter on history of western medicine, it is clear that with the establishment of western medicine in India, there was marginalisation of Indigenous medicine from the Indian culture. the deliberate and conscious effort to impose western medicine as superior to Indigenous medicine by the British government worked wonderfully well and even after independence the discourse created by western medicine was so powerful that it had a deep and long-lasting impact on our health culture and health system.

Traditional medicine which was once so highly advanced in antiquity that many European anthropologists and botanist and zoologist learnt from its scientific tradition. There was exchange of medical knowledge between Siddha, Ayurveda, Unani but no such exchange was observed between western medicine and Ayurveda especially after the establishment of Germ theory of medicine. The reason for this could be attributed to language barrier or it could be that the Europeans came to learn the Indian culture and medicine, and the need to learn and adopt from them was not felt by the Indian Vaidyas and Hakims. Especially once the western medicine shifted its paradigm from humoral theory to germ theory, the gap between the medical knowledge of indigenous and western medicines widened. In the eighteenth and nineteenth century the Vaidyas and Hakims in India were beheld in high esteem and most trusted by the Indian in comparison to western medical doctors. This created a need among the western doctors practicing in India to learn from the traditional tropical medicine. They were supported by the British government ruling in India. There is hardly any evidence of scientific research among the traditional Vaidyas and Hakims who largely depended on materia medica written by *Charaka* and *Shushruta* in ancient period. There was hardly any attempt to build on the knowledge with the changing need and culture of the society. The system of transformation of knowledge in Ayurveda was also very slow, extending over a long period of getting trained at the home of the Vaidyas and practicing along with him. At that time the population was less so the trainees could deal well with the need of the population. The medical knowledge dissemination was cultural; therefore, home remedies were known to the community which reduced the need of the traditional healers. There were varieties of healers like the bone setters, *nari (**नारी**)* Vaidya, hakims, folk healers, Siddha, spiritual

healers etc. So, they all could cater to the need of the community well. The knowledge dissemination was slow and mostly through oral tradition. In such a scenario what a Vaidya knew, he could pass that knowledge merely to his disciples. The medical text was hardly referred to and not widely disseminated and available to all the pupils. In such a scenario some of the good knowledge of surgery in Ayurveda completely started perishing. For instance, in 1684, once when the King of Golkonda got ill with headache, his physicians prescribed blood to be let in four places under his tongue, however nobody could do it as no one new surgery[27] (Wujastyk, 2013, Chapter33, p.772). The Language of medical texts of *Charaka* and *Shusruta* was ancient Sanskrit which was losing its popularity in medieval and modern period. The translated texts were not available in huge numbers of volumes. As the indigenous medicine was not patronised so it lost support after the demise of the patronising rulers and expansion of British empire. The three hundred years of rule of British in India completely decimated the growth and progress of the indigenous medicine. However, the indigenous medicine did not lose its light completely as it was deeply embedded in our rural and traditional culture. There were patriots who tried to adapt the form of traditional medicine with the changing culture and health need of the people and make it survive till present.

Western medicine on the other hand learnt immensely on tropical disease from the indigenous healers and indigenous pharmacopeia and later attempted to marginalise it as unscientific especially after 1835, the modern educational reform brought by Lord William Bentick. The absence of state support and fund, further curtailed the attempts of certain traditional revivalist who attempted to adapt the Gurukul home based training to the modern training methodology in training colleges, to train more and more practitioners to cater to the growing need and demand of the natives.

Post-independence, the British legacy was carried forward and thus western medicine became the skeleton or backbone of our health system. It was in 2004 that Department of AYUSH was formed and in 2014 the Ministry of AYUSH was established. Therefore, the indigenous medicines are being revitalised with state's support. In-spite of dominance of western medicine medical Pluralism has thrived as one system of medicine do not have complete cure for all the diseases. In such a backdrop of

[27] This anecdote was described in an account of French traveler- Travenier.

medical pluralism in India, it is imperative to understand the pluralistic health care practices of people of Bihar.

5.4 Pluralistic Health Care Practices in Bihar

As we know that Bihar is third most populous state in India and a large proportion of people live below poverty line. The socio-economic and health indices are very dismal and people often fall ill. They are frequently in need of medical consultancy. People practice pluralistic treatment regime for many reasons of their own. Some of those reasons are belief in the local or indigenous healers so they often go to them first, and it is many a times cheaper than the western medical healers. When the disease is at the initial stage they go to the medical practitioners-either indigenous or western medical healer available near the area of their residence for primary care, once the disease is not healed by the local practitioners, they go a little further away from their residence for secondary or tertiary care. Therefore, distance, time, money, loss of work days and wages, availability of the healers are all contributary factors for the decision of consulting the type of medical healers. The researchers field experience and her ethnographic in-depth interactions with the people, medical representatives, pharmacist and doctors speaks volumes about pluralistic system of medicine accessed by people. This is evident from a few case-studies as observed in the field.

5.4.1 Case study 1 Pluralistic Health Seeking Practices of P6 and His Family

The researcher had an in-depth telephonic[28] interaction with P6 on 3rd of July 2020. She then called him subsequently to gather some more information and clarify her doubts.

P6 has been working in Care India in Bihar since 2011 and is living in Patna since 2014. He said that they have a family doctor to whom they consult most often. His wife often suffers from gastroenteritis for which he often consults western medical doctors. He decides about the doctors after consulting his family and friends.

P6 informed the researcher that his father suffers from two chronic problems-skin problem and pulmonary problem. His father, for his skin problems, consulted

[28] Telephonic interview was undertaken due to Covid-19. Researcher has undertaken more of such interviews earlier in 2007 and 2008, during her ethnographic field interview.

Patanjali Ayurvedacharya and took the medicine for 15-20 days. However, the itching problem of his father's skin increased. Thereafter he consulted allopathic doctors and is getting relief now. His father is 73 years of age and was a chain smoker, hence he has some material deposition in his lungs. His lungs have 40-50% of working capacity. For his chest problem he was being treated in Delhi first. However, his father found the allopathic doctor to be very rude- as the doctor did not talk much, he (doctor) would not listen to his (father's) problems, and most often his junior doctors would come for counseling. So, his father did not like that doctor. Then with the help of his friends he identified another doctor in Nagpur who was very good and polite and his father was happy to consult the doctors. He took treatment from him for one and a half year. However, that particular doctor got transferred, and his father again got dissatisfied with the substitute doctor of that hospital in Nagpur. He then took his father to another doctor in Jabalpur in MP. Again, his father was not satisfied in the treatment and also it was getting very inconvenient to go from Patna to far off locations for treatment. He then started consulting doctors in Patna. He even consulted AIIMS hospital in Patna for his father's slip disc problem. After first visit to the hospital the doctor asked him to visit his private clinic. So, he privately visited him for his father's slip disc problem. He consulted the doctor for one month. He informed that the doctor had Xray, operation theater and pharmacy in his own clinic. His father's slip disc problem got better after consulting that doctor. For his lungs problem after consulting 3-4 doctors, he finally found a good doctor in Patna. The doctor gives a lot of time to his father. Talks to him like a family friend and often prescribe newly launched medicines. His father likes him and his numbers of medicines are also decreasing gradually. Earlier he used to take 6-7 medicines in one day and now it has reduced to 3 medicines in a day.

His father and other family members take "*Chawanprash"* of Dabur company, regularly, as an immunity booster. His family consults homeopathic doctors for common cough and cold.

P6's case study shows that his family practices pluralistic system of medicine. However, they are mostly dependent on western system of medicine and more often consult the western medical doctors in comparison to doctors of other systems of medicine. We also understand how on various episodes of illness P6's family

consulted Western medical doctors, Patanjali Ayurvedacharya and switched back to Western medical doctor on not getting relief. Western medical doctors these days have a whole set up of diagnostics and pharmacy in their clinic which helps him collect profit from all ends and is also convenient for patients as they get a one stop shop. For his father, the doctor's personal attention to him and polite behaviour is very important for him to get relief. This was the reason that he kept changing his doctor for his lung problem. His movement from Patna to Delhi, then to Nagpur and to Jabalpur and finally back to Patna to seek health care from a doctor who not only takes care of his medical symptoms but also talks to him nicely and takes care of his emotional needs. This shows spatial plurality within the western medical system. The quality of care provided by the doctor, even his interaction with the patient was very important in the healing of P6's father. The whole family take nutritional supplements and immunity booster preparations of Ayurvedic company for their good health. This corroborates with the argument that "people's health seeking behaviour was not determined by their cultural perception of a medical system, rather by the availability, accessibility, and quality of a medical care in any particular system in an area" (Minocha, 1980, as cited in Sujatha and Abraham, 2009). People resort to self-care through Ayurveda to maintain their health.

5.4.2 Case study 2 Work Experiences and Field Experience of P7

P7 is 38 years old and has 10 years of work experience in the area of reproductive health care with specialization in abortion related care and guidance. Currently he is working in Care India in Patna. While explaining about his work in the field of abortion especially in rural Bihar, he said that the rural women often resort to abortion pills as it is an easy alternative for her. The PHCs are 40-50 km away from their village and ill-equipped. Therefore, rural women have easy access to abortion pills which are available over the counter (OTC) in a pharmacy. If the medicine is of Rs 200 then pharmacist will give it for Rs 500 and people have to buy it as they need it. Sometimes Traditional practitioners give turmeric or something else for abortion. Many a times these women face heavy bleeding yet they do not speak about it with their family members out of shyness. Many a times they become weak due to excessive bleeding and by the time they reach the hospital they die. Her family members also do not tell the doctors about the abortion pill taken from the rural medical practitioners. He said that there are about 8% abortion deaths in India. He

informed that in India the MTP act allowed abortion up to 20 weeks and PCPNDT 2019 Act allows abortion up to 24 weeks. For abortion up to 12 weeks of pregnancy, the females of 18 years or above can take her own decision to abort. For pregnancy above 14 weeks, two doctors' team has to decide on the basis of ultrasound report. P7 further said that there are a lot of females who get pregnant before their marriage and they are scared to share this to their families. Getting abortion services are not easy for women. P7 said that sometimes it has been observed that if an unmarried woman goes to a government hospital for abortion, the nurses will abuse her as *"kya tum galat kaam kar ke aayi ho", "tum bachchalan ho", "Tum Khandan ka naam duba di"* (Have you committed any wrong? You are characterless, you have defamed the family name etc). Often women do not want to avail the services of government hospitals for fear of being exposed, as their village people will also be there in the government hospitals and they will not have any privacy. Hence for fear of losing their privacy the women do not want to go to any nearby hospitals. Abortion is such a stigma that people do not want to talk about it openly irrespective of whether the female is married or unmarried. So, they often prefer private hospitals. Many a times the private hospitals charge very high fees around Rs 6000-7000/-. So now government accredits certain private hospitals and pay the fees to these hospitals on behalf of the patients. Thus, many females resort to abortion in the absence of proper medical guidance and often face complications.

Therefore, P7 and his team involve themselves in awareness generation of rural people as well as training of the rural medical practitioners regarding safe abortion. They train nurses on how to disinfect the instruments and also aware them regarding abortion laws and how to counsel patients. They even train the physicians of government hospital for obstetrics care as there is paucity of such specialized doctors in the PHCs and CHCs of Bihar.

It is evident that cultural bias and social taboos for women further shove them to the depth of vulnerability once they have unwanted pregnancy. In India having sex before marriage and out of nuptial knot is considered to be immoral and hence in spite of availability of legal laws, it is difficult for the females to avail abortion services as the society condemns them for their immoral behaviour. In order to avoid social stigma, defamation to the family and loss of their own integrity, they opt for abortion pills

from local practitioners or chemist. This finding corroborates with Singh et al. (2015) wherein they state that in 2015 the Medical Method of Abortion (MMA or MA) the combined regimen of mifepristone and misoprostol accounted for 70% of abortion with 5% of all women having abortions resorted to highly unsafe methods. MA is increasingly available in a combi pack for abortion up to 9 weeks gestation. However, it is acquired from chemists and informal vendors without a prescription and without adequate information of its use. It is one of the principal methods of abortion in India. If these medications are used following the clinical protocols, then 95-98% of women will have complete abortion without complications within nine weeks of gestation. However, these are provided OTC by chemists and informal vendors who do not provide accurate information to the user and they may not assess woman's gestational age correctly. Furthermore, even though the seller has given medically correct information to the buyer, the directions may not be correctly conveyed to the woman using the drug when purchased by male partners or other proxies (Singh et al., 2015). Women face problems due to method failure, incorrect MA usage, or the use of low-quality medication (Singh et al., 2015). It is observed that women often suffer from heavy bleeding after taking the abortion pills, in the absence of proper medical guidance and medical care, and they further neglect it for fear telling the family members and going far away for medical help, which would also defeat the very purpose of taking abortion pills secretly. This many a times cost their life due to excessive bleeding.

Table 5.1 Place of Abortion

Place of abortion	**Urban**	**Rural**	**Total**
Public health sector	4.9	10.0	9.2
Private health sector	77.0	66.2	67.9
At home	18.1	23.2	22.4
other	0.0	0.6	0.5
Total	100.0	100.0	100.0

Source- NFHS-4 (Bihar report) http://rchiips.org/nfhs/NFHS-4Reports/Bihar.pdf

The NFHS data also corroborates with the information given by P6 that women in Bihar prefer to go to private health sector. Table 5.1 clearly demonstrates that 77% of women in urban and 66.2% of women in rural areas prefer availing abortion services in private sector. About 18.1 percent of urban women and 23.2 percent of rural women prefer for abortion at home (see Table 5.1).

Table 5.2 Persons who performed abortion.

Persons who performed abortion	**Urban**	**Rural**	**Total**
Doctor	37.1	41.9	41.1
Nurse/LMV/LHV	42.2	28.0	30.3
Dai/TBA	0.0	2.1	1.8
Family members/ relative/ friends	0.6	8.5	7.2
Self	20.1	16.4	17.0
Other	0.0	3.0	2.6
total	100.0	100.0	100.0

Source- NFHS-4 (Bihar report) http://rchiips.org/nfhs/NFHS-4Reports/Bihar.pdf

The data in Table 5.2 shows that about 20.1 percent of urban women and 16.4 percent of rural women perform self-abortion and about 2.1 percent of Dai/TBA perform abortion on rural women. Around 42.2 percent nurse/LMV/Lady Health Visitor (LHV) in urban region and 28.0 percent in rural region perform abortion. Doctors perform 37.1 percent of abortion in urban region and 41.9 percent in rural region. This also shows that women do not have easy access to safe abortion in Bihar.

Regarding important factors that determine the choices for a health care advice P7 said that people choose a doctor based on peer review, based on his clinical expertise or his polite and counselling behaviour and, how nicely he listens to the patient. P7 said that in Patna people like to visit a doctor based on familiarity. Once a patient visit a doctor then he visits the doctor in his second illness time as well. If the doctor's

behaviour is good then the patient continues consulting him during the time of illness. If the doctors also know the patient well and gets familiar to him, then he also shares his contact number with the patient.

