

**PERCEPTION OF DIAGNOSTIC TECHNIQUES: A
COMPARATIVE STUDY BETWEEN A GOVERNMENT AND A
PRIVATE HOSPITAL IN THE CITY OF BHUBANESWAR**

DISSERTATION SUBMITTED TO JAWAHARLAL NEHRU UNIVERSITY IN
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CERTIFICATE

This is to certify that the dissertation entitled, '**Perception of Diagnostic Techniques: A Comparative study between a Government and a Private hospital in the city of Bhubaneswar**' submitted by **Saswatee Rath** in partial fulfillment of the requirements for the award of '**Master of Philosophy**' of this University is to the best of my knowledge, is her own work and has not been previously submitted.

We recommend that this dissertation can be placed before the examiners for evaluation.

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CHAPTER-1

INTRODUCTION

1.1 GROWTH OF PRIVATISATION:

The present trend of privatization is a corollary of the structural adjustment policies (SAP). The development of the private sector was at the cost of curtailment of services in the public sector. This was a phenomenon that was observed in many Third World countries from the eighties, which peaked during the nineties in India with SAP.

SAP was imposed on the third world countries by the International monetary fund (IMF) and the World Bank. The Third World countries because of their poor economic conditions and fiscal status had to borrow heavily from the IMF and the World Bank.

The IMF and World Bank compelled the third world countries to implement SAP, which was done with the intention of recovering the loans than bringing about any development. These are economic policies intended to generate economic growth, which in turn would lead to repayment of loans to IMF and World Bank. This SAP was recommended to be used in various sectors, of which health sector was a part.

Under the SAP, the role of the public sector was reduced to a minimum. The private sector was given importance at the cost of public sector. The public sector was deprived of funds by curtailment imposed under SAP. This hampered the provision of services by the public sector. At the same time, the private sector was provided with various subsidies. This, in turn, led to rapid growth of private sector.

All these resulted in making the services of public sector poor in comparison to the private sector. People were dissatisfied with the quality of services provided by the

public sector. And public sector was considered to be useless. The private sector flourished with the notion of improved quality of services. Here people had to pay a heavy cost for the improved quality.

1.2 IMPACT OF SAP ON HEALTH SECTOR:

The SAP in the health sector had led to:

1. Cut in public investments on health;
2. Opening up avenues for private sector;
3. Introduction of user fees; and
4. Private investments in private hospitals. All these have led to expansion of the private sector and commercialization of medical care. Commercialisation of health services led to narrowing down of the public sector and promoting profit-orientation of the private sector. Apart from emphasising pro-market reforms to enhance the growth of private sector, SAP also focussed on cutting down services of the public sector. According to SAP, the third world countries were compelled to adopt narrow techno centric strategies. This was in the field of population control, reproductive and child health, and communicable diseases.

Generally curative services are taken up by the private sector as they are more profitable, whereas preventive, promotive and rehabilitative services are left for the public sector. As the latter services are not profitable, they are not covered by the private sector. The private sector is more inclined towards selective health care.

Even cut in the funds has hampered the public sector to a large extent. The failure of the public sector in turn has led to expansion of the private sector. India is being exhorted by the international banks to reduce public expenditure in health through increasing privatisation. It is conveniently forgotten that in Europe and Japan, the percentage of public expenditure in health is over 80%, while in India it is only 23%. Even in the U.S.A, it is over 50% (Sengupta:1994).

Provision of various subsidies to the private sector and cutback in public sector, are also factors which led to the accelerating growth of the former. With the support from the government, there was widespread expansion of the corporate hospitals in 1980s. It is indeed interesting to note that the rise of corporately owned hospitals is essentially a southern phenomenon with cities like Hyderabad and Madras having the largest numbers.¹ It was seen that regional business groups and non-resident Indian doctors invested in the corporate sector. Investment in private sector was considered as a profitable business. Even the grant of subsidies for land, medical equipment, electricity and others; encouraged individuals to take an interest in this business. The regional business groups and Non-resident Indian doctors came forth to invest in the private sector with an intention that it would yield profits in the future.

The reduction in the costs of the public sector is considered to be done with an intention of debt payment. This in turn has hampered the notion of social welfare. In such circumstances, efficiency of health services is equated in terms of implementation of advanced drugs and technology; than emphasising the preventive, promotive and rehabilitative aspects of health. This is nothing but focussing on short-term in contrast to long-term approach. But for the maintenance of a healthy society, social concerns for health improvement should be given a priority. Therefore, a balance should be maintained between investment on new drugs and technology; and preventive, promotive and rehabilitative aspects of health.

1.3 PROMOTION OF ADVANCED TECHNOLOGY:

The notion of technological excellence remained common to the two ideological opponents- the Bombay plan and the people's plan. Both visualised the best hospitals and technologies for disease control- the former through initial dependence on foreign

¹ Baru, R.V (1994) "The rise of business in medical care", *Health for the millions*, Vol.2, No.1, PP.19.

countries for “machines and technical skills”, the latter through equity as an incentive to generate and acquire technology.²

Given the nascent nature of Indian industry, the country was dependent on multinational corporations, mostly British, for the technology required for formulation and production of drugs. This dependence was strengthened after independence with the Government of India’s policy statement (1998) which stated that “no discrimination would be made between foreign and Indian undertakings in the application of general industrial policy and that reasonable facilities consistent with foreign exchange position would be given for the remittance of profits”. This policy decision opened the gates for multinational companies to enter India. Efforts were made to become more self-reliant through the establishment of public sector units like Hindustan Antibiotics Limited (HAL) and Indian Drugs and Pharmaceutical Limited (IDPL). During the fifties and sixties, these units managed to produce around one-third of the required bulk drugs in the country.³

Despite these constraints, several committees continued to emphasize the need to achieve self-reliance with respect to the pharmaceutical industry. The Bhore committee was of the view that “the final responsibility to see that the essential needs of the country in respect of imports of medical requisites are met should rest with the government. It should be possible to meet the essential needs through a combination of private enterprise suitably assisted, where necessary, and protection by the state where this is found to be in the public interest”.⁴

By the sixties it became fairly clear that the pharmaceutical industry was dominated by multinational corporations and the Mudaliar committee report discussed in great

² Qadeer, I (2001) “Impact of SAP on concepts in Public health” in Qadeer, I; Sen, Kasturi; Nayar, K. R (ed) *Public health and Poverty of reforms*, Sage publications, New Delhi, PP.127.

³ Baru, R. V (1998) *Private health care in India: Social characteristics and Trends*, Sage Publications, New Delhi, PP.55.