Regarding choice for indigenous healers P7 said that in villages and in urban cities there are some good ayurvedic and homeopathic doctors on whom people have faith and they have more patients than the western biomedical doctor. He said – "*I know some Homeopathic doctors who are very good and who can say the health problem of a patient by just seeing the patient*".

There are some Unani doctors who may or may not be BUMS qualified and may not be having degree. Such doctors are known as "*Jholachap* doctors". They will name their clinic "*Unani Dawakhana*" or "*Zarrahi Dawakhana*"and write their name on the board outside their clinic and will not display their degree. Some Unani doctors display their degree as well. When a patient goes to a doctor, he cannot ask whether he has any degree or not. Such doctors are mostly found in Muslim settlement areas like "Patna City". They are mostly known for "*cheer-phar or zakhm ka ilaz karne wala*". They are famous by word of mouth. These doctors heal small wounds by performing small surgeries and their total cost would be between Rs 200- 500. If people go to any surgeon for this then they have to give Rs 500 as the doctor's consultation fees. In addition, the allopathic doctor will write 3-4 test. On the whole the patient ends up paying Rs 2000 if he goes to an allopathic doctor. P7 said that- Population is very high here and every patient has a limited capacity to pay. Also, for allopathic doctors – his fee and tests are too much. There is a business chain. The doctors have connection with the testing centers and they refer their patients to those testing centres. A lot of such malpractices happen. There are many good doctors as well along with such doctors. Every person's income is not enough that they can pay for high fees and tests of allopathic doctors. So, they go to the rural medical practitioners. Sometimes the patients get well and sometimes they lose their life also.

This throws light on the differentials in health seeking practices of the people. The fact that people prefer to go to *Zarrahs* than to western medical doctors corroborates with Weber's (2016) views that the biological health paradigm is seen as elitist, demeaning, overly focused on pathology, and expensive, which is essentially the cause of this movement toward the use of CAM therapies. A more equal connection is

often reflected by CAM therapies, which are frequently perceived as less dictatorial and more consistent with patients' ideals. In this relationship, the definition of health is emphasised rather than the management of sickness.

P7 also shared his interaction and observation with a Homeopathic doctor and said that once a patient having a problem in his liver went to a homeopathic doctor. (P7 said that this was his personal observation which he was sharing.) He (patient) asked the doctor- in how many days would he be able to cure him. The homeopathic doctor said that he will cure him but cannot tell in how many days he can cure him. It may take six months or even a year to heal his liver. The patient however insisted to know the time in which the doctor can cure him. The homeopathic doctor then said that there is no guarantee of life, how can he give the guarantee of time. He told the patient to go to some other doctor who can give him the guarantee of time. So, the patient went away. The homeopathic doctor then told P7 that if he wanted then he would have given high dose of medicine to the patient and cured his symptoms immediately but high doze would have created other health issues for him which might never get cured. The doctor told P7 that he is not a *jholachap (**झोलाछाप**)* doctor to do such practice. P7 said that the Unani *Zarrah* (**ज़र्राह**) use such high dose of medicine to stabilize the health problem of his patients immediately. In such cases sometimes patients even lose their life. P7 also informed that homeopathic and Ayurvedic practices are more in Bihar in comparison to Unani medicine. Homeopathic medicine is more in practice in comparison to Ayurvedic medicine as there are hardly any good Ayurvedic doctors. The ayurvedic doctors have their own medicine shop. They practice in their own medicine shop or pharmacy as they do not have enough money to open a separate ayurvedic clinic. So, because of the location of the Ayurvedic doctors' clinics, many patients are not able to reach them. Homeopath is more embedded in the culture over here as P7 says- "*Homeopath kafi prachalan mein hai yahan pe*" (Homeopathy is more in practice over here). P7 said- "*Main ek do Homeopaths ko janta hoon jinke paas itna bheerh lagta hai ki utna to allopath mein bhi nahi lagta. Jaise Raja Bazar mein Dr Suresh Rao hain jo din bhar mein kam se kam 100-150 patients dekhte honge. Itna to koi allopath ke paas bhi bheerh nahi hoti hogi. Log ek baar wahan dikha ke theek ho jate hain to unke regular customer ban jaate hain"* (I know one or two Homeopathic doctors who have more patients than

allopathic doctors. For example, in Raja Bazar area Dr. Suresh Rao consults at least 100-150 patients in a day. This high patient crowd might not be seen at allopathic doctor's clinic. Once people get well with the doctor then they become his regular customer.)

Similarly, people also informed about Dr. B Bhattacharya's clinic located in Patel Nagar, where patient have to take prior appointment. Now Patients are seen by Dr Bhattacharya's assistants.

P7 also informed that in homeopathy people many a times stop taking medicine in the middle of the course once they start getting relief, however this is not a good practice. On the contrary if they go to allopathy then they spend minimum 1500-2000 rupees. So, they try to finish the whole course of medicine as they spend minimum 1500-2000 rupees on it.

This reflects that in acute illnesses people want quick solutions. Those who give such quick solutions are considered to be a good doctor. People are unaware of the iatrogenic effect of high dose of medicines and are unable to differentiate between a good practitioner and a bad practitioner. Money is another important factor which play a major role in choosing the type of practitioners as we can see that people prefer to go to *Zarrahs* instead of an allopathic doctors for their small cuts and wounds. People also visit the ayurvedic or homeopathic quacks for common illnesses.

5.4.3 Case- study 3 People Consulting a Pharmacist

During her field investigation the researcher also observed some other health seeking practices of people. She observed that many people consulted chemists for their health problems and took medicine directly from them.

One day in 2008 the researcher was having an in-depth interaction with a pharmacist-Pharm2, in his shop in Patel Nagar. (Pharm2 has a small shop located in a residential cum market place in Patel Nagar. Pharm2 said that as he does not have a Bachelor of Pharmacy (BPharm) degree so he got the license of the shop in the name of another person who has a pharmacy degree. The other person never comes to the shop and Pharm 2 is considered to be the owner of the shop).

Figure 5.1 Picture of a pharmacy shop in Patna

The picture in figure 5.1 is to give an understanding of a pharmacy shop in the study area.

While she was interacting with him about how he opened his shop in Patel Nagar, a patient came with an empty blister pack to ask for a new one. Pharm2 gave her the medicine and she took it on credit. At this point one lady came and took one medicine *Qadriderm* on credit from him for one of her relative. She referred to a medicine previously taken by her from him which did not work. Pharm2 told her to consult a skin specialist if it's not working. She said that she would see for a day or two more and then think of consulting a doctor and then took the medicine *Quadriderm* from him on credit. When the researcher asked him why the lady did not pay for the medicine then pharm2 told her that, it is how the practice is here. He said, "*log hamse dawa credit pe lete hain aur baad mein paisa dete hain"* (People take medicines on credit and pay me later).

After another five to ten minutes later two girls came and one of them asked pharm2 that their mother was having giddiness, so should they take her to a doctor? Pharm2 told them that he was giving them sodium powder with which their mother will be

fine. The girls again asked him whether it will help or not? He assured them that it will help. The girls went away with the medicine given by him.

While pharm2 was dictating the researcher the names of the medicines kept in his store, another man came to buy *Vetnovet-N* without prescription.

NS then asked him which fever medicines are sold more. He said that Calpol and Crosin are sold more. He told her that since these medicines are advertised more so people know them. However, he told her not to write it as it was illegal. NS could not understand what was illegal- the advertisement or him selling them without prescription? She felt that clarifying it would make him offensive so she did not ask about it.

On observing these people's interaction with pharm2 the researcher understood that people buy medicines from him without prescription and consult him for many of their illnesses. If the medicines given by him cure them, then they do not go to the doctor and if they do not get well then, they resort to consult a trained western medical doctor. It was observed that the pharmacist also worked as a quack for the nearby residents who had good faith in him. It needs to be mentioned here that pharm2 is not even a certified pharmacist, and yet he gives medicines to the people based on his experiences in the field. Here the distinction between a pharmacist and a doctor is obscured. Such phenomenon has also been observed in much of India and Nepal by Bhrillcova et al. (2011) wherein they observe that patients commonly approach a pharmacist or a retailer for their diagnosis and medicines without the intervention of any practitioner.

The above observations corroborate with Al-worafi's (2020) observation that self-medication either in the form of buying medicines over-the-counter or without prescription is a common phenomenon of developed and developing countries though the reasons for it vary in each geographical regions and places. This has its own positive and negative consequences and people need to be educated and sensitised about self-medication. But in regions like Bihar where majority of the people are illiterate and poor the task of awareness generation seems to be daunting.

5.4.4 Case-study 4 Choices of Medicines of P9

P9 is 44 years old and works as a project manager in a logistic company in Mumbai. He migrated to Mumbai for work and keeps visiting Patna to meet his parents. He suffers from Diabetes and said that he was detected with diabetes at the age of 32 years. P9 informed that he takes both allopathic and ayurvedic medicine to control his sugar levels. When his sugar level gets very high then he takes allopathic medicine which immediately controls his sugar levels and when sugar level decreases then he takes ayurvedic medicines to control his daily sugar levels as ayurvedic medicines are natural with no side-effects. He said that since allopathic medicines are chemically made and have side effects so he takes it only in case of emergency or to immediately lower down his sugar levels. P9 also added that if he takes natural plant forms - i.e., when he takes fresh aloe vera juice directly made from aloe vera plant in his balcony garden then he can feel its effect. It reduces and cures his knee pain and body pain problems. So, he said that ayurvedic medicines which we now get in tablet forms must also be good for the body although their form is also similar to the western allopathic medicines.

5.4.5 Some Other Observations in the Field

One day in June 2021, the researcher took an observational walk in her study region in Patel Nager and Kesari Nager. She observed that in Patel Nagar a very big medical store- “Blue Medix” retail chain pharmacy was opened. After interviewing the staffs of the shop, it was observed that the need for the medicines is ever increasing and each pharmacy shop get a good profit from their sale. The researcher searched for the small shop of Pharm 2 which she visited in 2008 but could not find it. Perhaps the shop got closed.

In Kesari Nagar, an ayurvedic doctors board was seen outside a residential building. Except for the board there was no sign of the clinic nearby.

Figure 5.2 Pictures of an Ayurvedic Quack Sign Board and Clinic (inside view which was dark and invisible) in Patna

The researcher asked a person coming out of the building about the doctor. He asked the researcher to go up a narrow and dingy stairway to find the doctor (see figure 5.2). When the researcher tried to go in, she found it to be unapproachable, dark passage, no sign of doctor so she came back. The researcher thought that the sign might have been of a quack whom people know personally and approach. A trained doctor's clinic is usually clearly visible and approachable. Further down the road she found a small homeopathic clinic with green curtains at the entrance. The shop was located beside a grocery shop.

Figure 5.3 Picture of a Homeopathic Quack Clinic (outside and inside view)

The doctor told the researcher that he got trained in homeopathy from another homeopathic doctor under whom he worked as a compounder or helper. He usually treats common illnesses like indigestion, pain, fever etc. The researcher observed that he was basically a quack without any formal training in Homeopathy (see figure 5.3).

Thus, we observe that people often follow pluralistic treatment regime. They not only practice pluralistic health practices but they visit multiple practitioners may be at the same stage of their illness or they visit multiple practitioners at various stages of their illness. However, they demand and are more dependent on western medicine especially for acute illness requiring immediate relief. People also depend on indigenous systems of medicine for many of their illnesses especially for chronic illnesses which requires taking medicine for a long time. They prefer to take indigenous medicine, if available, to reduce the side effects of allopathic medicines on their body. Poor people rely mostly on indigenous practitioners who are mostly quacks. Around 70% of Bihar's rural population relies on the traditional medical system (Ranjan et al., 2018). These traditional practitioners are no doubt life line of the people who do not have access to good quality medical services near their home. They are cheap and easily accessible for the people, as their clinic is nearby and the look and feel of the clinic is also not very elitist, fee is less, doctor also relates to them well and there is no display of knowledge and wealth in their clinic. This corroborates with the argument of Chandra and Patwardhan (2018) that rural informal practitioners fulfill the extreme paucity of health workers in rural areas. The risks of continued reliance on unqualified professionals include inaccurate diagnosis, inappropriate drug use, and the development of multidrug resistance. Hence, they advocate for the training to the rural practitioners as it used to be in pre-independence system of trained medical auxiliaries. Thus, the trained rural informal practitioners can take care of the acute ambulatory requirements of rural population, make informed referrals and reduce their out-of-pocket expenditures, which is one of the main causes of their poverty (Chandra and Patwardhan, 2018).

The need and demand for western medicine is felt by all at one or other episode of illness. Jana and Basu (2017) state that, price of the medical service, patient income, and travel time to the medical facility have all been identified as important factors in choosing a facility. However, the researcher observed that this is mainly for initial and

mild stage of illnesses. In case of acute emergencies, chronic illnesses, and life-threatening diseases such parameter for determining the choice of practitioners, their place of practice and their fees, gets obscured.

Hence there is no denying the fact that there is excessive dependence western medicine both of the people and of the state government as most of the National and state health programmes are also based on western medical paradigm. Historically also we have seen that the demand for western medicine was created discursively. The influence of western medical discourse is such that in rural areas of Bihar Western medicine is more in practice. The hegemony of western medical discourse is such that along with the pharmaceutical companies, and the state's support, it has led to more and more demand and dependence on western medicine, even in resource poor rural areas of the state.

5.5 Disproportionate Dependence on Western medicine

Interaction with most of the MRs, revealed that people mostly follow western medicine. Even in the villages the demand for western medicine is more in comparison to other systems of medicine. It is quintessential to understand the impact of excessive dependence on western medicine and the role of western biomedical pharmaceutical industries in transforming the urban and rural therapeutic spaces.

5.5.1 Interactions with Medical Representatives (MR)

MR2 said, "*yahan allopathy hi jyada chalta hai". (He meant that in Bihar Western medicine is more in practice in comparison to other systems of medicine)*

MR5 reiterated as follows –

> *Bihar mein Ayurvedic practice kam hai. Allopathic practice jyada hai. Isliye Ayurvedic doctors bhi Allopathic practice karte hain. Kai jaghon pe aise doctors ki practice jyada chalati hai aur MBBS doctors ki kam chalti hai. In doctors ke fee kam hoti hai aur doze jyada hota hai jisse patient jaldi theek ho jata hai. Ache doctors low doze dete hain isliye aise jaghon pe unki practice jyada nahi chalti. Patient ko turant relief chahiye. Jaise Deoria gaon mein aise ayurvedic doctors aur jhola chaap doctors ki jyada chalti hai*.