⁴ Ibid, PP.55.

detail the constraints faced by the pharmaceutical industry. It recommended strengthening the public sector and curbing the influence of foreign companies. Apart from looking at the pharmaceutical industry, the Mudliar committee also examined the state of instrumentation industry. The committee had undertaken a survey of all indigenous industries which were manufacturing medical equipments and found that the effort was sporadic and unorganised with no long-term plan or objectives. As the committee observed, “the instruments manufactured do not generally follow any definite specialisations: there are no standards and the products are generally of a quality which compares very poorly with the imported materials and doesn’t find acceptance with the users at the hospitals and laboratories”. Given the poor state of the instrument industry, a large variety of surgical, electronic and optical instruments and appliances were being imported. The committee was of the opinion that it was essential for the country to become self-sufficient in the manufacture of medical equipment. Given the poor state of the instrument industry, a large variety of surgical, electronic and optical instruments and appliances were being imported. The committee was of the opinion that it was essential for the country to become self-sufficient in the manufacture of medical equipment. In order to achieve this they suggested three possibilities: 1. Entrust one of the corporations in the public sector already in existence, like Bharat Electronics, to take up the manufacture of these items. 2. Establish a new factory in the public sector, if the volume of production justifies this. 3. Allow the private sector to undertake the manufacture. They also added that it will of course be necessary to restrict and finally stop imports altogether of the items included in the manufacturing programme.⁵

While several committees had recommended the need for self-reliance in both the drug and instrumentation industries over the years there has been increasing dependence on multinational companies. The Haathi committee drew attention to the fact that “within a few years after the country became independent, foreign companies built up substantial business in this period of twenty years, multinational companies

⁵ Ibid, PP.56.

attained a position of dominance in the drug industry". This committee once again called for self-reliance in the production of drugs and stressed the central role of the public sector in production. Despite the recommendations of the Haathi committee, the private sector gained a prominent role through collaboration with multinational corporations.⁶

It is thus apparent that there is a dependence of the pharmaceutical as well as the instrumentation industries on the private sector and multinational corporations. At least in the case of the pharmaceutical industry there was some effort to achieve self-reliance by investing in a few public sector undertakings for the manufacture of drugs. However, in case of the medical equipment industry it has been estimated that a very small percentage of the production is indigenous.⁷

The planners of our country have narrowed down the aspect of health to implementation of new drugs and technology. Good health is equated in terms of availability of drugs and technology having balanced diet and good environment. Here the curative aspect of health was given importance than the preventive, promotive and rehabilitative aspects. And the latter was only restricted to immunisation and health education.

This led to an increased dependence on technology. Health sector reforms were based on import of technology. Efficiency of health services was equated with availability of technology. This in turn led to undermining of the public sector. And at the same time, this led to growth of consumerism.

Implementation of technology, generally led to heavy investment. Therefore, in order to recover the money, physicians generally recommend the patients to go for these technologies. Some diagnostic tests come to assume the role of a final independent

⁶ Ibid, PP.57.

⁷ Ibid, PP.57.

validator, there being no alternative test or procedure against which their effectiveness at detecting disease in the living can be judged. Examples might be computerised axial tomography in cerebrovascular disease, the electrocardiograph in coronary heart disease, and the skull fracture. In the absence of specific information on sensitivity and more particularly specificity, their diagnostic effectiveness is often assumed- an issue of importance in high technology diagnostic services which involve heavy capital and revenue expenditure. However, when through the use of high technology, they are made efficient so that more tests can be done per unit of resource expanded, their subsequent use is invariably less selective because increased efficiency allows them to be given more often and to more people (Roberts:1983).

All these have resulted in the use of inappropriate technologies, over-prescription and moneymaking. The private sector, which has been emphasising on efficiency, has in turn led to hike in the cost of medical care. And quality of health care is defined in terms of techno-centric approach. All these have made the poor inaccessible to health care in the private sector. The private health care is made available only to those who have the capacity to pay for it.

This is a situation, which can be explained in terms of demand and supply. Physicians recommend the use of technology to make money. The patients in turn consider the use of technology to be essential in health care. These technologies are supplied by the industries in order to meet the demands. And the physicians play an important role in prescribing the advanced technology.

The condition of the poor has further been worsened by the introduction of user fees. User fee in government hospital has been implemented under SAP. It has been done with an intention to generate funds to meet the recurring expenses of the hospital. However, user fees have been unable to meet the recurrent expenditures. Moreover, this has led to exclusion of poor, even in accessing the government hospital.

In order to improve efficiency, quality and effectiveness of public hospitals, it is proposed to: 1. Cutback on secondary and tertiary spending and channel it into selective interventions at the primary level; 2. Contract out ancillary services in public hospitals to private contractors; 3. Involve private providers in national communicable disease programs; 4. Institute user charges in all public hospitals; 5. Encourage private sector growth at secondary and tertiary levels by instituting regulations; and 6. Initiate decentralisation measures. In this kind of restructuring, the role of the public sector is gradually limited to only primary-level provisioning. Secondary and tertiary care are commercialised through user charges for outpatient and inpatient services, diagnostic and other facilities (Qadeer: 1997). This kind of delinking of the primary from the secondary and tertiary care is assumed to affect the effectiveness of public health.

The commercialisation of secondary and tertiary levels has led to implementation of advanced drugs and technology. This in turn has led to growth of pharmaceutical and medical equipment industry. In other words widespread markets in relation to medical care have been created. This has made the general masses to pay a heavy price for medical care. Moreover, the introduction of user fees has made the condition of the poor more vulnerable.

Import of technology has also been without any governmental control. This has further accelerated the cost of medical care. In such a situation, the Government should take steps to exempt the poor from the costs of accessing advanced technology. This should be done so that the benefits of technology wouldn't only be restricted to those who can afford it.

It has also been advocated to go for rational use of technology. Coverage is considered to be given priority over quality. Utilisation of technology should be such that it would cover a wide population. This should be done in order to fulfil the principles of comprehensiveness, equity and universality.

1.4 THE PRESENT STUDY:

Within the context discussed above, the present study attempts to review existing literature on medical technology especially focusing on the social dimensions and undertake a limited study to explore some of the emerging issues with regard to use of technology in medicine. The basic objective of the exploratory study is to explore the perception of the diagnostic techniques by the doctors and the patients. To make the study more analytical, a comparison is made between a government and private hospital. This is done with the intention of getting responses of the doctors and patients in the government and private hospital and then making a comparison between their responses in regard to the medical techniques.

1.5 CHAPTERISATION:

There are overall five chapters starting with the growth of privatisation in medical care. Here, the impact of privatisation is assessed in terms of its effects on the implementation of advanced drugs and techniques. The second chapter is a review of medical technology and society. It basically deals with the growth and development of technology, interrelationship between gender and technology, role of physicians in technology and the social implications of technology. The methodology that is undertaken in conducting the study and the field findings of the responses of the doctors and patients in regard to medical techniques forms the base of the third and fourth chapter. And last chapter consist of the general discussions and possible recommendations. The last chapter substantiates the findings of the limited exploratory study with that the literature that is reviewed.

CHAPTER-2

MEDICAL TECHNOLOGY AND SOCIETY: A REVIEW

Generally the application of laboratory investigations and utilisation of diagnostic technologies is considered to play a vital role in the treatment procedure. Questions of efficacy and safety of these powerful technologies raise a wide range of regulatory and policy issues that go to the heart of the modern welfare state and to the heart of globalisation processes' as the regulation of medicines transcends national frontiers (Davis: 1997). It can be said that the efficiency of the medical technologies isn't only the concern of a particular country but the whole world. And such a situation has necessitated the scientists, industrialists, politicians, and administrators to bring about regulations relating to medical technologies. Even the consumer's interest can be reckoned by involving them into the process of regulation.