(He meant that in Bihar Ayurvedic practice is very less. Allopathic practice is more common. That is why Ayurvedic doctors also do allopathic practice. In many places such ayurvedic doctors practicing allopathy have a good footfall of patients in comparison to MBBS (allopathic) doctors. As these doctor's fees is less and dose is more, so patient get relief quickly. Good (MBBS) doctors give low doze that is why in such rural settings such doctors do not have a good footfall of patients. Patient want instant relief. For eg. In Deoria village of UP which is at the Border of Bihar such Ayurvedic doctors or quacks have a good practice).

Therefore, it is observed that people of Bihar are mostly illiterate and that is why they are not able to differentiate between good and bad therapeutic practices of doctors. This is also understood from the interaction with P7. All that people expect from a doctor is to get immediate relief from their illnesses. This expectation of patients is being exploited by doctors and quacks. It is also observed that due to demand for western biomedicine, doctors of ayurvedic system of medicines are transforming their practices to biomedicine, thus denouncing their own system of medicine to become quacks and earn more.

MR5 also said that during his field visit for sales promotion of his drugs he has seen MD and AM (Doctor of Medicine (MD) and Alternative Medicine (AM)) degrees which are fake but the practitioners boldly display their degree outside their clinic and practice western medicine.

The researcher asked MR5- "*Whether the BAMS (Bachelor of Ayurvedic Medicine and Surgery) and BUMS (Bachelor of Unani Medicine and Surgery) doctors give only herbal medicine or they give western pharmaceutical drugs as well*?"

He said,

> *Nahi Nahi! yahan Bihar mein agar dekha jaye to ayurvedic ka practice bahut kam hai. Ab koi agar bilkul apne aap ko ayurvedic hi man liya hai to wo karta hai lekin yahan jo bhi BAMS ka degree leta hai wo practice karta hai allopathic hi. Wo practice karte hain MBBS doctor ki tarah hi aur gaon mein unko treatment (respect), treat bhi waise hi milta hai. Main ek jagah kaam karta tha, Gorakhpur mein, deoria ek jagah hai bahut bara zila hai. Uske (Deoria) interior mein kaam karta tha. Wahan MBBS doctors ki practice utni*

nahi chalti thi jitni istarah ke doctor ki jyada chalti thi. Patient ka trust hai uspe. Uska karan yah bhi hai ki jahan tak maine dekha hai is tarah ke doctors jo hote hain, quack doctors jo hote hain, jo even BAMS bhi nahi hote hain, wo uske paas patient agar jata hai to, ek- to unki fees kam rahti hai, dusra- wo, cut to the point jo bhi koi patient aata hai to siddha siddha high doze se hi start karte hain. Aa.. high doze se start karte hain to patient ko fast relief to ho jata hai, magar future ke liye theek nahi hai. Kyunki waise agar dekhoon maine interior market mein bhi kaam kiya hai aur shahar mein bhi kam kiya hai. To jo shahar ke jo bare doctors hote hain unka aa.. line of treatment hota hai ki pehle wo low doze se start karte hain, uske baad dheere dheere wo high doze pe jate hain. Phir dusra treatment ye bhi hota hai ki pehlo wo first line of treatment jo hota hai kisi bhi drug ka, wo istemaal karte hain, uske baad higher molecules pe jaate hain.

(He meant- No! no! If we look at in Bihar, Ayurvedic practice is very less. If someone is very keen on being ayurvedic then he only practices Ayurveda but here whoever has BAMS degree, practices allopathic medicine. They practice just like MBBS doctors and in villages they are being treated (respected) by people as they treat the allopathic doctors. I used to work in one place. In Gorakhpur, Deoria is a very big district. Used to work in the interior of that place. Over there MBBS doctors did not have as good practice as such doctors. Patient trust such doctors. The reason for this as far as I have seen that such doctors, those who are quacks, those who do not even have BAMS degrees, if patient goes to him then, one- his fees is less, second- if any patient comes to him then they start with the high dose of medicine. They start with the high dose so patient gets fast (immediate) relief, but is not good for his future (health). Because if I see, as I have worked in the interior rural market as well as in urban cities- so the big doctors of urban cities, their line of treatment start with the low dose, then slowly they move to the higher dose. Then another treatment is also this that first line of treatment of any drug, they use that, then they go to higher molecules (of that drug)).

It is gathered from the above discussion that most of the Ayurvedic (BAMS degree holder) doctors transform their practice to western biomedicine and thus become quacks (definition of quacks is given in chapter 2). Quacks are in high demand by the

people for western medical care however these quacks do not follow standard treatment guideline. The village people have a high respect for biomedical practitioners even if they are quacks and they trust such providers a lot as they have low fees and they give immediate relief to the patients by giving high dose of medicine. On the contrary the trained MBBS doctors who are mostly found in urban cities start with a low dose of first line of treatment of any drug and gradually move to the higher dose if the patient do not get relief. It is observed that for a patient the literacy, the expenditure in the treatment of a disease, as well as the immediate relief are major factors for choosing a practitioner. As most of the people especially in the rural areas are poor and illiterate so they want to get well soon with minimum expenditure so that they do not further lose their working days.

According to an Area Manager of Medical Representatives, MR5, of a pharmaceutical company, who has about eight years of experience in different parts of Bihar, he said:

> *ham aaj tak kisi ayurvedic Vaidya ya BAMS ko ayurvedic practice karte hue nahi dekhe. Wo hamesha angrezi dawa dete hain. Ham log bhi apna drugs bechne ke liye unke pass jate hain. Unko hamari madat se drugs ke baare mein jankari bhi milti hai. Kabhi Kabhi ham CME (continuing medical education) or local conference jo ki PATNA mein hota hai usme leading RMPs (BAMS) doctors ko bhi bulate hain. Lekin conference mein aaye hue allopathic doctors ko; doctors bahut proudy hote hain;… unke (quacks) baare mein nahi batate hain. Unko doctor sahib kah ke hi baki allopathic doctors se introduce karate hain.*

(He meant that in his long experience of field, he had never seen any ayurvedic Vaidya or BAMS degree holder practice Ayurveda. They always give allopathic medicine which is called as “Angreji dawa” means “English medicine”. We MRs also sell our drugs to them. They learn about the allopathic drugs and their use from us. Sometimes we call them (leading RMPs or BAMS doctors) to CME (Continuing Medical Education) or local conference which is usually held in Patna. But the allopathic doctors who come to the CME are ‘very arrogant’, and are often not told about the background of the RMPs. They are introduced to the other doctors as “doctor saheb”).

He said that BHMS have a fixed customer base. Even in Purnea district of Bihar Bengali Homeo doctors are there. They have a long que.

All of the medical representatives agreed that they promote their drugs amongst the quacks of urban and rural Bihar. The quacks are very much dependent on the medical representatives for their pharmaceutical knowledge and its use. Many of these untrained or half trained quacks are the life line of the villages of Bihar. They are very much dependent on the medical representatives for drug knowledge. As informed by most of the MRs they also follow prescription of the trained medical doctors of Patna[29].

It is observed that, the pharmaceutical companies promote their drugs among BAMS doctors and quacks. The medical representatives not only promote their drugs but also train the BAMS and quacks on drug knowledge and its use. They call these practitioners in their Continuous Medical Education (CME) programme which they usually organise for the trained biomedical doctors. The medical representatives are conscious of not introducing their real nature of work to the biomedical doctors for two reasons: -

1. The biomedical doctors who assume themselves to be of high status and knowledge would not like to take CME with such BAMS and quacks.
2. The medical representatives would also not want to lower the status of BAMS and quacks in front of formerly trained biomedical doctors.

MR5 said that in Bihar there were very few MBBS trained doctors or doctors of higher specialisation. Most of these specialised doctors did not want to go in the interior villages. In Bihar BAMS and BUMS, do a six months course and practice allopathy in villages. So, in Bihar a lot of quacks replace the requirement of doctors. MR5 said, *"Dentist bhi physician ka hi kaam karte hain jbki wo MBBS nahi hote".* (He meant that dentist also practice like a physician even though they do not have a degree in MBBS, which is minimum qualification for a physician).

[29] Patna being the capital of Bihar, most of the good doctors are practicing here. It is one of the few urban cities of Bihar which is well developed and where majority of the people have good paying capacity for the doctor's fees.

MR4 also said that the ayurvedic doctor who have BAMS degree also practice allopathic practice. However, Homeopathic doctors do not do such practice. Those who have Bachelor of Pharmacy (B Pharm) degree also carry allopathic practice. One who serve as male nurse or compounder also practice western medicine. Such male nurse registered under civil surgeon can practice legally. In Sitamarhi district of Bihar, the male nurse can get registration certificate by giving money to the civil surgeons. A lot of such doctors are there in Sitamarhi and they sit in clinics which are very well made and it will be difficult to say that the person sitting in it is MBBS or a nurse who got the practice certificate from civil surgeon. They are mostly found in village interiors and not in district town. MR4 and MR1 said that in Patna they can be found in corner place where they cover low profile patients or poor patients. They can be found from Digha to Danapur road in Patna but not in Bailey Road, or boring road which is a posh locality.

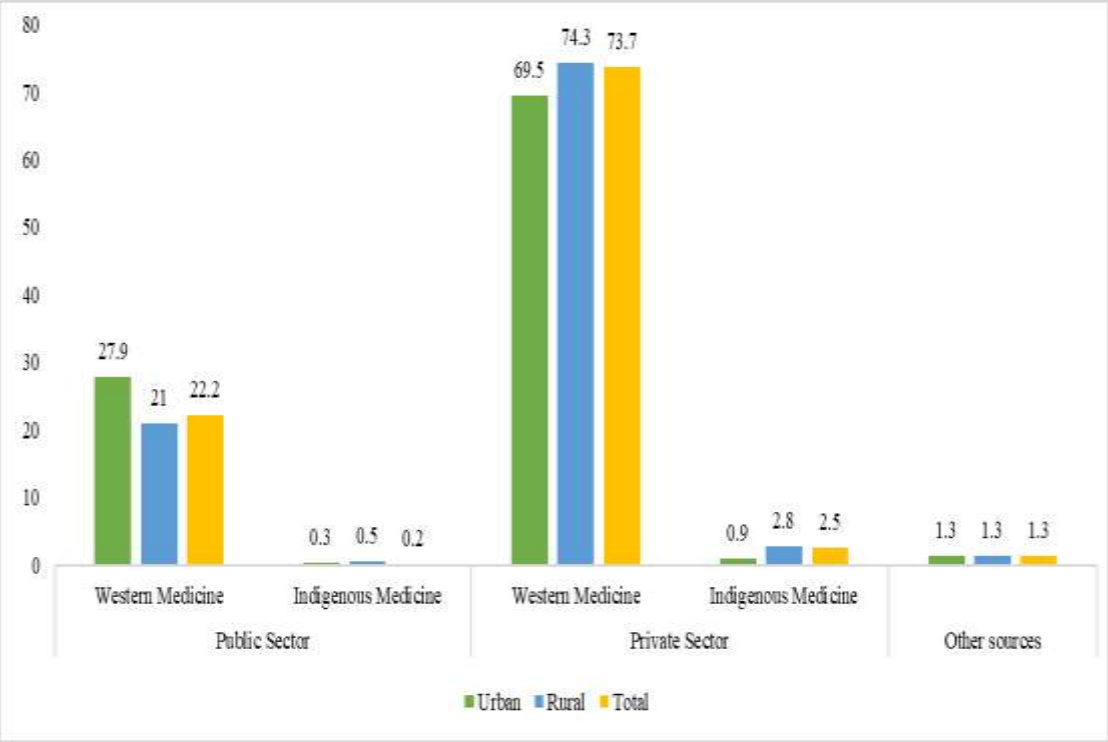
The researcher also observed quacks practicing western biomedicine in the Hussepur village. She also observed a BAMS qualified ayurvedic doctor practicing only western medicine. This is commonly observed in other states like UP, Maharashtra, Chattisgarh, Himachal Pradesh and NCT of Delhi (Chandra and Patwardhan, 2018). Chandra and Patwardhan (2018) found that the AYUSH doctors acquire training in allopathic doctor's clinics and later they join smaller hospitals on cheaper salaries to assist western medical doctors or start their own independent practice. Such people are accessed by rural poor due to unavailability of western medical doctors. Village people know that they are not a qualified western medical doctor but still they approach them for medical consultation and treatment. According to Chandra and Patwardhan (2018) village people visiting quacks put themselves in potential dangers. According to them, the vacuum created by lack of western medical doctors are filled by three types of unqualified medical practitioners-

1) Those who do not possess any recognised medical qualification. The BAMS doctors practicing biomedicine and the doctors' assistants who after few years of working under him, start their own clinic in the villages. These constitute the largest percentage of providers.
2) Chemists- many of whom have no qualification in pharmacology and are proxies of a person in whose name the pharmacy shop license is taken and operated.

3) Traditional medicine practitioners- like bone setters, local herbalist, faith healers, etc.

As regards the use of different sources of health care according to the NFHS-4 (2017, Bihar report) (see figure 5.4) use of western medicine in public sector was 22.2 percent and in private sector it was 73.7 percent. About 21 percent of rural households and 27.9 percent of urban households used Western medicine in public health care sources. In private sector 74.3 percent of rural households and 69.5 percent of urban households used western medical health sources.

Figure 5.4 Distribution by the Source of Health Care that Household Members Generally Use When They Get Sick.



Source- NFHS-4 (Bihar report) http://rchiips.org/nfhs/NFHS-4Reports/Bihar.pdf

Note : 1. In Public sector a) western medicine includes govt. / Municipal hospital, dispensary, Urban Health Center/Urban Health Post/Urban Family Welfare Center, Community Health Center/Primary Health Center (PHC)/rural hospital, additional PHC, sub center, other public sector, NGO/trust hospital or clinic; b) Indigenous medicine includes – Vaidya, Hakeem, Homeopath in AYUSH

2. In Private sector -a) western medicine includes- private hospital, private doctor/clinic, private paramedic, Pharmacy drug store, and other private health sector;

b) indigenous medicine includes- Vaidya, Hakeem, Homeopath in AYUSH and, traditional healers

3. Other sources include- shop, home treatment, and other Households that used indigenous medical care mostly Vaidya, Hakim and Homeopath in public sector was 0.2% and in private sector it was 2.5%. The use of indigenous medical source in public sector was 0.5% in rural areas and 0.3% in urban areas whereas in private sector it was 2.8% in rural areas and 0.9% in urban areas. The total number of households that used other sources of health care like- shop, home treatment, and other was 1.3%. Thus, it is observed that the NFHS-4 (Bihar report) (2017) data corroborates with the qualitative field data of the researcher.

The figure 5.4 shows disproportionate dependence of the people of Bihar on western medical practice. It is observed that in Bihar large number of people use western medicine both in urban and in rural areas, especially in the private sector. This reflects that within the pluralistic health system the hegemony of biomedicine prevails. Less percentage of people use indigenous medicine both in rural and urban areas and people prefer private sector in comparison to the public sector for indigenous medicines as well. The figure also affirms the statements of the medical representatives and the people or patients interviewed who said that the Ayurveda, Unani and Homeopathy is less in practice in Bihar.