Utilisation of diagnostic technologies, now days, is considered to be necessary for the treatment procedure. Laboratory investigations, x-ray, ultrasound, ECG, TMT, Colour Doppler, CAT scan, MRI, EEG etc. have become an integral part of medical practice. It is thought that these medical technologies would help in increasing the efficiency of the treatment process. However, the efficiency of these technologies is being questioned in recent years by a number of scholars. Therefore, it is suggested that the research and the utilization of medical technologies should be properly organised.

Literature on the social impact of medical technology is too scattered and at the same time too diverse although sociology of science and technology is a very well developed area of research. In this chapter, a review of literature that could be identified as relevant to the topic of this research is provided. These are:

2.1 SOCIOLOGY OF SCIENCE AND MEDICINE:

In the relationship between “science” and “health care”, it is seen that the former dominates the latter. The scientists make use of scientific procedures to invent various innovative drugs and technologies. These are then applied in the field of medical care. Generally, these drugs and technologies are promoted through markets. And the physicians utilize them in the treatment process, by considering them as a necessary procedure.

The complex and multi-faceted relationships between medicine and science in particular contexts and the discourses that construct these relationships might be regarded as topics for sociological enquiry. These are also two flourishing sub fields of sociology which might seem well-equipped to take up these topics: the sociologies of medicine and of science (Pinch: 1992).

It is viewed that the invention of a new drug or technology may be considered as vista towards treatment of diseases. The new drug or technology would be thought as a great contribution of science. But the intention behind the invention is hidden from the public view. The development of these drugs or technologies, and their implementation in health care is all a planned process. Highlighting the utility of new drugs and technologies masks the hidden profit motives.

The sociologists of science and technology have produced many detailed studies of biomedical science in the laboratory (Latour and Woolgar: 1986, Lynch: 1985). After being studied in the laboratory conditions, when these studies are applied in the outside world, they are encountered with policy making and public controversy. (Peterson and Markle: 1981). At the same time, they are governed by various regulatory systems and advisory committees (Jasanoff: 1990). Therefore it can be said

that the sociologists of medicine cannot treat the technologies as given and sociologists of science cannot remain in the laboratory.

From within the Marxist political economy tradition, there have been many critical accounts of science, technology and medicine as shaped by the social and material requirements of capitalism (Doyal with Pennell: 1979, Levidow and Young: 1982). Interactionism and ethnography have been central to both fields, with the inspirational influence of the late Anselm Strauss being acknowledged in both the camps (Atkinson: 1995, Fujimura: 1996, Star: 1995).

The American functionalists, Robert Merton's work is widely cited as establishing the study of science as a social institution. He analysed the study of science with its own distinctive prescribed norms i.e. universalism, communality, organised scepticism and disinterestedness, as a distinctive field within sociology (Webster: 1991, Storer: 1971). Merton figures less prominently in general medical sociology textbooks today although his influence on another of that field's functionalist founding fathers, Talcott Parsons, has been recognised (Gerhardt: 1989).

From the late 1960s, much recent work in the sociology of science has located itself as "Post-Mertonian", the epithet intended to convey more than the passage of time (Bartley: 1990, Webster: 1991). A similar distancing from the functionalist approach to professions is evident in medical sociology. Post-Mertonian sociology of science and medicine claims to provide a more critical analysis of medicine and science, rejecting any notion that these bodies of knowledge and those who develop and use them are outside society.⁸

⁸ Elston, M.A (1997) *The sociology of medical science and technology*, Blackwell publishers, London, pp.7.

In the context of Post-Kuhnian philosophy of science (Kuhn: 1970), sociologists and others turned their attention to the processes through which scientists make judgements about the value of scientific representations of nature.⁹

Thus, advocates of the strong programme for the sociology of scientific knowledge (SSK) as opposed to the Mertonian “weak” programme of sociology of science focussed particularly on the shaping of science by social interests (Bloor: 1976). Other SSK approaches adopted since the 1970s have included discourse and ethnomethodological analyses of scientific texts and talk (Gilbert and Mulkey: 1984, Lynch: 1985) and ethnographies of laboratory practice (Latour and Woolgar: 1986). One feature that all these divergent strands within SSK share is that they make their general theoretical claims through empirical example, through painstaking description of scientists’ practices and their representations of science. Labelling all these as “social constructionism” conceals some very divergent views and controversies within SSK. Moreover, recent work in SSK has tended to drop “social” in favour of “constructionism” or “constructivism” alone. The term “social” emphasises on the social causes and considers the natural causes to be not so important. Moreover, the presupposition that the social can be distinguished a priori from the material or technical is rejected by proponents of the translation approach or actor-network theory (ANT) as developed by inter alia, Callon (1986), Latour (1987), and Law (1992). ANT focuses on the strategies scientists use for building networks to make findings into facts’ (Fujimara: 1996). Scientists or any actors, for it is regarded as being multi-faceted entrepreneurs, who engage in activities that might otherwise be designed political, social or economic as well as those practices traditionally assigned the level “scientific” (Michael: 1996). The sociological task is to follow the actors wherever they go in constructing networks. Knowledge or machines or social institutions and organisations are seen as the product of this heterogeneous materials, human and non-

⁹ Ibid, PP.8.

human. One of the more controversial aspects of ANT is its ascription of “actor” status, although not intentionally, to non-humans such as equipment.¹⁰

Since the early 1980s, SSK has devoted increasing attention to technology as well as to science, with many practitioners refusing to make a distinction and referring only to “technoscience” (Bijker: 1987). As against longstanding sociological concerns with the social impact and implications of technology, they have generally rejected that formulation as implying asocial technological determinism i.e. the view that technological development follows an autonomous, technically shaped path which then shapes society.¹¹

Philosophy of science and analytic philosophy, symbolic interactionism and ethnography has mainly influenced the works of SSK. Post-Kuhnian philosophy of science, radical psychiatry, Marxism, critical theory and, in particular, the writings of Foucault has all been drawn recently. The emerging sociologies of the body by Willams (1997) and of risk by Gabe (1995) have been influential in medical sociology’s discussions of representations of medical knowledge. The “social constructionism” in medical sociology is also far from a unitary phenomenon. But the prefix “social” is widely current in medical sociology’s discussion of constructionism. As Capor and Berg (1995) argue, much of its focus on medical knowledge is seen as a means to an end, as enhancing medical sociology’s potential to trace relations of power. Thus epidemiology is analysed in the Foucauldian perspective as a means of extending the clinical gaze into the community (Armstrong: 1983). In contrast, most constructionism in SSK is, overtly atleast, less concerned with the functions of knowledge of social control.¹²

¹⁰ Ibid, PP.9.

¹¹ Ibid, PP.9.

¹² Ibid, PP.9.