We learn that, despite the huge demand for western medicine in Bihar, it is primarily provided by unqualified or half-trained practitioners. Skilled ayurveda practitioners are switching to western medicine and therefore becoming quacks. As according to Medical Council of India ([MCI], 2002) "No person other than a doctor having qualification recognised by Medical Council of India and registered with Medical Council of India/State Medical Council (s) is allowed to practice Modern system of Medicine or Surgery. A person obtaining qualification in any other system of Medicine is not allowed to practice Modern system of Medicine in any form". So, all Ayurvedic doctors practicing western medicine come into the category of quacks and are illegal and half trained doctors.

After a few years of experience and obtaining a training certificate from a training agency, a male nurse or compounder can practise western medicine. It's tough to tell whether someone sitting in a clinic is an MBBS or a nurse just by looking at them.

There are very few MBBS-trained doctors or doctors with advanced degrees in Bihar. The majority of these specialised doctors do not wish to visit the settlements in the interior. As a result, a large number of people in Bihar are dependent on quacks.

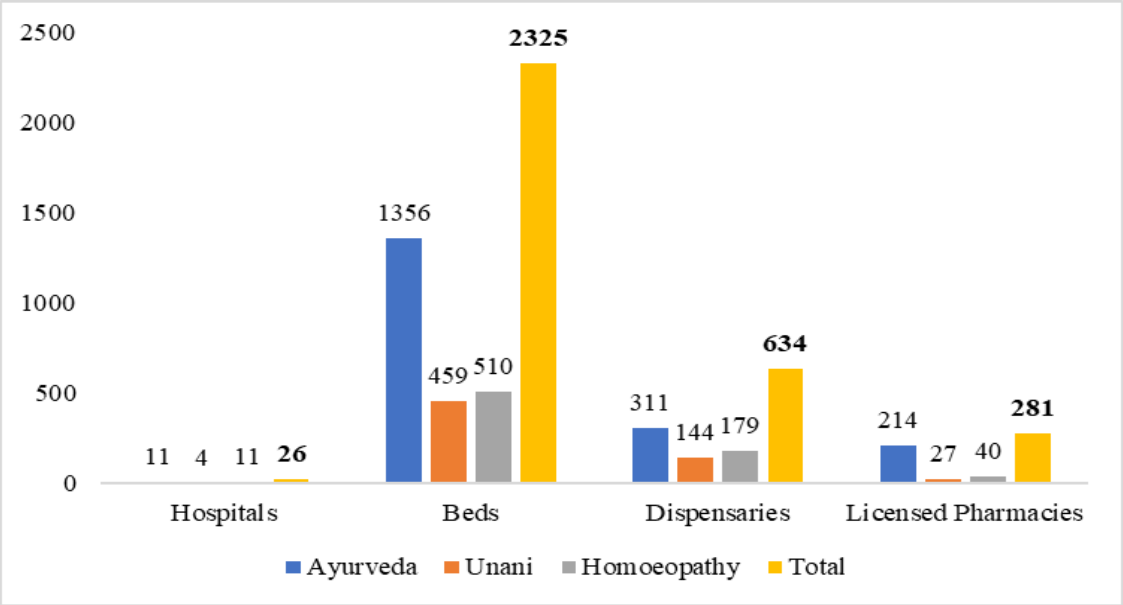
5.6 Lack of Trained Practitioners

The most essential building block of public health is human resources for health. The availability of a sufficient number of human resources with a suitable skill mix, as well as their proper implementation at various levels of the health-care system, are critical for delivering efficient health-care services to the population.

According to Medical council of India there are total of 10,41,395 allopathic doctors registered with different state medical councils and MCI as on 30th September 2017. Assuming an 80% availability rate, about 8.33 lakh doctors would be accessible for active service. According to the latest population estimate of 1.33 billion, the doctor-to-population ratio is 1:1596. In India there is excessive shortage of doctors. This is much below WHO norms which says that there should be 1 doctor amongst the population of 1000 population (Medical Dialogues Bureau, 2018).

In Bihar which is the third most populous state in India, the situation is even more dire. According to Central Bureau of Health Intelligence (CBHI) (2018) there were 40649 registered western medical doctors in 2018 in Bihar. The total number of government allopathic doctors in 2015 in Bihar was 3576. The average population served by one government allopathic doctor is 28,391 as per population estimate of 1,15,26,000 in the same period (CBHI, 2018). This doctor-to-population ratio is well below the WHO's recommended ratio of 1:1000. The distribution of the doctors as according to population density is also uneven.

Figure 5.5 Indigenous System of Medicine, Hospitals, Beds, Dispensaries and Licensed Pharmacies in Bihar



Source: www.ayush.gov.in (accessed on: 23.5.2020)

The total number of AYUSH doctors in India in 2017 was 773668. According to the Ministry of AYUSH, the government in Bihar promotes the Ayurveda, Unani, and Homeopathy medical systems. There are 133327 Ayurvedic practitioners, 4379 Unani practitioners, and 28963 Homeopathic practitioners registered in Bihar. As a result, there are 166669 registered Ayurvedic, Unani, and Homeopathic practitioners in Bihar (CBHI, 2018). The data shows a large concentration of AYUSH doctors with approximately 20% of AYUSH doctors in India are practicing in Bihar. However, the population in general is not able to utilise the benefits of higher number of AYUSH doctors because of lure for western medical practices. The reason for non-usage of AYUSH doctors could be that-

a) Some indigenous doctors are transforming their practice to western medicine to earn more and they are trained further by pharmaceutical companies of western medicine, as observed in the field. More demand for western medicine and promotion of it by pharmaceutical industries is leading to transformation of indigenous practitioners to western medical practitioners.

b) As shown in the figure 5.5 the presence of small number of AYUSH hospitals, dispensaries and other infrastructures for higher referrals also delineates why both the

AYUSH practitioners and the general public opt for western medical practices which has the entire pipeline available. This data corroborates with the findings of Srinivasan and Sugumar (2015) about 25% of non-users of AYUSH mention the ineffectiveness of traditional medicine (perhaps as a result of quacks) as well as the lack of such facilities, physicians, and medications are the reasons for less usage of traditional medicine. As a result, the reasons for not using AYUSH are skewed toward the greater use of Allopathic medicine, followed by ignorance and the lack of AYUSH infrastructure facilities.

According to the study done by Anand, Fan and World Health Organisation [WHO] (2016), the unregistered medical practitioners or quacks outnumber the registered medical doctors in India. The study showed that only 19% of doctors in rural areas have a medical degree and 58% of the doctors in urban regions possess medical degree. Among unqualified allopathic doctors, as many as 31.4% were educated only up to secondary school level (Anand, Fan and World Health Organisation [WHO], 2016). Thus, we see that the need for health care by a huge population in India is met by a large number of untrained medical practitioners. They are the ones providing first line of treatment to the rural villages and many isolated pockets of the urban regions. These informal practitioners are also known as doctors in India (Chandra and Patwardhan, 2018) This way of addressing the quacks as "doctors" was also observed in the field by the researcher as well.

It also needs to be mentioned that Siddha, Yoga, Naturopathy and Sowa-Rigpa is not being promoted by the Government of Bihar. A very famous private "Bihar School of Yoga" located in Munger District of Bihar is present which gives Naturopathic and yogic treatment and training to people around the globe. In Bihar some of the good government AYUSH hospitals are situated and is working under the aegis of Central Research Council of AYUSH. They are conducting good research work and specialise in treatment of specific diseases. For example-Central Council of Research in Homeopathy assigned clinical verification research on 16 drugs in 2014-15 to Clinical Verification Unit (Homeopathy) of Guru Gobind Singh Hospital, Patna City. Regional Research Institute of Unani Medicine, situated in East Boring Canal Road, Patna, has IPD facility with 25 beds and specialize on Filariasis and Kala Azar. It is under Central Research Council of AYUSH. However, the present status of their

research work is not updated in the AYUSH website. Regional Research Institute of Ayurveda situated in Rajendra Memorial Research Institute building, Agam Kuan, Patna has IPD of 25 beds. It gives specialised treatment for Sciatica, Malabsorption Syndrome, Anaemia, and Geriatric Disease (Ministry of Ayush, 2021).

5.7 Indigenous Medicine and Market

The impact of western medical practices on indigenous medical practices and vice versa is discussed in the below sub-sections.

5.7.1 Impact of Western Medical Practices on Indigenous Medical Practices

The demand for western medicine has such sway in Hussepur village that a qualified BAMS doctors who couldn't make enough money from his ayurvedic practise in contrast to the village's other western medical practitioners has converted to an allopathic practitioner. The motivation to transform his practice was more so as the village biomedicine practitioners were not formally trained and on top of it, they were earning more than the BAMS practitioners. He converted his practise to western medicine as he was better trained than other practitioners in healing as well as to ensure a steady stream of profits. However, it was observed that he never used any of his Ayurvedic expertise to diagnose or treat his patients due to the influence of western medicine.

The researcher's observation in his clinic in the summer of 2008 says a lot about his practice –

> *A patient with stomach ache came to the doctor. The patient said that he has to get well as soon as possible because he had to attend a Barat (wedding) of one of his relatives the next day. The doctor- BAMS1, examined his stomach, prescribed an allopathic medication, and gave the patient a saline drip. During her one-hour observation in his clinic, the researcher noticed that he gave injections to the majority of the patients.*

According to MR5,

> *there are very few MBBS-trained doctors or doctors with higher specialisations in Bihar. The majority of these specialised doctors do not want to visit the villages in the interior. So BAMS and BUMS in Bihar can take a*

six-month course and practise allopathy in villages. Such doctors are considered as quacks according to MCI. As a result, several quacks (indigenous doctors and assistants of doctors who practice western medicine in villages) have stepped in to fill the void left by doctors in Bihar.

MR5 continues *"Dentist bhi physician ka hi kaam karte hain jabki wo MBBS nahi hote,"* (He meant that dentist also practise like a physician even though they do not have a degree in MBBS, (which is minimum qualification for a physician).

If we look at ayurvedic and homeopathic drug packaging and marketing we find that these indigenous systems are bringing improvements in them to put themselves at parity with the current biomedical market system. In contrast to the erstwhile method of customised drug preparation for each patient by an ayurvedic doctor, ayurvedic medications are packaged similar to allopathic drugs, including the listing of ingredients on the bottles. Fresh Powders and Pastes are now given in tablets or liquid forms. Ayurveda has casted itself in the line of the modern medicine especially in drug packaging to compete with modern medicine. Geest et al. (1996) say that indigenous medicines try to create a prototype of western medicine in terms of packaging and marketing their products, to diminish the status difference between them. The pluralistic Ayurveda was transformed to one Ayurveda. In cities the Vaidyas sit in clinic as opposed to traditional home-based clinics and their fees is in competition or sometimes more in comparison with the biomedical doctors. However, it has still not been able to come out of the inert boundary of traditional medicine and has not been able to come at par with modern medicine. This is due to overt and covert power and politics over the capital resources; of the elites whose interest lies in the interest of the biomedicine (Bannerjee, 2013)

Medical representatives of the indigenous pharmaceutical industries promote their drugs among the trained medical practitioners. As a homeopathic quack (Q6)[30] in Patel Nager informed that there are medical representatives of homeopathic pharmaceutical companies who sell costly drugs among the trained medical practitioners. It can be recalled that MR5 said that the medical representatives of the western pharmaceutical companies do not compete with the medical representatives of the indigenous pharmaceutical companies as they promote their drugs among the

[30] Code name of the homeopathic quack.

trained indigenous medical practitioners. However, MR5 also said that the drugs of Himalaya herbal companies are well known and prescribed among the gynaecologists of western medicine. Hence, it can be inferred that a few MRs of indigenous pharmaceutical companies do visit the western medical practitioners for the marketing of their well-established products. However, unlike the MRs of western pharmaceutical companies, they avoid aggressive marketing to all kinds of providers and restrict their marketing mostly to Homeopathic doctors.

The scientific validity of indigenous medical systems is constantly questioned by the specialist guild of Western Biomedicine. Modern biomedical doctors have raised serious concerns about 54 surgeries that were permitted to be performed by ayurvedic doctors (Express News Service, 2020). Western Biomedicine still politically try to dominate over the indigenous medicine. Biomedicine requires "efficacy" with standardised and methodical scientific processes since it examines efficacy from a scientific perspective. Biomedical "efficacy" has come to dominate despite the methodological incompatibility with the fundamental principles of alternative medicine and the nature of its practise. But how one gathers evidence of efficacy, is the problem. When holistic and comprehensive analysis is neglected in favour of a restricted, and constrained research technique, an elite criterion is created that demands extraordinary resources in order to reach what appear to be straightforward solutions (Webar, 2016). Expensive research serves solely the interests of the elite who control it and thus research in poorly funded indigenous medicine suffers.

In covid pandemic during first wave, where resource scarcity was a major problem indigenous medicines had the potential to cater to the larger public for preventive measures, like karha, immunity boosters etc. It is known that apart from the symptomatic treatment of the morbidity caused by the Corona Virus- 'COVID-19', western medicine did not have any cure for the disease. As our private and public health system is dominated by the western medical hospitals so the government had no choice but to arrange for the symptomatic treatment and quarantine of the affected patients in it. However, this did not mean that other indigenous health systems were not capable enough to take care of the symptomatic treatment of the disease. The pervasive mind set as seen from the WhatsApp messages of the public was that the majority believed that western medicine was the only cure for the disease. In the

WhatsApp share anyone who believed in developing immunity with ayurvedic home remedy to fight the disease and shared his/her thought with people was taken as spreading rumours and was snubbed by the staunch believers of western allopathic system.

The discourse on western medicine has created a mindset among the larger population that it is the best medicine and other indigenous medicines are not very scientific and cannot be relied upon. This is another major hurdle in the popularity and spread of indigenous medicines.

5.7.2 Impact of Indigenous Medical Practices on Western Medical Practices.

From the field observations it is inferred that in chronic diseases Ayurvedic medicines are preferred or else a combination of biomedicine and ayurvedic or homeopathic medicines are preferred by the patients. Due to side effects of biomedicine people prefer to take indigenous medicines which have fewer side effects and give better treatment results. P6 working in CI (name coded for a non-government organisation working in the field of health in Bihar) in Patna also said that he took both ayurvedic and allopathic medicines for his father's chronic illness of chest. P10 suffering from chronic illness of cardiac and diabetes and P9 suffering from diabetes also informed that they take both ayurvedic and allopathic medicines alternately according to their symptoms and convenience. The owner (Pharm1) of KMH (name coded for an allopathic pharmacy store) explained that now people prefer to go for ayurvedic practitioners more for the chronic diseases as the allopathic medicine has more of side effects and ayurvedic medicines have very less or negligible side effects. Due to high demand for ayurvedic medicines he (Pharm1) also has a separate Ayurvedic pharmacy shop by name KAA (name coded for Ayurvedic pharmacy shop), right opposite their western medical drug store at Boring Road Chowraha (a very busy urban market place in Patna), as there are many customers of ayurvedic medicines and he did not have enough space in one shop to keep both kinds of medicine. Hence it can be inferred that the presence of a separate Ayurvedic pharmacy store in a busy uptown urban market shows the popularity of indigenous medicines among the people of Patna.

In KMH, (the shop for allopathic medicines) it was observed that some of the Ayurvedic medicines like live-52, Adliv Syrup and capsules, Zandu Balm and Moov

were kept as some of these medicines are prescribed by the western medical doctors or bought by the patient Over the Counter (OTC) when they come to buy allopathic medicines. Pharm1 said that the allopathic doctors carry out mix practise. In certain diseases like in Jaundice liv-52 is prescribed (he said that for jaundice more of ayurvedic medicines are prescribed than allopathic medicines), for pain Zandu Balm or moov is prescribed; some other ayurvedic medicines are Essential Ayurveda Triphala, Adliv – syrup and capsule. He said that ayurvedic medicines are made of herbs and allopathic medicines are made of chemicals, that is why there is no side effect of the ayurvedic medicines or even if it is there, it is negligible. He also said that patients like to go to those shops where they can find both allopathic and ayurvedic medicines as "one stop shop". That is why in his shop he had kept 96% of the allopathic medicines and 4% of the ayurvedic medicines. Some of the ayurvedic companies whose medicines he keeps are: - Dabur, Baidnath, Zandu, Unjha, Gurukul Kangri, Vyas, Himalaya, Hamdard and Himani. He informed that Ramdev baba and Asharam Bapu have their own ayurvedic medicine manufacturing units. He said that Dabur and Baidnath companies had started their first manufacturing units in Bihar. Companies like Dabur, Baidnath, Unjha, Zandu, and Himalaya have very less products about 20-25. Himalaya company has split into two – Himalaya Herbo and Himalaya. While the researcher was talking to Pharm1- a customer came to ask for orthovit oil capsule. As it was an ayurvedic product so Pharm1 directed him to his ayurvedic shop KAA on the opposite side of the road.

It is observed that Pharm1 had both allopathic and Ayurvedic shops for which he had to pay separate rents. The rent also must be high as the shops are in a commercial place and strategically at the main crossing of the boring road which has a row of different shops on both the sides. For shops opposite to each other he must be tapping the customers of both systems of medicine. It is convenient for customers also as, if the doctors prescribe from both systems of medicine, then they can get it from one place. He must be getting good profit from both the shops.

The researcher observed that it is very common for the pharmacy shops keeping western medicine to keep some of the popular ayurvedic medicine as well. For another example- while Pharm2 of Patel Nagar market was dictating the names of the medicines that he kept in his shop to the researcher, he very religiously turned back to

the stock of medicines kept in the shelves behind him to see the company names written on the medicines, to dictate her the names and their spellings. While dictating the names of medicines one by one he came across a medicine of Hamdard company (an ayurvedic company) and asked the researcher to write its name too. The researcher came across some more of the pharmacy shops that kept popular herbal drugs of other system of medicine, particularly Ayurveda.

Traditional medicines according to MR5 have a huge market. He said that Himalaya (an ayurvedic company) promotes drugs among all doctors including the western biomedical doctors. Its pain killer division gives gifts to all doctors, even the allopathic doctors. It is one company that gives competition to MRs of western pharmaceutical companies. He says, *"gynae mein Himalaya ka achcha pakar hai. Lactating aur pregnant mothers ke liye uska drugs achcha hai" (*he meant that for treatments relating to gynaecology and obstetrics its medicines are good. Its medicines are also good for lactating and pregnant mothers). It sells its Liv-52 brand among the allopathic doctors. An interaction with an allopathic doctor in Delhi, Dr9 revealed that there is no medicine in allopathy which can be as good and effective for liver as liv-52. So, all the allopathic doctors prescribe Liv-52 for liver related ailments.

Regarding the doctors' prescription habit of prescribing ayurvedic drugs it is seen that western medical doctors also indulge into quackery as according to MCI directives they are not supposed to prescribe ayurvedic medicines. The impact of indigenous medicine market is such that western medical doctors also depend on its medicine and particularly for chronic diseases it seems to be the best option available to the patient.

MR4 informed that many of the chronic (the diseases which have long term use of medicines) patients went to the Homeopathic or ayurvedic doctors. He said that now the western medicine is more in practice however the indigenous medicines have not lost their market. Many indigenous herbal companies have drugs- to increase height, weight loss, increase the fairness, reduce hair loss, flatulence. They do not have antibiotic drugs. Their drugs are mostly sold over the counter (OTC) by the chemists. There is very negligible fight of allopathic companies with the indigenous companies. The indigenous companies do not indulge in aggressive marketing strategies. Only few companies advertise their products in TV and magazines like Dabur and

Himalaya. He further continued that such companies have different customer segment. But due to AYUSH and changing government policies the competition between the indigenous medicine companies and pharmaceutical companies may increase. The number of Ayurvedic and Homeopathic doctors have also increased.

P7 while talking about Unani doctors he said that many of them do not hold any degree. In local language these doctors are called as "Zarrah" and their clinic is known as "Zarrah Dawa khana". These doctors are known among the local people as the one who does *"Chiir Faar" (**चीर फाॅर**)*. They usually do small surgeries for taking out puss and abscess in small wounds. For such small surgeries he would charge from 150-200 or maximum Rs 500 including the medicine. Whereas for such small surgeries a western allopathic doctor would take Rs 500 as his consultation fees, write some tests and medicines and the total cost may come up to Rs 1000-2000. That is why Zarrahs are more commonly sought by the poor people who most often get successfully treated by them.

While talking about a Homeopathic doctor P7 explained that there is a homeopathic doctor who sits in Raja Bazar in Patna district. He sees 100-150 patients per day. The consultancy fee for such doctors is usually 200-250/ and the medicine cost is included in it. Whereas for western allopathic doctors a patient has to spend maximum of 1500-2000 per visit which includes – doctors consultation fees, tests and medicine cost.

Dr8, is a Bachelor of Homeopathic Medicine and Surgery (BHMS) degree holder, working in CI (NGO). He has clinical experience of about eight years. He said- *Allopathic and Ayurvedic medicines are costly in comparison to Homeopathic medicines. However, in Homeopathic medicine profit margin is too high. As a patient can be seen for Rs 10 or Rs 8 and a homeopathic doctor will still be making profit because the drugs that he gives is in highly diluted form. He also informed that a homeopathic doctor never gives a prescription as they will not get the recurring fees from the patient. The same medicine is made in diluted form which is often repeated many times for the patient but the patient has to give same consultancy fees for each visit.* Regarding the side effects of Homeopathic medicines, he said that, *it is sometimes very strong as it can alter the taste of patient and the choice of his food.*

The researcher's observation also showed that Homeopathy is practiced exclusively and is not influenced by the medical representatives of herbal or chemical pharmaceutical companies. Some homeopathic doctor's clinic was observed in Baba Chowk and Patel Nagar market area. Among them a very old and well-established homeopathic clinic by the name of the practitioner Dr. B. Bhattacharya is very famous. His shop is situated at a T junction in Patel Nager and the road in front of the clinic is also christened as Dr. B. Bhattacharya Road. In the same locality about one a kilometer away a homeopathic quack was also observed practicing in Shakuntala market near Kesari Nagar. He does not take consultation fee, just the charge of medicine which may range from Rs 50-150/-. On the contrary people have to take appointment for Dr. Bhattacharya's clinic and his consultation is Rs. 250-500. Hence in the same vicinity people visit different practitioner depending on the money they want to spend on their ailment, the severity of the disease and their capacity to pay. If the disease is severe then they are forced to visit the trained practitioners otherwise they are happy with the quack.

It is observed that indigenous medicines are cheaper and affordable so it is preferred more by the lower-class people and the upper-class people who have a wider choice of medicines most often prefer to take indigenous medicines to avert the side effects of western medicines. The notion of "cheap and affordable" indigenous medicines is contested in the findings of Srinivasan and Sugumar (2015), however they also conclude that indigenous medicines are preferred by both lower class and upper educated class people. The *Zarrahs* are mostly found in the Muslim inhabited areas as they are preferred mostly by the Muslim population and by very few of the other caste and religion people inhabiting nearby.

MR5 repeatedly mentioned during the interview that there is a strong demand for western medicine in Bihar and that there are few ayurvedic doctors. He agreed that Patanjali Vaidyas are becoming more common, but they are not the first line of treatment. He did admit, however, that many western medical doctors now envy Patanjali Ayurvedacharya because they are attracting a large number of patients. He thinks that because of Ram Dev Baba's support and promotion of Ayurveda, Patanjali Ayurvedacharya's are attracting an increasing number of patients.

Patanjali Ayurved Limited, the country's fastest-growing FMCG company, is a mineral and herbal products company established in 2006 and based in Haridwar's industrial areas. The company's products are in the personal care and foods divisions, as well as baby care and beauty products. It posted a turnover of rupees 10,561 crore in 2016 and is expecting a 10-fold jump in the next five years (HT Business, 2017).

Thus, we see that traditional medicine has a great potential to give tough competition to the western pharmaceuticals, if promoted commercially with the aid of government support and simultaneous expenditure on research. Even in the relative dearth of good evidence-based research and finance to develop its manufacturing and marketing strategies, it still has a significant impact on the western medicine market. The market of traditional medicine is picking up due to change in mindset of people and realisation of growing importance of traditional medicine to cater to the local needs. The adoption of strategies by traditional medicine to prove its worth and its scientific nature to western medicine; adaptation to the changing medical landscapes[31] and needs of the people; is gradually increasing its demands.

In the second wave of COVID-19 pandemic when the pharmaceutical drugs were sold at exorbitant price, the indigenous remedies like pranayama, *karha (काढ़ा)*, steam, saline gargle and some of the ayurvedic medicines and homeopathic medicines was much talked about as cheap options and accepted by all as a potential preventive medicine with scientific reasons. The doctors themselves admit that medicines like Remdesivir, Tocillimazub were not effective and urged people not to horde or indulge in black marketing.

Thus, it is observed that the impact of indigenous medicine on western medicine is both overt and covert, however it is not acknowledged. It is observed that because of intrinsic value indigenous medicines for having less side effects, better management of the chronic diseases, and cure for some of the diseases for which biomedicine does not have good drugs and treatment, it is preferred over the western medicine by the people. Indigenous medicines are also preferred by people due to their low cost, provided mostly by quacks. Thus, we see that indigenous medicines gives alternatives

[31] Medical landscapes is defined by Hsu (2008) as, 'the notion of medical landscapes implies social processes, relatedness, and movements between foregrounds and backgrounds, and across boundaries' (as cited in Penkala-Gawecka and Rajtar, 2016).

to the people where western medicine fails due to its high cost. The impact of indigenous medicines can also be observed from the presence of ayurvedic medicines in almost all the allopathic pharmacy shops which shows that people prefer to have mix treatment. The allopathic doctors prescribing ayurvedic medicines also shows how deep is the influence of traditional medicines on the western medical practitioners. The Western medicine doctors also indulge into quackery. Certain medicines like Liv-52 are example of such deep impact of Ayurveda on the Western medicine. Thus, we see that indigenous medicine has substantial impact on the western medicine. The marketing of indigenous medicines needs to be looked at to promote the indigenous medicines which can bridge the gap created by the western medicine in Bihar.

The presence of KMH (allopathic pharmacy) and KAA (ayurvedic pharmacy) opposite to each other in the busy urban market place of Boring Road, Patna shows that indigenous medicines are also having good demand, however the absence of more of such shops in the same regions in comparison to the mushroomed allopathic pharmacy shop shows that indigenous medicines need to be revived and supported. A few of the ayurvedic pharmaceutical companies like Himalaya are selling their drugs to the local biomedical pharmacy shop as well as promoting their drugs through their medical representatives among the western medical doctors especially the gynecologists however, such practices are rare. The adoption of aggressive marketing strategies by the indigenous pharmaceutical companies like Patanjali is a rare phenomenon. The reason for this could be that there are very few trained indigenous practitioners among whom those drugs can be promoted to increase their sale, as well as the demand is also comparatively less due to lack of awareness as well as due to absence of other infrastructural facilities. The ethical marketing of indigenous medicines needs to be looked at to promote the indigenous medicines which can bridge the gap created by the western medicine in Bihar.

It seems that people's awareness about indigenous medicines has increased, however its demand has not increased substantially in the absence of secondary and tertiary level of care, and of course due to lack of good practitioners. Indigenous medicine has substantial impact on western medicine, although it is not acknowledged by the western medicine for certain political and economic reasons of its own.

5.8 Political Economy of Indigenous medicines

It is estimated that the primary health care of over 80 per cent of the world's population still depends on plant based traditional medicines (World Health Organisation [WHO], 2002 as cited in Singh and Jha, 2008). The requirement of such medicine is not only huge but is also expanding. In developing country, a huge number of people live in extreme poverty so they depend on herbal medicine for primary health care. According to a survey done by Srinivasan and Sugumar (2015) less than 30% of Indian households use the traditional medical systems, This is a very low spread of traditional medical systems in the country that has a very long history of more than 20 centuries in these traditional medical systems.

This can be explained in the words of Weber (2016)- When medicine turned into an economic good and the for-profit healthcare sector took control of medical research and health care delivery, a strong hegemony gained enormous power. The continued hegemonic framework is based on money and political power, which controls how medicine is defined through the co-optation of economic reality and political power. Hegemonic medicine has the political and economic might to ensure that it and it alone defines what is right and the proper course of treatment for what that medicine determines to be illness. This is reflected in the budget of AYUSH and Ministry of Health and Family Welfare.

When we compare the budget of AYUSH and Western medicine we see that there is huge gap in budget allocation and major chunk of the health budget is allocated for the western medicine.

5.8.1 Comparison of Budget of AYUSH and Western Medicine

Total budget for AYUSH (given in Table 5.3 on page 234) was INR 1,553 crore for the FY 2018-19 whereas total budget for MOHFW for the same financial year was 56,045 crores. MOHFW has two departments: Department of Health and Family welfare allocated 54,303 crore and the Department of Health Research allocated 1743 crore out of 56,045 crores. Another problem with AYUSH budget is that it is fragmented for the various systems of medicine like- Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy whereas the budget for western medicine is all inclusive and exclusive for the development of western medicine on

various fronts. Thus, we see that there is huge difference in the budget allocation of Ministry of AYUSH and MOHFW. This itself shows that states support is still very less and insignificant. Out of the total budget allocated, there is insignificant amount allocated for capital establishment i.e., for building of fixed assets like hospital buildings, land, equipment etc. The absence of hospitals, and other infrastructure is one of the main reasons for less usage of AYUSH. Thus, the reasons for the non-usage of AYUSH are tilted toward the larger presence of Allopathic medicine, followed by lack of awareness, and nonavailability of AYUSH (Srinivasan and Sugumar, 2015).