Medical sociologists' studies of medical technologies have tended to focus on the social implications of technology and only to a lesser extent, on its shaping by social interests or construction with some studies of the diffusion of medical technologies into practice (McKinlay: 1981, Press and Browner: 1997). There are different levels and in order to understand the social implications of new technologies one has to combine these levels.¹³

One of the attractions of a sociology of scientific or medical knowledge was that it promised a more autonomous role for the sociologist: a move not just from the sociology for medicine/science to sociology of medicine/science from the margins but towards a sociology of the care of medicine/science (Bartley: 1990, Casper and Berg: 1995). A similar trajectory and the influence of constructionism is detectable in the development of another area of cognate interest for the two sub fields: the study of the lay public's ideas and understanding of medicine/ science, of health and the workings of the body.¹⁴

One starting point for sociological investigation of the public's ideas has been what is often labelled in sociology of science as the "public deficit model". This focuses on the gap between lay and authoritative scientific or professional understanding, as established, for example, in surveys testing the population's grasp of accredited scientific knowledge (Irwin and Wynne: 1996, Michael: 1996). As conceptualised in much health policy and the growing movement to promote the public understanding of science (Michael: 1996), this deficiency on the part of the public has serious practical implications. Ignorance or irrational beliefs are alleged to lead to inappropriate behaviour on the part of the public: failure to comply with medical advice, failure to consult doctors appropriately, failure to abstain from risky behaviour and failure to become interested in scientific careers (Bury: 1997, Good: 1994, Irwin and Wynne:

¹³ Schroeder (1996) Possible worlds: The social dynamic of virtual reality technology, Westview press, Boulder, PP.9.

¹⁴ Ibid, PP.10.

1996). It also, allegedly, leads to political problems: to ill-informed and irrational protests against legitimate scientific activities (Elston: 1994) and to a more general inability of the public to pay their part (Irwin and Wynne: 1996, Michael: 1996). The remedy generally proposed is increasing the public's scientific or medical literacy: implicitly assuming that to know science/medicine is to love science/medicine.¹⁵

Thus, the relationships between expert and lay understandings of medicine and science, the construction of medical knowledge and technology and its social implications and the division of labour and organisation of work in medical science are all topics where the sociologists of medicine and science might fruitfully come together. Apart from the issues which normally dominate the discourse on SSK such as professional dominance, lay culture and beliefs, class interests etc., there is one area where all these overlapping interests and extensive cross-fertilisation between the sociologists of medicine and science and other fields have been evident for sometime—the study of gender and medical science and technology.¹⁶

2.2 GENDER, MEDICAL SCIENCE AND TECHNOLOGY:

Notwithstanding the continuing gender-blindness of much mainstream work in both sociology of medicine and sociology of science (Delamont: 1987), sociological studies focusing on gender and medical science have proliferated since the 1970s. The study of gender and medical science has been a lively “trading zone” (Kellar: 1995) not just between the sociologies of medicine and science but also between philosophy and history of science, literary theory, postmodernism, anthropology and feminist theory, with much input from reflective biologists and biomedical scientists (Hubbard: 1990). Most of the work in this trading zone is engaged in a political or cultural critique of medical science as it currently is, sometimes preferring an alternative vision (Rose: 1994). Initially, much of it focused on women rather than gender although this has

¹⁵ Ibid, PP. 11.

¹⁶ Ibid, PP. 12.

changed in recent years, especially in work informed by post-structuralist critiques (Haraway: 1991, Annandale and Clark: 1996).

The gender and science literature is preoccupied with medicine and biomedical science. These fields have been conceptualised as patriarchal ideologies which legitimise women's inferiority in, for example, analysis of the representation of women and men in medical texts (Martin: 1989). Medical technologies have been assessed in terms of their implications for control or liberation of women. And sociologists have examined how women, particularly through the women's health movement have contested or sometimes embraced their development and use (Clarke and Montini: 1993, Motini and Ruzek: 1993).

The core activity in this trading zone of gender and medical science and technology is the study of human reproduction and practice related to childbirth, contraception and abortion and, more recently, to conception and pre-natal screening and interventions. In particular, research on the so-called new reproductive technologies (NRTs) has produced fruitful exchanges between sociologists of science and medicine as well as with anthropologists, cultural theorists and sociologists of the family (Gray: 1995, McNeil: 1990, Stacey: 1992, Stanworth: 1987).

2.3 HEALTH AND SCIENTIFIC PROFESSIONALS AND THEIR WORK:

Another area where the influence of technological impacts can be assessed is by looking through the role performed by the health professionals. An emphasis on the function of professions for society was displaced by more critical analyses of professions as agents of social control and of the political processes through which professional autonomy and power had been achieved (Macdonald: 1995).

There has recently been growing interest in Abbott's (1998) work on jurisdictional competition between professionals (Fujimura: 1996). And many of the sociology of

scientific knowledge (SSK) studies are implicitly, studies of divisions of labour and inter or intra occupational interactions. Sociologists studying science in action have often adhered to Latour's (1987) contribution of the instances where experiments are performed by the scientists (overwhelmingly male), who are generally influenced the scientific entrepreneurs and politicians (Mackenzie: 1993). This is with the view to generate resources for the research proceedings in the laboratory. Rather less frequently, they have looked down at those who do much of mundane, unsung articulation work of science i.e. the "machine work". The "safety work" and particularly where human or animal research subjects are concerned, the "sentimental work" is considered to make research possible. These include technicians and in much medical research, nurses (Rose: 1994, Shapin: 1989, Star: 1995, Strauss: 1985, Muller: 1997).

As a result of the bureaucratisation of medical care, which can be considered as a result of the growth of capitalism, physicians are reduced to the position of a mere proletariat. Their function in the capitalist system is just to meet the demands of the lucrative advantages of medical practice (McKinlay and Arches: 1985). According to McKinlay and Arches the term "proletarianisation" is used to denote the process by which an occupational category is divested of control over certain prerogatives relating to the location, content and essentiality of its task activities and is thereby subordinated to the broader requirements of production under advanced capitalism¹⁷

With the growth of bureaucratisation of medical care, there has been simultaneously rise of university medical centres, for-profit hospitals and health maintenance organisations. This is not only seen in case of medical care but all sectors of the economy. The basic principle of capitalism is based on the maximisation of profit. In order to achieve this, a capitalist always tries to have a strong hold on the market by establishing its monopoly. And this monopoly is achieved through the process of

¹⁷ McKinlay, J. B and Joan, A (1985) *Towards the proletarianisation of physicians*, *International journal of Health Services*, Vol.15, No.2, PP.161.

competition. So also the growth of for-profit hospitals have tried to maintain a strong hold by making available advanced techniques and drugs. The motive behind all these is not for the advancement of medical care but to make profits (Mckinlay and Arches).

In the sphere of bureaucratisation of medical care, the position of physicians has been miserable. According to Mckinlay and Arches, the increased bureaucratisation of medical practice, which results from its subordination to the requirements of advanced capitalism, is increasingly reducing physicians to salaried-employee status.¹⁸ The bureaucratic employees make the physicians to employ their skills to make use of the scientifically advanced medical techniques and drugs. And this whole process is to meet the intention of making profits (Mckinlay and Arches).

2.4 DEVELOPMENT OF MEDICAL SCIENCE:

The history of medicine is marked with landmark achievements. Efforts have been made and also are being made to invent new processes, taking the human health into consideration. This can be seen from the invention of drugs, vaccines, x-ray, ultrasound, ECG, TMT, Colour Doppler, CAT scan, MRI, EEG etc. The range of the inventions are going on increasing day by day and at the same time new complications are cropping up from it.

Soaring medical costs have also prompted new scrutiny of what we are getting for our health dollars. The answers are disturbing. Too, often enthusiasm for the latest scientific breakthroughs has led to exaggerated expectations and uncritical acceptance. Medical history is full of examples of promising new techniques that later proved disappointing, if not dangerous (Cochrane: 1972).

Furthermore, we now know that medicine's contribution to the health of the population as a whole is really rather small in comparison to the role of social and

environmental conditions. Analysing trends in morbidity and mortality over the past three centuries, Thomas Mckeown has shown that for most diseases, the introduction of effective medical procedures had little if any detectable effect on death rates, whose downward course seemed to be governed primarily by improvements in nutrition, living standards, and personal behaviours such as reproduction. (Mckeown: 1979).

The development and implementation of new sophisticated technologies has brought about a number of issues that has to be looked upon. According to Dutton this ranges from, increased scale and costs, enhanced power of medicine and science, complex social policy issues, unprecedented governmental and industrial control, to, new ethical issues.

1. INCREASED SCALE AND COSTS:

Health is considered as one of the vital area wherein public investment is deemed necessary. This is for the purpose of bringing about human resource development.

Successful technologies add geometrically to overall expenditures on health care, since they create new products and services that reinforce the inflationary spiral of medical costs. Increased public funding for medicine and biomedical research and the use of mass marketing and production have also expanded the scale of modern medicine.¹⁹

2. ENHANCED POWER OF MEDICINE AND SCIENCE:

Medicine's ability to cure many acute illnesses has proven a mixed blessing. Keeping people alive longer has led to higher rates of disability in the population, rising

¹⁸ Ibid, PP. 171.

¹⁹ Dutton, D.B (1988) *Worse than the disease: The pitfalls of medical progress*, Press syndicate of university of Cambridge, U.S.A, PP. 14.

medical care costs, and an increasing prevalence of chronic conditions and hereditary genetic abnormalities, which is especially found in the industrialized countries. Here again, ironically, medicine's current problems reveal the "failures of success" (Gruenberg: 1977). The new sophisticated techniques have led to fatal side effects and hereditary genetic abnormalities.

The enormous power of modern science and technology has outstripped our ability, or willingness, to control its consequences.²⁰



3.COMPLEX SOCIAL POLICY ISSUES:

Medicine's increasing scale, costs, and capabilities have created qualitatively new policy dilemmas. Many of these arise from the social and human consequences of technical achievements, which are often ignored until it is too late to do anything about them.

Another area in which technical achievements challenge our ability to cope with them is in pharmaceutical innovation. Mass marketing of drugs creates large-scale exposures to risk that strain traditional legal doctrines in personal injury suits. While a certain amount of clinical discretion is obviously essential, allowing a new use to become widespread defeats the purpose of federal regulation of drug safety and efficacy.

The complex demands that technological developments place on society is the inability of present institutional mechanisms to meet them.²¹

²⁰ Ibid, PP.15.

²¹ Ibid,PP.17.

4.UNPRECEDENTED GOVERNMENTAL AND INDUSTRIAL CONTROL:

Modern science and medicine are increasingly dependent on both government and industry to support the massive biomedical research established created by federal post war investment. Indeed, many federal officials now openly view science as an “instrument of the state” (Fredrickson: 1981). And, as it is said, ‘he who pays the piper calls the tune’.

Many academic scientists have been able to turn the fruits of decades of public funding into personal millions. Universities, too, are looking for profit from what, in the world of corporate-style academe, is officially called “intellectual property”. A major shift in practices and priorities is also occurring within medicine itself, under the impetus of federal efforts to expand corporate involvement in both health care delivery and medical research.

The long-range consequences of the “corporatisation” of science and medicine are still unknown, but it is clear that private industry, as well as the federal government, now plays a major role in determining the course of medical innovation.²²

5.NEW ETHICAL ISSUES:

In an era of restrictions in the availability of basic preventive and primary care services, we can no longer afford to ignore considerations of cost-effectiveness.²³

The ethical issues are raised when the new sophisticated technologies are not made available to the people, who are incapable of affording it. The commercialisation of technologies has led to a situation where only the individuals having the paying

²² Ibid, PP.18.

²³ Ibid, PP.18.

capacity can go for it. However, it is the responsibility of the government to ensure equitable distribution of the benefits of medical research among all sections of the population in the society. This calls forth for investing in cost-effective primary care services than in expensive sophisticated techniques.

2.5 VIEWS ABOUT RESEARCH AND DEVELOPMENT OF MEDICAL SCIENCE:

The driving force for the nation's economy, according to federal officials and business leaders, is its ability to develop new and better technologies. Technological innovation is vital to economy, according to federal officials and business leaders, is its ability to develop new and better technologies. Technological innovation is vital to economic growth and international competitiveness; and scientific research- particularly the "biologic revolution" heralded by genetic engineering- provides the intellectual base for continuing innovation and development (Gleen: 1982,Hofmann: 1981). This is often viewed in spite of the governmental control to reduce the development of dangerous drugs and technology.

Some observers see few if any conflicts between promoting technological innovation to bolster the economy on the one hand, and health and social goals on the other. "Richer is safer", says political scientist Aaron Wildavsky; more economic and scientific development offers the surest way to improve the level of social well being (Wildavsky: 1979). He dismisses concerns about the risks of new drugs and technologies as the utopian pursuit of a risk-free society by overcautious government bureaucrats, and laments the loss of the freewheeling, risk-taking spirit of the frontier. Others disagree. In a book entitled "A Nation of Guinea Pigs", legal scholar Marshall Shapo argues that with the mass marketing of drugs, pesticides, and other chemical products, we are already the unwitting victims of mass chemical experimentation (shapo: 1979). According to Shapo and others, without greater public accountability,

more “progress” along current lines, emphasising chemical and technological innovation, will only create greater risks and more unexpected problems.

Indeed, our most important health needs today require not more “technology”, in the conventional sense- we cannot even seem to manage what we have-but rather such things as more creative and efficient forms of medical care, new kinds of workplace arrangements, innovative approaches to risk detection and management, more effective forms of patient education and self- care, novel social service and community support programs, new channels of communication between science and public, and revitalised forms of government.²⁴

2.6 ROLE OF PHYSICIANS IN HEALTH CARE:

An expanding proportion of the new burden of disease of the last fifteen years is itself the result of medical intervention in favour of people who might become sick. It is doctor-made or *iatrogenic*.²⁵

After a century of pursuit of medical utopia, and contrary to current conventional wisdom (De solla price: 1863), medical services have not been important in producing the changes in life expectancy that have occurred. A vast amount of contemporary clinical care is incidental to the curing of disease, but the damage done by medicine to the health of individuals and populations is very significant.