Table 5.3 Budget of Ayush and Ministry of Health and Family Welfare (MoHFW)

AYUSH Budget during 2018 to 2020		**Budget Allocation for the MoHFW**		
Years	**Total Budget**	**Health & Family Welfare**	**Health Research**	**Total Budget**
2018-2019	1553.98 Cr	54,303	1743	56,045Cr
2019-2020	1939.76 Cr	62,659	1900	64559Cr

Source: https://prsindia.org/budgets/parliament/demand-for-grants-analysis-health-and-family-welfare (accessed on 25.5.2020)

Analysing deeper the budget allocation for the two ministries it is observed that the total budget allocated for autonomous bodies of western medicine is 7820.33crore for 2020-21. There are eight major autonomous bodies under the aegis of western medicine in which major chunk is allocated to AIIMS and the budget is 3489.96crore for the financial year 2020-2021 ((Ministry of Health & Family Welfare [MoHFW], 2022-23). On the contrary in AYUSH there are five major autonomous bodies- two for Ayurveda, two for homeopathy and one for Unani. Central Council for Research in Ayurvedic Sciences (CCRAS) is one such autonomous body with the budget

allocation of 297Crore and has about 30 peripheral institutions under it located in various states. In Patna (the capital of Bihar) there is one such peripheral institute-Regional Ayurveda Research Institute for infectious Diseases, located in Rajendra Memorial Research Institute Building, Agam Kuan. All India Institute of Ayurveda is like AIIMS and is allocated budget of 76.50 crore for FY 2020-21 that too only Revenue budget and no capital budget. Similarly National Institute of Homeopathy, Kolkata has been allocated 75.50 crore for FY 2020-21. The budget of both the institute together is 152 crores (Ministry of Ayush [MoA], 2022-23). On the other hand, AIIMS has been allocated a budget of 3489.96 crore for FY 2020-21 (MoHFW, 2022-23). Thus, we can see that as the indigenous medicines are clubbed under the aegis of AYUSH the distribution of budget among each system of medicines further reduces the amount of allocation and the possibility of research and development of each indigenous healing systems.

5.8.2 IEC Budget in AYUSH

A total of 92.62 crore out of 2126.08 crore in FY 2020-21 allocated to Ministry of AYUSH, was spent in revenue under the establishment expenditure of centre. For strengthening of AYUSH delivery system major chunk of the budget is spent in information, education and communication (IEC) and promotion of international co-operation, that is out of the total budget of 117.96 crore for 2020-21, 20.93 crore is allocated for IEC and 43.87 crores allocated for promotion of international co-operation (MoA, 2022-23). Expenditure in IEC is much needed as according to the study done by Srinivasan and Sugumar (2015) point out that lack of awareness of traditional medicine is also one of the main reasons for less usage of traditional medicine.The education programme for self-health care is implemented since 1997, however people's knowledge in this regard is still limited, people hardly know about such IEC activities in Bihar.

The huge difference in allocation of fund explains that even after seventy-three years of Independence the central government is not able to restore and develop Ministry of AYUSH. This is also because western medicine is so deep-rooted and developed that it forms the strong structural institution of our health care system. Government of India converted Department of AYUSH into Ministry of AYUSH in 2014. Programme on Ayurveda and Biology integrated health research was introduced only

in 20-21 budget. The half-hearted promotion of AYUSH shows that we are still not independent of the western imperialist hegemony and the government has also not taken enough steps to revive our indigenous tradition.

5.9 Discussion and Conclusion

In the presence of existing medical pluralities or medical diversities, it is observed that western Biomedicine is hegemonizing the other systems of medicine. In the Indian context this western Biomedical hegemony has marginalized the indigenous systems of medicine, and has made a consequential difference to the life of people.

It is also observed that people often follow pluralistic treatment regime. They not only practice pluralistic health practices but they visit multiple practitioners may be at the same stage of their illness or they visit multiple practitioners at various stages of their illness. However, they demand and are more dependent on western medicine especially for acute illness requiring immediate relief. People depend on indigenous systems of medicine for many of their illnesses especially for chronic illnesses which requires taking medicine for a long time. They prefer to take indigenous medicine along with the western medicine, if available, to reduce the side effects of allopathic medicines on their body. People have their own reason for seeking different systems of medicine at various episode and stages of illness, which is also determined by their own position in the social stratification and the seriousness of their illness. As people especially poor people, first visit quacks or chemists, at the first stage of their illness to get relief. If the symptoms continue further and they do not get relief then they think of going to the trained doctor. Economy of a house and the market economy interact with each other at every stage and to a great extent a principal factor influencing the people's choice and decision when they try to regain their health. However, the markets dominate in creating a high demand for western medicine. In the case studies presented, it is seen that the excessive dependence on western medicine and the absence of quality services, many a times put people into trouble as can be observed from the abortion related problems and deaths of women.

Under the influence of western medicine many indigenous practitioners transform their practice to biomedicine. This is abetted by the pharmaceutical companies who give informal training to quacks and indigenous doctors on drug use and assist them

in continuing their practice. The pharmaceutical industries send their medical representatives to the field i.e. to every nook and corner of rural and urban places of Bihar where people go to seek health services. They do not bother whether the side effects of medicines given by untrained or half trained quacks further create a new set of health problems for the people or would increase the out-of-pocket expenditure of the people and would push them further into poverty. Another impact of pharmaceutical industries is that they are reducing the number of indigenous practitioners by training them into western medicine. They are increasing the number of quacks in western medicine and thus further deteriorating the quality of western medicine. Thus, we see that the capitalist's interest is only in gaining more and more profit. In the disguise of promoting their pharmaceuticals to the doctors, they are training and increasing the number of quacks and thus further reducing the health of the people. They are creating more demand for western medicine by supplying more practitioners in the form of quacks and reducing the standard and quality of western medicine.

Hence the role of pharmaceutical industries in the field needs to be regulated and they need to do ethical marketing practices. This will be taken care of automatically if we increase and develop indigenous medicines. This will reduce the demand for western medicines. Regulation of market is very much required in Bihar to increase health of the people.

Another dilemma is whether to allow AYUSH practitioners to legitimately practice Allopathy or not. As states like Bihar, UP, Assam, Punjab, Tamil Nadu Gujrat allow the BAMS doctors and Homeopaths to practice allopathy under Rule 2 (ee) (iii) of the Drugs and Cosmetics Rules, 1945 of the Drugs and Cosmetics 1940 (Chandra and Patwardhan, 2018). Such practice has been questioned by Delhi Medical Association and the matter is in the court. This is an ongoing debate whether we need to have medical plurality wherein each system purely retains their basic philosophy and principles based on which their system works or we need to have medical diversity wherein each medical system learns and try to imbibe the best practices from each other. In reality both medical pluralism and medical diversity exist in our society. Hence research on integration of medicines needs to be done and the understanding of field practices needs to be incorporated to assess how far medical diversity can be

practiced. Then only a proper training curriculum and syllabus can be developed. However, the research on the indigenous systems of medicines needs to be done and their budget allocation need to be increased to further develop these systems to come at par with western biomedicine and assist these systems to meet the emerging health challenges.

In Bihar there are very few MBBS trained doctors or doctors of higher specialisation. Most of these specialised doctors do not want to go in the interior villages. In Bihar a large majority of people depend on quacks or informal practitioners. This many a times becomes detrimental for the people who already suffer from high morbidity, poverty and malnutrition. Lack of good practitioners both western and indigenous, lack of infrastructure in proportion to large population; increases the dependency on quacks. Market (pharmaceutical promotions) further adds on to the problems created by quacks and also increases the number of quacks. As a result, these quacks come as a boon and doom for the people of Bihar. Many a times they fill the gap of the western medical doctors and many a times due to inadequate training they incur heavy damage to the people. It is very unlikely that even with the expansion of medical colleges and seats to increase the number of trained doctors, the doctor population ratio in rural areas will improve. The medical graduates would prefer to stay in regions which not only give good remunerations but is also beneficial for their further training and has all the modern facilities for transportations, education, recreation, educated neighborhood, etc. for their family members. These facilities are present only in the urban areas and their periphery, so the trained medical practitioners will gravitate in these regions only. It has been found that indigenous AYUSH practitioners who pursue allopathic training sometimes open their own independent allopathic practices or work for less money in smaller hospitals. Thus, it is quite evident that it is very difficult to completely replace the quacks. Thus, the researcher would like to advocate for the training of interested potential rural students in medical colleges, or medical training institutes who can provide for the first line of medical treatment back in their native villages. The already functioning quacks in the villages should be included in this and their knowledge and practice can be assessed at regular intervals through license exam or on the job training in their own field. There is a need to revisit the concept of licentiates in 1940s who were professionals trained for 3-4 years in medical colleges. Likewise, such licentiates should also be created in

indigenous medicines by giving them training in colleges of indigenous medicines. Such licentiates or medical auxiliaries can be accredited to the wellness centers announced in 2018 budget as suggested by Chandra and Patwardhan (2016).

The indigenous pharmaceutical companies try to follow the marketing strategies of the western pharmaceutical companies, vis-à-vis maintain drug manufacturing standards, drug packaging, drug promotion through medical representatives etc. to increase their sales and earn more profit. Here the dilemma is whether they should copy the western pharmaceutical industries or not. As, if they have to engage in research and development, they have to generate more revenue and thus copy marketing strategies of western pharmaceutical industries. In doing so if they indulge into unethical marketing strategies to increase their profit then they will not be able to do justice to the health of the people. However, most of these indigenous companies do not indulge into aggressive advertising and marketing strategies as they operate on small scale or lack revenue or their customers are limited. A few of the companies who are becoming famous are entering into this trend of advertising and marketing as they are having a higher turnover of profit, a percentage of which they are putting into advertising and marketing. For example -Patanjanli and Himalaya.

As Western medicine (or Biomedicine) is the most dominant system in our Indian health system that claims to be scientific and evidence based, the incorporation of indigenous medicines is the biggest challenge that has to prove its scientific worth in the terms of biomedicine. It is also observed that Western medicine is putting pressure on indigenous systems of medicines to prove their scientific validity in spite of methodological differences between them. The scientific validity of many facets of indigenous medicines has to be established and research needs to be done to further develop those indigenous medical systems, keeping intact their methodological principals. In a mixed economy like that of India the cultural, political and economic structures often seem to suppress the indigenous systems of medicine to establish biomedical hegemony. The continuity and growth of other indigenous systems of medicine namely Ayurveda, Siddha and Unani, and Homeopathy has put them into constant negotiations with western biomedicine. Medicine and health care has become a commodity for profit making and those who have money and political power dominate the medical systems. This is also because western medicine is so deep-

rooted and developed that it forms the strong structural institution of our health care system. Government of India needs to spend more in health sector, especially in Ayush to attain Sustainable Development Goal (SDG) 3: "Good Health and Well Being" for all at all ages.

The indigenous medicines are clubbed under the aegis of AYUSH. The distribution of budget among each system of medicines further reduces the amount of allocation and the possibility of research and development of each indigenous healing systems. The budget allocation of Ministry of AYUSH needs to be increased, so that infrastructural development can take place. For example, more hospitals, colleges, research institutes can be developed and proper IEC can be done to increase its usage and spread.

If we look and compare the micro-level realities with the macro-level planning and policies, we find a stark differentiation between the two. People at micro-level prefer to have pluralistic health practices in which they like to visit practitioners of different systems of medicine at different times of their needs and requirement. People may not mind using the integrated medical facilities provided it is affordable and accessible. However, a look at the macro-level planning and policies show that the health policies are providing a suitable environment for further corporatisation and capitalisation of the western health market. The private health sector is deregulated and the pharmaceutical industries are provided with lot of benefits to increase their profit. Hence it is recommended that the health policies need to be made in accordance with the grassroots needs of the people and not in accordance to the market or big pharmaceutical companies or corporate hospitals.

In Bihar usage of AYUSH or indigenous systems of medicine is more (38%) in comparison to all India usage (30%) (Srinivasan and Sugumar, 2015). Likewise, the number of registered practitioners is also more i.e., 22% however, due to absence of hospitals and secondary and tertiary referral systems, the usage of indigenous systems remains only at the primary level mostly at the household level for Ayurveda and private healers for homeopathy. This is corroborated with the study done by Srinivasan and Sugumar (2015). As observed from the field the presence of quacks further reduces the faith of the people in these indigenous systems. Absence of belief in the efficacy of the indigenous medicines, among the people; lack of infrastructural facilities for secondary and tertiary care; lack of awareness are the reasons for less

usage of indigenous medical systems. This further puts a lot of pressure on the infrastructure and facilities of western medicine present in Bihar. The high density of population in Bihar further adds on to the existing problem. Therefore, the infrastructural facilities of Ayush need to be developed in Bihar.

In spite of the vigorous expansion of western medical practice and the increasing demand for it on the other side, it is noteworthy that the demand and practice of indigenous medicines have not waned. The prescription of the drugs of Himalaya company or liv-52 by the western medical practitioner, stands testimony to it. Some of the ayurvedic medicines are so good that even western medical doctors prescribe them. Baer along with other anthropologists admit that the dominance of biomedicine over other systems of medicine has never been absolute (Baer, 2004, as cited in Penkala-Gawecka and Ratjar, 2016). Despite much criticisms, the notion has gained more value and popularity in the recent years. This resurgence of the concept of medical pluralism has occurred due to growing popularity of the complementary alternative medicine (CAM) in the context of public health funding crisis that is putting pressure on government to include CAM in their health policies (Cant and Sharma, 1999, as cited in Penkala-Gawecka and Ratjar, 2016). Therefore, the development of indigenous medicine and support to local healers will not only reduce the health care cost of government but will also reduce the OOPE of the people.

There is constant demand for indigenous medicines by a few pockets of population be it educated rich or middle class or poor, uneducated class. It is observed that indigenous medicines are cheaper and affordable so it is preferred more by the lower-class people and the upper-class people who have a wider choice of medicines most often prefer to take indigenous medicines to avert the side effects of western medicines. The need and relevance of indigenous medicines is felt by all. This is reflected in the health choices made by people across the caste, class and religion and highlighted in the case-studies presented. Indigenous medicines are necessary to reduce pressure on both people and state-

a) for people- they need it as they want relief first and they do not prefer to have allegiance to any system of medicine to gain relief.
b) for state- to reduce their burden on the western medical systems.

In Bihar the poverty, social inequality and lack of health care workers adds on to the health burden of people and access to health care. The right to health and equity of access is a dream for many in Bihar. The adoption and expansion of traditional medicine can focus on addressing such gaps in health care and can make the access more equitable by reducing the health care cost. It can bridge the gap created by the western medical practice.