The combined death rate from scarlet fever, diphtheria, whooping cough, and measles among children up to fifteen shows that nearly 90% of the total decline in mortality between 1860 and 1965 had occurred before the introduction of antibiotics and widespread immunisation (Porter: 1971). In part this recession may be attributed to improved housing and to a decrease in the virulence of microorganisms, but by far the

²⁴ Ibid, PP.25.

²⁵ Illich, I (1976) *Limits to medicine*, Hazel watson and vency limited, U.K, PP.22.

most important factor was a higher host-resistance due to better nutrition. In poor countries today, diarrhoea and upper-respiratory-tract infections occur more frequently, last longer, and lead to higher mortality where nutrition is poor, no matter how much or how little medical care is available (Scrimshaw, Taylor and Gordon: 1968).

But two things are certain: the professional practice of physicians cannot be credited with the elimination of old forms of mortality and morbidity, nor should it be blamed for the increased expectancy of life spent in suffering from the new diseases. For more than a century, analysis of disease trends has shown that the environment is the primary determinant of the state of general health of Winkelstein: 1972).

Awe-inspiring medical technology has combined with egalitarian rhetoric to create the impression that contemporary medicine is highly effective.²⁶ Undoubtedly, during the last generation, a limited number of specific procedures have become extremely useful. But where they are not monopolised by professionals as tools of their trade, those which are applicable to widespread diseases, are usually very inexpensive and require a minimum of personal skills, materials, and custodial services from hospitals. In contrast, most of today's skyrocketing medical expenditures are destined for the kind of diagnosis and treatment whose effectiveness at best is doubtful (Cochrane: 1972, Querido: 1963).

Among murderous institutions, only modern malnutrition injures more people than iatrogenic disease in its various manifestations (Moser: 1969, Spain: 1963, D'Arcy and Griffin: 1972).

With the transformation of the doctor from an artisan exercising a skill on personally known individuals into a technician applying scientific rules to classes of patients, malpractice acquired an anonymous, almost respectable status. What had formerly

been considered an abuse of confidence and a moral fault can now be rationalised into the occasional breakdown of equipment and operators. In a complex technological hospital, negligence becomes “random human error” or “system breakdown”, callousness becomes “scientific detachment”, and incompetence becomes “a lack of specialised equipment”. The depersonalisation of diagnosis and therapy has changed malpractice from an ethical into a technical problem (Goffman and Tamplin: 1970).

The undesirable side effects of approved, mistaken, callous, or contra-indicated technical contacts with the medical system represent just the first level of pathogenic medicine. Such clinical iatrogenesis includes not only the damage that doctors inflict with the intent of curing or of exploiting the patient, but also those other torts that result from the doctor’s attempt to protect himself against the possibility of a suit for malpractice.²⁷

On the second level (Audy: 1970), medical practice sponsors sickness by reinforcing a morbid society that encourages people to become consumers of curative, preventive, industrial, and environmental medicine.

On a third level, the so-called health professions have an even deeper, culturally health-denying effect in so far as they destroy the potential of people to deal with their human weakness, vulnerability, and uniqueness in a personal and autonomous way. The patient in the grip of contemporary medicine is but one instance of mankind in the grip of its pernicious techniques.

Medical *nemesis* is resistant to medical remedies. It can be reversed only through a recovery of the will to self-care among the laity, and through the legal, political, and

²⁶ Ibid, PP.30.

²⁷ Ibid, PP.41.

institutional recognition of the right to care, which imposes limits upon the professional monopoly of physicians.²⁸

Social iatrogenesis is at work when health care is turned into a standardised item, a staple; when all suffering is “hospitalised” and homes become inhospitable to birth, sickness, and death; when the language in which people could experience their bodies is turned into bureaucratic gobbledegook; or when suffering, mourning, and healing outside the patient role are labelled a form of deviance.

When the intensity of biomedical invention crosses a critical threshold, clinical iatrogenesis turns from error, accident, or fault into an incurable perversion of medical practice. In the same way, when professional autonomy degenerates into a radical monopoly and people are rendered impotent to cope with their milieu, social iatrogenesis becomes the main product of the medical organisation.²⁹

Just as clinical iatrogenesis becomes medically reversed only by a decline of the enterprise, so can social iatrogenesis be reversed only by political action that retrenches professional dominance. Iatrogenic medicine reinforces a morbid society in which social control of the population by the medical system turns into a principal economic activity.³⁰

The issue of social iatrogenesis is often confused with the diagnostic authority of the healer. To defuse the issue and to protect their reputation, some physicians insist on the obvious: namely, that medicine cannot be practiced without the iatrogenic creation of disease. Medicine always creates illness as a social state (Fox: 1968). The recognised healer transmits to individuals the social possibilities for acting sick (Parsons: 1951, Siegler and Osmond: 1974). Each culture has its own characteristic

²⁸ Ibid, PP.44.

²⁹ Ibid, PP.49.

³⁰ Ibid, PP.51.

perception of disease (Clements: 1932) and thus its unique hygienic mask (Freidson: 1966). Disease takes its features from the physician who casts the actors into one of the available roles (Garfinkel: 1956). To make people legitimately sick is as implicit in the physician's power as the poisonous potential of the remedy that works (Lewin: 1883). The medicine man commands poisons and charms. The Greeks' only word for "drug"- pharmakon- did not distinguish between the power to cure and the power to kill (Gimlette: 1971, Gimlette and Thompson: 1971).

In primitive societies it is obvious that in the exercise of medical skill, the recognition of moral power is implied. Nobody would summon the medicine man unless he conceded to him the skill of discerning evil spirits from good ones. In a higher civilisation this power expands. Here medicine is exercised by full-time specialists who control large populations by means of bureaucratic institutions (Rosenblum: 1970). These specialists form professional groups, which exercise a unique kind of control over their own work (Goode: 1960).

The medical profession is a manifestation of the control exercised by a structure of class power to which the university-trained elites belong. Only doctors now "know" what constitutes sickness, who is sick, and what shall be done to the sick and to those whom they consider at a special risk.³¹

According to Feldstein, hospitals register well-insured patients. And at the same time rather than providing old products more efficiently and cheaply, are economically motivated to move towards new and increasingly expensive ways of doing things. Changing products rather than higher labour costs, bad administration, or lack of technological progress are blamed for the rise.

³¹ Ibid, PP.55.

Doctors are not needed to medicalise the drugs for treatment (Ajami: 1973, Brunn: 1969, Blum: 1970). Even without too many hospitals and medical schools a culture can become prey of a pharmaceutical invasion. Each culture has its poisons, its remedies, its placebos, and its ritual settings for their administration (Valliant: 1970, Proger: 1969). Most of these are destined for the healthy rather than for the sick. Powerful medical drugs easily destroy the historically rooted pattern that fits each culture to its poisons; they usually cause more damage than profit to health, and ultimately establish a new attitude in which the body is perceived as a machine run by mechanical and manipulative switches (Goodman and Gilman: 1970, Morgan and WeintraubL: 1972, Stolley and Lasagna: 1969).

The current pattern of over-consumption of drugs- be they everyday diet; free, for sale, or stolen- can be explained only as the result of a belief that so far developed in every culture where the market for consumer goods has reached a critical volume. In such a society, people come to believe that in health care, as in all other fields of endeavour, technology can be used to change the human condition according to almost any design.³² The pharmaceutical invasion leads the patient to medication, by himself or by others that reduces his ability to cope with a body for which he can still care.³³

For rich and poor, life is turned into a pilgrimage through check-ups and clinics back to the ward where it started (Hunter: 1974, Lindheim: 1977). The medicalisation of prevention thus becomes another major symptom of social iatrogenesis. It trends to transform personal responsibility for the future into management by some agency.³⁴

Routine performance of early diagnostic tests on large populations guarantees the medical scientist a broad base from which to select the cases that best fit existing treatment facilities or are most useful in the attainment of research goals, whether or

³² Ibid, PP.82.

³³ Ibid, PP.85.

³⁴ Ibid, PP.97.

not the therapies cure, rehabilitate, or soothe. In the process, people are strengthened in their belief that are machines whose durability depends on visits to the maintenance shop, and are thus not only obliged but also pressured to foot the bill for the market research and the sales activities of the medical establishment.³⁵

The sick-role described by Parsons fits modern society only as long as doctors act as if treatment were usually effective and while the general public is willing to share the rosy view. They are turned into patients whom medicine tests and repairs, into administered citizens whose healthy behaviour a medical bureaucracy guides, and into guinea pigs on whom medical science constantly experiments.³⁶

2.7 EXAMPLES OF LIMITATIONS OF MEDICAL TECHNOLOGIES:

Donald (1994) has presented a vivid view of medical technologies. In his words, “after all, it took the best part of half a century before the use of x-rays in pregnancy was associated with a significant increase in the incidence of leukaemia and malignant disease in later childhood of the irradiated foetus”.

The list of possibly hazardous effects of ultrasound is legion (Stratmeyer: 1980). As with other medical monitoring or treatment techniques, the appropriate methodology for assessing both the benefits and hazards of ultrasound scanning in pregnancy is that of a randomised controlled trial, with sufficient period of follow-up to determine the presence or absence of long-term morbidity during the childhood and adulthoods of foetus ultrasonically surveyed *in utero*. However, it can be very difficult to set up this sort of evaluation once a practice has become established in clinical work (Oakley: 1984).³⁷

³⁵ Ibid, PP. 103.

³⁶ Ibid, PP. 129.

³⁷ Oakley, A(1986) *The captured womb: A history of the medical care of pregnant women*, Oxford, Basil Blackwell, PP.169.

Mole's own theories about possible adverse effects focussed on damage to vision or hearing and on Down's syndrome in the children of female fetuses receiving ultrasound in utero. Wladimiroff and Laar (1980) found that a single ultrasound examination could detect babies that were both small- and large- for-dates, but they didn't demonstrate any difference in pregnancy "management" or perinatal mortality and morbidity with ultrasound, and no long-term follow-up were available on the childhood health of these ultrasound foetus.

It can be said that the recommendation of ultrasound should be done for health benefits than cost benefits. It should benefit the pregnant woman than making them frequently visit the hospital without any necessity. The technology should be more focussed on health promoting by having a follow-up method for those undergoing the tests.

2.8 INTERRELATIONSHIP BETWEEN TECHNOLOGY AND SOCIAL DIMENSIONS:

The relationship between any new- however embryonic -health technologies and those already established will depend on how they are received in the present and this in turn depends on whether they are regarded as making sense, and if they can be translated into the more everyday world of the technology user.³⁸

New technologies may promise more than is deliverable and make new demands on those who try to deliver them. Technologies are only successful when they make sense within the existing social relations within which they are to function, suggesting the

³⁸ Webster, A (2002) Innovative health technologies and social : Redefining health, medicine and the body, *Current sociology*, Vol.50(3), PP.443.

crucial role played by the translation and even reinvention of technologies into everyday contexts of use.³⁹

Medicine has itself become more and more dependent on increasing sophisticated technologies that have been drawn from bioscience, engineering, information technologies and elsewhere. The increasing reliance on such technologies marks what pickstone (2002) has called a shift from “biological medicine” to “techno-medicine” The latter has of course been driven by pharmaceutical and medical devices industries and according to some represents a fundamental shift from a public health social-hygienist framework for medical provision, to one which has become increasingly obsessed with “miracle technology”- the creeping fetishisation of technology, hardware and gadgetry (Knight: 1986, blume:1997).

Accompanying these studies, yet pointing to the paradoxes of a society shaped by a more powerful yet ambiguous technoscience, have been the broader theoretical debates over the arrival of risk society (Beck etal: 1994, Lupton: 1999) and the dismantling of cultural and political bases of expertise and trusted knowledge (Barnes: 1999).

Much medical sociology has, over the past two decades, offered us an account of the ever-increasing strength of biomedical model of illness and disease and the professional dominance that goes with it.⁴⁰

The other related area that one need to consider in reviewing the present understanding of medical technology is that relating to work on the body (Turner: 1996, Nettleton and Watson: 1998, Hughes: 2000). Considerable emphasis has been given to the power of “the medical gaze” that has moved deeper and deeper into body structures- from surface anatomy, through x-rays to intra-body physiology and now to genetics.

³⁹ Ibid, PP.444.

⁴⁰ Ibid, PP.445.

This model of the body draws on the disciplines of anatomy, physiology and pathology not only to understand and classify the body but in doing so to determine the limits of normality and abnormality- and thus illness and disease- which lead to medical intervention. This powerful medical gaze occurs not only at the level of individual but also at a public, collective level by the regulation of bodies by the state and its health agencies, through, for example, national screening programmes for cancer or other disorders.⁴¹ But as prior (2001) observes, the growing sophistication (through imaging and genetic diagnostics) of such programmes means that the “boundaries of abnormality” are being pushed back “to find disease at earlier and earlier stages”.

As a result, medical technology has created patients without symptoms, the “worried well”, who occupy what might be called a therapeutic limbo, adding new forms of ambiguity and risk for both physicians and those subject to their gaze. Consequently, these new forms of screening and classification that are to be found throughout most advanced health systems create a situation where the control they engender may well be much less than some of the theoretical models of surveillance culture might suggest (Armstrong:1995).

These technologies have not emerged from clinical practice or experimentation, as in the (heroic) past, but from molecular biology and bioinformatics labs, and, as with much of technology that surrounds us today, have enabled us to do more things. There are at least three ways in which recent research in STS (science and technology studies) might point to qualitative shifts in the relation between health technologies and the social.⁴²

⁴¹ Ibid, PP.445.

⁴² Ibid, PP.446.

STS shows that the “technical” is always socially shaped, and that together socio-technologies can be reinvented, reconfigured in different contexts and take on more or less degrees of “mutability” and “mobility” (Mol and Law: 1994, Latour: 2000). In this way, technologies, and health technologies are no exception to this, reflect the “congealed social relations” (Grint and Woolgar: 1997) and heterogeneous networks that inform their construction (Akrich: 1992).