It is no doubt that this traditional knowledge is still surviving in our culture because of its best practices, however the support of government both State and central is imminent to revive our lost health culture. It is our health cultural heritage that needs to be protected and developed along with other cultural heritage of India. Special attention needs to be given for scientific development of indigenous drugs and treatment procedures. According to WHO Report (2019) there is lack of research data and lack of financial supports on research, lack of appropriate mechanism to monitor and regulate the indigenous medicine (WHO, 2019, p 57). According to WHO these are some of the biggest challenges faced by the countries. Development and promotion of indigenous will not only bridge the gap created by the public and private western health care system but will also fulfil the dream of health for all, a long-lost dream.

In the context of adverse medical landscape vis-à-vis people of Bihar are poor, illiterate, socio-economically backward and the layered structural inequality that penetrates into the life of people in one form or the other, medical pluralism give them an array of choices, be it real or false. If such choices are streamlined into a proper health system, then it will give wider freedom to the people to deal with their health problems in a better way.

The huge difference in allocation of fund explains that even after seventy-three years of Independence the central government is not able to restore and develop Ministry of AYUSH. This is also because western medicine is so deep-rooted and developed that it forms the strong structural institution of our health care system.

CHAPTER 6

SUMMARY AND CONCLUSION

Western medicine has emerged as the most popular system of health care around the world. The parallel advancement in science and technology continues to make it more developed and advanced system of medicine, amongst other systems of medicine. In majority of the developed and developing nations the development of healthcare infrastructure, services and, expenditures are in western medicine. Its unmatched scientific advancement seems to be the obvious reason for such dominance of western medicine over other indigenous and local systems of medicine.

The healthcare system in India is paradoxical. On the one hand, it boasts of a "best-in-class" healthcare delivery system that draws medical tourists from around the world, but on the other hand, it is characterised by a near lack of accessible, cost effective, and high-quality health services for a huge proportion of its population. Literature review shows that development and dominance of western medicine is shaped by various political, social, cultural and economic forces around the world. The hegemony and spread of western medicine in the world were due to colonial expansion for control over resources and trade of other countries. In India too western medicine was brought during the nineteenth century by the British to serve the traders and the company soldiers. Later it was consciously promoted and politically established as the supreme system of medicine over the Indian indigenous system of medicines- like Ayurveda, Yoga, Siddha, Homeopathy, local traditional healers etc. The knowledge of indigenous medicine which was common among the masses was carefully controlled by western medical discourses and slowly it (common knowledge of indigenous medicines/substance for cure) stopped being shared and passed from one generation to the other. The knowledge of western medicine was shared only to the skilled and trained doctors. Thus, the power of healing was taken away from masses and the distrust of indigenous medicines created in the past continued to shape the present. Post-independence also the skeletal bureaucratic structure of western medicine was adopted by the Bhore Committee (1946), which had the dominance of Indian doctors who were given the power to make the health policy of the independent India. There were very few doctors in the committee who believed in

both the system of medicine and thus supported for the revival of Indian indigenous systems of medicine. Thus, with the state's support, India's present health care policies, infrastructure and facilities continue to be dominated by western medicine.

The present national health policy and some other public policies (for economy, education, for instance) have been promoting privatization of health care including health/medical education, which has been siphoning of resources from the public health care systems. The private sector has become a vibrant force in India's healthcare industry, as it accounts for almost 74 per cent of the country's total healthcare expenditure. However little evidence has been found that private health system is more efficient and accountable than public health systems. The drawing up of middle- and upper-income patients by the private sector also weakens the public health care sector.

About 90% of people in India are dependent on western medicine. About more than half of the population are dependent on private sector for treatment. The out-of-pocket expenditure of treatment is also very huge and is around 70-80% of the total health care expenditure of families. Due to this high out of pocket expenditure every year about 32-38 million people are pushed below poverty line every year. Majority of the out-of-pocket expenditure is on medicines ranging from 60-88%. This is damaging for low- and middle-income households.

Literature review shows that pharmaceutical industries sell their drugs majorly through unethical prescriptive practices. Due to unethical pharmaceutical promotion and prescription, the cost of medicines is too high, that pushes millions of people below poverty line every year. In the absence of proper regulatory mechanisms, the pharmaceutical multinationals often adopt various unethical means to promote the sale of their drugs.

The dominance of western medicine has led to marginalisation of indigenous medicine. This has resulted in poorly trained practitioners of indigenous medicine who often adopt some or all of the practice of western medicine. studies shows that a large majority of poor people are served by quacks practicing either system of medicine. This is beneficial as well as very damaging for the health of the people.

Therefore, both the systems of medicine continue to shape each other, although in a disproportionate ratio.

In Bihar the private sector dominates in comparison to the public sector. In Bihar about 78% of households use private sector, that too they are mostly dependent on the private doctors and clinics. Bihar is the third largest populated state in India having very low health indices in comparison to other states of India.

Lack of public health facilities in Bihar render heavy dependence on private sector which further deteriorates the health of the poor through OOPE. The rural population is more dependent on private sector than urban population. The doctor population ratio in Bihar is 1:17,685 whereas the national average is 1:11,039. There are very few MBBS-trained doctors or doctors with advanced degrees in Bihar.

Thus, there is a huge gap of trained medical practitioners in Bihar which is filled by other practitioners, who may be indigenous practitioners, chemists or quacks. The government facilities have failed to attract poor due to a lot of accessibility, affordability and quality issues. The marginalisation of indigenous medicine in turn has not allowed it to flourish well in the government sector. A large majority of population depend on indigenous practitioners and quacks who mostly practice western medicine or mixed practice.

As is evident from the literature review that very few anthropological studies have focussed on the transaction of pharmaceuticals in the professional studies, hence this study is very important in this light. Most of the literatures reviewed have followed survey based on quantitative approach. Majority of the research on the topic have been conducted in developed countries and developing countries have received less attention. Most of the literature are from marketing perspective and the patient centred approach is missing. A good qualitative in-depth study on the nature and extent of interaction between the pharmaceutical companies and their customers is lacking in Bihar. No literature or study has been found which have investigated the impact of Western pharmaceutical market on indigenous medical practice.

Thus, the research problem of the present study was to understand how medical representatives influence the prescriptive practices of doctors, how it impacts the nature of practice in resource poor settings and consequently impacts the health of the

people, especially the poor. In a state like Bihar where people spend mainly out-of-pocket on private practitioners and especially on medicines, the role of pharmaceutical industries on the nature of practice needs to be understood. It is also important to understand the behaviour of the market of western medicine on indigenous medicine and vice versa.

Therefore, the purpose of the study is to decrease peoples' out-of-pocket expenses (OOPE) by better understanding the nature of western medical practise, the impact of the pharmaceutical industry on it, and the impact of the western medical market on indigenous medicine and vice- versa.

The specific objectives of the study were:

1. To trace the history of medical practice in the area of study in last one decade.
2. To understand the disease pattern in the study area.
3. To identify the various systems of practice in the area of study and the nature and levels of practice by different practitioners (quacks, doctors, villagers, indigenous healers, PHCs, CHCs, SC etc.)
4. To examine the various factors influencing the local markets of western medicine.
5. To examine how western medical market influences the indigenous medical market.

6.1 Scope and Significance of the Study

The study would be significant for the government and people of Bihar to understand how best we can improve the practice of Western medicine and reduce the OOPE of the people on medicine. The study would add on to the existing resources and research study on role of pharmaceutical industries in influencing the nature of western medical practice and in marginalisation of Indigenous medicine and vice-versa. At local level the study would assist the government and regulatory bodies to understand why the regulation of market and of the western medical practice is required in Bihar, what is its status and what can be done for it. At the National level this micro study will add on to the resource pool of other micro studies done in other states in India, the understanding of the similarities and differences across regions would assist in making a robust health policy. At the International level the study

would add on to the larger picture of how western medicine is practiced in India and how best can the global society learn from its experiences. The study allows the decision maker to have a better understanding of the health problems of the people of Bihar.

6.2 Methodology

The researcher did an exploratory ethnographic study in Bihar. She focussed on two districts of Bihar namely Patna and Saran. In Patna the researcher purposively chose urban regions- Kesari Nagar, Patel Nagar, and Boring Road. In Saran she chose Hussepur village (rural region). Snowball sampling technique was applied purposively most often to reach the key research participants. The key participants consisted of people like medical practitioners of both modern and indigenous medicine, patients, pharmacists, medical representatives and other people who may have key information. Ethnographic tools used to collect data from key respondents are - unstructured interview guide, observation, telephonic interview, casual interaction and field diary. The data was collected from both primary and secondary sources. The secondary sources constituted the official documents such as census, articles from journals, books, pamphlets, monthly and annual reports of NGOs and GOs, online news article and other publications and materials from national and international conferences as well.

Data collection was done in phases. In the first phase data was collected from December 2007 to May 2008. In the second phase data was collected from June 2020-July 2020 to assess and understand the changes that occurred in the field (through telephonic interview). In June 2021 the researcher visited her field area and took some interviews with the study respondents in order to get a sense of how COVID could have influenced them vis-vis the research question. During the process of writing the thesis the researcher was constantly in touch with a few key respondents apart from the period specified for the data collection to get more data and/or reaffirm the data collected. The names of research participants and their companies, hospitals, and shops were coded for the sake of anonymity with the purview of ethical considerations.

6.3 Results

With the macro level policy changes in 1970 (change of patent regulation and legally selling less expensive patented drugs) and in 2005 (WTO TRIPS agreement where reverse engineered patented drugs were not allowed to be sold and allowing sale of generic drugs patented before 1995) supported and boosted growth of many domestic pharmaceutical industries in India. Therefore, with the increase of domestic and global pharmaceutical companies in the Indian market increased the competition for drugs' sale. In Bihar which provided a very profitable market worth more than 600 crores approx. to these pharmaceutical companies, the competition increased and so did the unethical marketing practices. The pharmaceutical market of Bihar is dominated by both big and small, local and global pharmaceutical companies.

The drugs or medicines have a channel of movement right from the company to its end users which is known as drug supply chain. The drug supply chain is one of the crucial determinants of the price of medicines. However, another important factor that influences the price of medicine and its sale, is prescription generation. It also influences the OOPE of the patients. It is a known secret that a large share of pharmaceutical companies' budget is spent on doctors and other healers with prescribing powers as they are considered as the gatekeepers to the sale of medicines. Therefore, marketing through prescription generation is very essential and indispensable for pharmaceutical companies. It is well known that medical representatives appointed by pharmaceutical companies are the important conduits for promoting their drug among doctors and check for the problems in the drug supply chain. These companies adopt various ethical and unethical strategies to promote the sale of their drugs through prescription generation. In the present study it was found that:

Bihar, West Bengal and Orissa belt and North eastern states provide a very huge market for these pharmaceutical companies. The pharmaceutical companies earn huge profit through sale in volumes of their drugs. As India and specially these regions have a price sensitive market, so pharmaceutical companies reduce the price of their drugs and earn profits through selling large number of drugs. The reason for this is that people in these belts are poor and illiterate. The access to public health services

and their quality is also very poor. Increasing the generation of prescription for their drug is the main motive of pharmaceutical representatives.

Each drug division of a pharmaceutical company employ a group of MRs who are posted in such a way in the state of Bihar that they cover each and every nook and corners of the state where a "prescriber" of their product is located. These prescribers may be MBBS or specialized doctors or quacks or indigenous practitioners prescribing western medicine.

The MRs are assisted by an army of people working at the background to equip them and train them with all the necessary skills on each and every aspect of marketing to generate prescription from the prescribers. The MRs are trained in– drug use, skills to understand their customers, product knowledge, good communication skills, smart personality and appearance, good in local influence and local language etc.

Thus, for increased prescription generation the MRs map each and every prescriber in his work region and tries to form a good rapport and relation with them. Thus, the pharmaceutical drug forms the reason for relation between MRs and prescribers. The prescribers, MRs and retailers work in a symbiotic relation to increase the sale of a pharmaceutical drug.

It is interesting to note that pharmaceutical companies consider prescribers, -doctors and quacks as their customer and not the patients who actually buys the medicine and consume them. For pharmaceutical companies, whoever prescribes their drugs is their customer. They also do not make any difference between an allopathic doctor, Ayurvedic Vaidya, Hakim, unlicensed practitioner or quacks, etc. they promote their drugs to anyone who prescribes them.

The pharmaceutical company have a very efficient drug supply chain to ensure that the drug prescribed by the prescribers, reaches the patient and is bought by them**.** For this they ensure that the drug is in the close vicinity of the patient to whom the drug is prescribed. The MRs ensure that the nearby pharmacy stores keep the stock of medicines, so that the prescription does not miss the sale of its drugs. Thus, through the medical prescription they pull the demand for their products. As majority of the people of Bihar visit private doctors and clinics, the MRs play a very major role in prescription generation and in ensuring an efficient drug supply chain.

The MRs visit the doctors frequently and at times daily. Pharmaceutical companies try to capture a doctor's mind, memory, and life in a variety of ways, including regular visits, free samples, calendars, pens, writing pads, glass sets, coasters, birthday, marriage and anniversary celebrations and other items kept in his clinic, as well as constant reminders to ensure that its drugs are prescribed by the doctor on a daily basis in order to meet monthly and annual sales targets.

They incentivise the retailers, and the doctors to ensure continuous increase in prescription of the drugs. The companies fix the sales target for their MRs and support them and incentivize them too, to achieve their target. In the presence of tough competition between various MRs of different pharmaceutical companies for the same salt, the companies use heavy incentive policy to break their prescribers or doctors. Therefore, the prescription generation becomes very unethical in the presence of tough competition. It was found that the small companies incentivize the doctors through directly giving cash and they mostly target the young doctors or village quacks or informal practitioners. The big companies target all types of prescribers and have a more sophisticated way of marketing their drugs. They give gifts/incentives of higher value to the doctors, like sponsor their conferences or fund their foreign travel or pleasure trips. However due to the policy of directly giving cash by small companies; the big companies also indulge in giving cash as incentive to increase their sale through prescription generation.

Almost all the doctors and MRs agreed that they are dependent on MRs for drug knowledge and new discoveries in medical field and therefore cannot avoid meeting them. They are afraid of being ostracised from this culture of MR visit and gifts giving. Government doctors also in order to oblige the MRs also prescribe costly pharmaceuticals which the patient has to buy from the private pharmacy. The doctors are scared of the fact that if they do not meet MRs, they will lose both the new knowledge on drugs and the incentives and gifts of pharmaceutical companies. In the community of MRs of various pharmaceutical companies his image may be tarnished as being rude, hence other MRs would also stop visiting him.

It is found that the gift/incentive policy of pharmaceutical companies creates a market situation or condition in such a way that no doctor can escape entering in the unethical prescriptive practices. In the face of cut throat competition the change in the culture of

incentivization (i.e. giving very costly gifts or high value cash) in turn changed the attitude of the doctors as well. They also became greedier and demand for the high value incentives. It was informed by the MRs that 99% of the doctors of Bihar are corrupt, except for the few old doctors.

There is conflict of interest, when the doctor prescribe medicine for the patient. Amidst the pressures of generating prescription for the pharmaceutical companies; doctors still try to balance their prescription habit depending upon the patient's socio-economic background as well as the maintaining the professional standards of treatment. The field observation in Bihar showed that there is immense pressure on the doctors from both the sides in the market-a) from the pharmaceutical companies' side with their rigorous daily visit and marketing tactics as well as b) from the patient's side many of whom are economically weak and adding a costly drug or extra drug in his prescription would dig a bigger hole in his wallet and which would push him further into poverty. The incentive policy of companies is so alluring that it is difficult for the doctors to say no to it. Most of the doctors take the attractive policy offered by companies and compromise on patient care and welfare.

MRs follow aggressive marketing strategies in private institution, which is very less in public institution. There is a huge price difference between the branded medicine and the generic medicine of the same salt combination. Some medicines are 2 times - 50 times costlier than its generic counterpart. According to WHO, about 65% of the Indian population lack regular access to essential medicines. The doctors also under the pressure or lure of the pharmaceutical marketing tactics prescribe branded medicines. The patients on the other hand do not even know that its generic is cheaply available and they can buy it from any shop.

Interestingly it is noteworthy that nothing is free. So, what the companies invest in doctors they get more than that back through prescription of their medicine from the doctors. Only difference is that the doctor pays for the gifts/incentives received from the company by writing prescription of their medicines. Neither the gifts/incentives are free nor the prescriptions are free. However, the pharmaceutical companies negotiate a higher profit in this exchange. They negotiate prescription generation of higher value than the higher value of gifts given by them to the doctors. The catch is that the patients are the end payer of all these transactions. The price of all these

transactions is put on the price of small pills bought by the patients. Sadly, majority of the people of Bihar are poor and they majorly pay OOP for the price of these medicines.

The unethical market is clandestine, undisclosed and unaudited. It very difficult to measure the extent of the unethical market and formulate a policy to regulate it.

6.3.1 Impact of Pharmaceutical Promotion on Nature of Western Medical Practice

Apart from the overt consequences of pharmaceutical promotion on unethical prescriptive practices there has been some covert impact on the practice of western medicine as well.

It was found that the MRs train all the practitioners of western medicine i.e., quacks/informal practitioners, Ayurvedic doctors, homeopathic doctors. Consequently, the indigenous medical practitioners leave their own practice and completely switch to western medical practice. Therefore, they contribute in production of more of quacks.

The MRs promote the retailers by providing incentives, to substitute the prescription of doctors by drugs of his company. Many people consult chemists or retailers for their health problems and take medicine directly from them instead of consulting a doctor. Therefore, the sale of many of the schedule-H drugs increase over-the-counter (OTC), which is illegal.

Due to the pharmaceutical promotion the consumption doctors have increased who have their own pharmacy in their clinics, to earn more profit from the sale of medicines as well. Such doctors have an inclination to prescribe extra medicine or costly medicine which increases the OOP of the patients, which pushes them further down in their socio-economic status.

Some of the quacks prescribe high dose of medicine (to heal the patient quickly), as first line of treatment which are actually third line of treatment drugs. This is done to retain their patient's trust. The prescription of antibiotics is more by quacks and even by trained medical doctors. The prescriptions have a greater number of drugs and nutraceuticals than required due to due to incentives and pressure created by the MRs,

which increases the OOPE of the patients. There are many side effects of medicines and the drug resistance to many diseases also increases, which further adds on to the public health problem of prevention and control of certain diseases. Thus, the vicious cycle of poverty, illness and disease continues. All this impacts negatively in a place like Bihar where majority of the population are poor.

Sometimes the half-trained quacks through their field experience and little knowledge bring out new uses of drugs which are not scientifically known and are harmful for the patients in the long run.

It was also found that the private doctors prescribe tests which are not needed. The doctors are sometimes forced to cajole patients to get the tests done in the hospital itself, sometimes doctors get commission for referring a patient to a private lab. Frequency of irrelevant test prescription has increased.

The poor public health care facilities further push the poor population to private sector, which further increases their out-of-pocket expenditure especially on medicine. The dependence on quacks for low cost of health care, sometimes becomes dangerous for the people. The private health care practice has lesser regulation and control and the unabated aggressive marketing practices of pharmaceutical companies in private sector further complicates the health and socio-economic situation of the poor population of Bihar.

Thus, as the doctors and MRs talk about the malpractices in western medicine, they mean to say that such malpractices are rampant and spread everywhere- right from diagnostic lab referrals, irrelevant tests prescription, increasing the stay in the hospital to increase the cost of care, irrelevant medicine prescription etc. Such malpractices are more in the private sector as they have lesser regulation and control.

Prescription generation impacts people in a number of ways-

1) For health care many a times people have to borrow money on loan at a very high interest rate of more than Rs 100 per day which they are often not able to pay back as they are very poor. This further pushes them back into poverty.
2) In the case studies presented it is seen that the excessive dependence on western medicine and absence of quality services many a times put people into

trouble as can be observed from the abortion related problems and deaths of women.

6.3.2 Impact of Market on Indigenous Medicines

Absence of belief in the efficacy of the indigenous medicines, among the people; lack of infrastructural facilities for secondary and tertiary care; lack of awareness are the reasons for less usage of indigenous medical systems in Bihar. This further puts a lot of pressure on the infrastructure and facilities of western medicine present in Bihar. The large population and high density in cities like Patna in Bihar further add on to the existing health problem.

It was found that people often follow pluralistic treatment regime. It is observed that for a patient his/her literacy, the expenditure in the treatment of a disease, as well as the immediate relief are major factors for choosing a practitioner. As most of the people especially in the rural areas are poor and illiterate so they want to get well soon with minimum expenditure so that they do not further lose their working days. People have their own reason for seeking different systems of medicine at various episode and stages of illness, which is also determined by their own position in the social stratification and the seriousness of their illness. As people especially poor people first visit quacks or chemist at the first stage of their illness to get relief. If the symptoms continue further and they do not get relief then they think of going to the trained doctor. Economy of a house and the market economy interact with each other at every stage in influencing the people's choice for a health care practitioner. However, the market of western medicine often dominates at every stage. It was found that people are more dependent on western medicine especially for acute illness requiring immediate relief. People also depend on indigenous systems of medicine for many of their illnesses especially for chronic illnesses which requires taking medicine for a long time. They prefer to take indigenous medicine along with the western medicine, if available, to reduce the side effects of allopathic medicines on their body.

Another impact of pharmaceutical industries is that they are reducing the number of indigenous practitioners by training them into western medicine. Thus, we see that the capitalist's interest is only in gaining more and more profit. In the disguise of promoting their pharmaceuticals to the doctors, they are training and increasing the number of quacks. They are creating more demand for western medicine by supplying

more practitioners in the form of quacks and reducing the standard and quality of western medicine.

It was found that under the impact of western pharmaceutical market, the indigenous pharmaceutical companies also try to promote their medicines (through their medical representatives) to their prescribers. They also try to maintain drug manufacturing standards, and drug packaging like western pharmaceuticals to match their standards with western medicine and earn more profit. However, most of these indigenous companies do not indulge in aggressive advertising and marketing strategies as they operate on a small scale or lack revenue or their customers are limited. A few of the companies who are becoming famous are entering into this trend of advertising and marketing as they are having a higher turnover of profit, a percentage of which they are putting into advertising and marketing. For example -Patanjanli and Himalaya.

The scientific validity of indigenous medicine is questioned by professional lobby of western medicine, in spite of methodological differences between them. In a mixed economy like that of India the cultural, political and economic structures often seem to suppress the indigenous systems of medicine to establish biomedical hegemony. This is observed in the highly disproportionate distribution of budget between AYUSH and western medicine. Another problem with AYUSH budget is that it is fragmented for the various systems of medicine like- Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy whereas the budget for western medicine is all inclusive and exclusive for the development of western medicine on various fronts. The huge difference in allocation of fund explains that even after seventy-three years of Independence the central government is not able to restore and develop Ministry of AYUSH. This is also because western medicine is so deep-rooted and developed that it forms the strong structural institution of our health care system.

6.4 Way Forward

As the global pharmaceutical companies are looking at India for market growth. The liberalization of the market along with the dominance of private sector is not good for the people of Bihar. As the people are battling for the improvement in their health, health care access and expenditure, the unethical promotion of the pharmaceutical companies and their marketing practices complicate their situation further. Medicine

and health care has become a commodity for profit making and those who have money and political power dominate the medical systems. A profit-based health market is creating more of inequality than equity and the insurance system is creates more or such inequality. Therefore, health should be view as a right and health care should be in the hands of the government. It is recommended that:

1. The uunethical marketing practices of the pharmaceutical companies should not be self-regulatory. Government if Bihar and the Ministry of Chemicals and Fertilizers should regulate it.

2. The unethical prescriptive practices of the prescribers should also be strictly regulated and continuous medical education (CME) of prescribers should also be done by the government. According to the pharmaceutical companies each and every prescriber is mapped and his profile is maintained for business. Hence, this profile can be utilised by government to reach them and regulate their training and prescriptive practices. This map for standardisation and regulation and training.

3. The IEC of the people should be done on certain essential drugs. Basic knowledge of drugs, their use, side-effects, salt combination and various brand prices should be given . People's health needs to be given back in people's hand. IEC of people on indigenous medicine should also be done.

4. The National Pharmaceutical Pricing Policy (NPPP), 2012 should be amended to lower the pricing of the drugs and a cap on profit of the drugs should be fixed. The existing regulatory mechanism should be implemented. The price of the medicines should be lowered to reduce the OOPE of the people. A strong will of the policy makers is required to overcome the conflict of interest with the pharmaceutical firms and make a suitable drug policy for the people.

5. The training of interested potential rural students in medical colleges, or medical training institutes who can provide for the first line of medical treatment back in their native villages. The already functioning quacks in the villages should be included in the training and their knowledge and practice can be assessed at regular intervals through license exam or on the job training in their own field. There is a need to revisit the concept of licentiates in 1940s who were professionals trained for 3-4 years

in medical colleges. Likewise, such licentiates should also be created in indigenous medicines by giving them training in colleges of indigenous medicines.

6. The health budget needs to be increased and specially the budget of Ministry of AYUSH, so that medical pluralism reduces the burden of government health system and gives more better choice to people. Infrastructural development and IEC would attract more people to AYUSH.

7. Simultaneously research and development of indigenous medicines and treatment procedures need to be done. The scientific validity of many facets of indigenous medicines has to be established and research needs to be done to further develop those indigenous medical systems, keeping intact their methodological principals.

8. The public health system of Bihar needs to be improved and increased to cover larger population with free health care. Government of India should reduce privatization of health care, as studies have shown that even PPP model doesn't improve the functioning of health care institutions and reduce OOPE of people.

9. Socio-economic development of the people of Bihar is a must to improve their overall health.

6.5 Limitation of the Study

As the study is an ethnographic study, the subjects or samples are not true representation of the Universe (total population). Hence the results cannot be extrapolated over whole of India. The study was very time consuming and subjective.

The researcher's own potential and skills is very important in data collection and analysis and this also may lead to some inevitable biasness and misinterpretation of the results of which the researcher may not be aware of. As the study entails participant and non-participant observations some data might have been missed by the researcher and certain biasness might have been there, during analysis of which the researcher must not have been consciously or unconsciously aware of.

6.6 Scope for Further Research

The present research has opened the avenues for further research in the prescription analysis as well as the interactional models which propel prescription in the context of

industry and the prescriber through the MR. Some of the specific areas of future research as envisaged by the researcher include-

1. Prescription analysis;

2. Visual and textual documentary on the problems of access to relevant medicine to create more awareness, and generate information;

3. Explore how pharmaceutical promotions can be regulated and how OOPE can be reduced.

4. All the pharmaceutical representatives interviewed were male although in the second phase of data collection in 2020 the researcher was informed that a few females MRs were also being recruited by pharmaceutical companies for specific areas. The researcher would invest special interest through specific research questions to include them in her future studies. This will strengthen the approach to the problems through the gender lens.

5. As majority of males from the poor families migrate out to work, hence it is imperative to understand how women manage their health in the villages and in urban regions in the context of high OOPE on medicines.

While efforts have gone in to substantiate the research question through a robust design and meticulous work, nevertheless there are these aspects which need consideration in future. Therefore, the aforementioned areas of research will form an integral part of future academic endeavour of the researcher.

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ANNEXURE I

CONSENT FORM

Informed Consent

This is to inform that I am conducting a study on **Western Medical Practice in Bihar: An Ethnographic Study**, to understand the nature of practice by various medical practitioners, process of drug promotion and selling, and practice of indigenous medicines. The study attempts to understand the reasons for high health care cost specially on medicine and how it can be reduced for people.

This study is part of a Doctoral study at Centre of Social Medicine and Community Health, Jawaharlal Nehru University, New Delhi.

For this purpose, I would like to take informal interview from you. I would very much appreciate your participation in this study and would like to ask you some questions related to the study. Whatever information you provide will be used anonymously for research purposes only.

Participation, in this study is voluntary and you can choose not to answer any question or all the questions. You can refrain at any point in time or discontinue if you are tired at any point. However, I hope that you will participate in this study since your participation is important.

In case you need more information, please feel free to ask.

ANNEXURE II

INTERVIEW GUIDE

For Medical Representatives

Name and Age

Educational qualification

Designation

Organization/ Affiliation

What is the nature of your job

Please describe your day

How many doctors do you visit in a day

How do you achieve your sales target

Who are the people you sell your drug to

How do you compete with other industries' MR

How do you influence the prescription of doctors

What are the different incentive scheme

What are the problems faced by you

How do you increase the sale of your drug

What is the difference in strategies while dealing with doctors of a clinic, government hospital and private hospital

How do you ensure drug sale

How do you work with chemists

What is the difference between your job ten years before and now

What unusual practices of health care providers do you observe in the field.

ANNEXURE III

INTERVIEW GUIDE

For Doctors

Name and Age

Educational qualification

Designation

Organization/ Affiliation

How many years of work experience do you have

What do you find time for medical representatives

Why is MRs visit important for you

Do MRs influence prescription practices of doctors

What kind of gifts do MRs give

How do doctors manage prescription when various MRs request them to prescribe their drug

Drugs are costly and patients are poor, so how do you prescribe.

ANNEXURE IV

INTERVIEW GUIDE

For Chemists/Pharmacists

Name and Age

Educational qualification

Name and location of the shop

Do medical representatives visit your shop

How do you help the medical representatives

What kind of help do you get from the MRs

Do you substitute the drugs of the prescription, if yes then why

What is the difference in your business in comparison to 0-12 years back

Why do you keep the herbal drugs along with the allopathic drugs

ANNEXURE V

INTERVIEW GUIDE

For Patients/ People

Name and Age

Educational qualification

Place of interview

What health problem do you or your family member have

Where do you go for your treatment

How do you decide your doctor

How have been your experience with the doctor

How much is spent on the medicine

Could you please describe any health problem of yours or your family members which created problem for you for a long time.

What were the problems faced