First, that contemporary health technology networks may be particularly difficult to build. STS shows how successful technologies, in moving from “invention” to “innovation”, depend on the mobilisation and stabilisation of social and material networks (Callon: 1987). However, contemporary health technologies, such as the genetic sub fields of genetic screening or genetic diagnostics, may be particularly difficult to stabilise. Not only may there be a much wider variety of social actors to enrol and mobilise on behalf of a technology- such as regulatory agencies, patient advocacy groups (as well as increasingly critical consumers), bioethics committees, physicians, and so on-but the utility and value of such technologies depend on how they are positioned in a wider and increasingly polarised ideological context.⁴³ As Jallinoja observes in the context of genetic screening: “the consumer-oriented model in pre-natal genetic counselling often conflicts with the broader policy goal which focuses on measures of efficiency and defines successful prevention in terms of termination of pregnancy”. In this way, the mobilisation of genetic screening has to position itself as meeting quite contrary needs and constituencies at the same time, without somehow pulling itself apart.

Secondly, in regard to the meaning of “illness” or disease, or indeed “health”, contemporary technoscience, while having what might be called greater intellectual or scientific “density” in terms of the increasing levels of complex, integrated, specialist knowledge that underpin it, is by virtue of this very complexity unlikely to be able to

⁴³ Ibid, PP.447.

offer medical diagnoses that derive from pathological cause to symptomatic effect. Indeed, high-tech medicine generates forms of diagnosis that are more likely to depend on the language of risk and probabilities than the language of causality. This is especially so in the context of “new genetics” (principally related to complex multi-factorial disease derived from molecular biology where genetic diagnostics creates new categories of pre-symptomatic “patients”- those who may develop disease in the future- but for whom it can offer little now (Nelkin and Lindee: 1995, Clark: 1995).

The third sense in which we can say that contemporary health technologies are qualitatively distinct from the past is that they deconstruct the physical body as the locus for health and illness. Recent work in sociology of the body (Turner: 1992, Crossley: 1996) has stressed the need to see social action, interaction and their meaning as crucially “embodied”, stressing the physical and emotional framing of everyday life. While this work has been vital in re-engaging sociology with a core dimension of lived experience that had often been neglected in the past (Frank: 1990), such work has also stressed the socially constructed and fragile status of “the body” per se. This theme is one that related work in STS suggests is particularly linked to the development of medical fields such as genetics and informatics. This work is showing how the boundaries and very meaning of our bodies are changing-how we are reconfiguring our bodies and the relations we have towards each other through both the new genetics (Franklin: 1997, Strathern: 1992) and informatics.

These three dynamics- in regard to technology networks, the epistemological and professional authority of techno science, and the boundaries of the body-are working together in such a way as to reaffirm the power of the (bioscience) medical gaze while, simultaneously, knowing it out of focus.⁴⁴

⁴⁴ Ibid, PP.449.

New innovative health technologies have powerful, determining effects wherever and whenever they are introduced. On the contrary, we must recognise that these technologies do simply arrive in the health market- this has to be created, and clinicians and patients, regulatory agencies and health authorities all have to see them as of value. Moreover, at the everyday level, there has always been- as the “transactional model” suggests- negotiation between patients and medics over the meaning and utility of clinical intervention and techniques. What can be said is that the ways in which these technologies are defined, given meaning, and challenged by lay actors is opening the medical “Black bag” and loosening rather than strengthening the control the doctor has over items found within it.⁴⁵

In opening the “black bag” of medicine, the contribution that STS makes towards understanding the contemporary provisional, uncertain, and risk-laden trajectory of medical futures need not lead us into a situation where our deconstructivism is simultaneously destructive. The deconstruction of “the technical” to reveal its “socially congealed” properties does not mean that the technical has a materiality and functionality that has no value; indeed, one might argue that the more medical technologies run through and are shaped by the social gauntlet of their construction, the more robust they are likely to be (Nowotny et al: 2001). As Williams (2001) has recently argued, the capacity to deconstruct the biomedical model and its epistemological arrogance need not lead us into a parallel sociological conceit that denies any warrant to medical knowledge claims only to give preference to those of our own.

2.9 TECHNOLOGICAL ADVANCEMENTS AND LAGGING SOCIAL RESPONSES:

The spectacular advancements in medical technology in the last decade are quite well known (Fox: 1985). With each technological development, new kinds of physical

⁴⁵ Ibid, pp.451.

handicaps and social dilemmas are created. This can be illustrated by the cultural lag (Ogburn: 1922) created by the invention and widespread utilisation of life-sustaining device, the mechanical ventilators, which breathes for those whose lungs are impaired by disease or accident.⁴⁶

The developments in health care technology, in addition to saving and prolonging life, create new dilemmas for which one is neither medically, ethically or socially prepared. In case of ventilator-assisted patients, nurses have noted that such patients regularly seek to get their attention-tapping on their tables when they are unable to speak, deliberately setting off alarms, and so on. Even family members reported the same kind of tactics from ventilator patients receiving home care. From these it can be said that the ties to the machine create an inordinate demand for human relationships. First, being connected to and having to depend on the operation of a machine around the clock for life can leave one in a situation of interactional deprivation. Second, not being ambulatory, the ventilator-assisted patient must entice others to come to him/her for human contact.⁴⁷

Ventilator-assisted patients need a tremendous amount of care. They need to be suctioned regularly, to be turned, to be fed, and they may be incontinent. Technology has produced a situation in which the boundless interactional needs of the patient, generated by machine dependency are most difficult to meet (Lorber: 1975, Papper: 1970).

During medical emergency, the family members are consulted for their preference over placing the patient on a ventilator. Faced with the choice between death and limited life, family members usually opt for the limited life. However, the guilt involved with the other choice is difficult to overcome. From this, it can be said that

⁴⁶ Roobby, H (1986) Technological development and the social response: the case of the ventilator-assisted patient, World congress of sociology, New Delhi.

⁴⁷ Ibid

though medical science has discovered something that has reversed the irreversible but it has sidelined the psychological burden the family of the patient has to undergo in making the decision. It is not only the family members but also the doctors, who also undergo the strenuous situation of avoiding malpractice. An end result is that hospitals have an increasing population of patients who cannot be weaned or rehabilitated and thus can only be warehoused.⁴⁸

This condition is directly attributable to technological advancements and lagging social responses. The technological innovation in health care has social consequences beyond the issues of medical practice or therapeutic regimens. The development of mechanical ventilators does more than prolong the life of patients with malfunctioning lungs. It raises serious questions of medical ethics and changes the conditions under which decisions are made concerning the maintenance of life. As Ogburn's theory would lead us to expect, we have neither the norms, routines nor the institutions to cope with the new set of problems that has emerged. Patients, physicians, nurses, family members, close friends struggle to evolve mechanisms to meet the social consequences of the new technology and to avoid a state of anomia and other unanticipated consequences of the new life-saving device.⁴⁹

The arguments stated above can be summarised in terms of the growth and impact of technology, the role of the physicians in the implementation of technology, the interrelationship between gender and technology, and social implications of technology.

The invention of the sophisticated technologies has accelerated with the advancement of modern science. This in turn has led to the widespread implementation of technology. It is not only the scientists, but also the politicians and bureaucrats are

⁴⁸ Ibid

⁴⁹ Ibid

also involved in the process. Though it is the scientists, who invent the advanced technology, but the politicians and bureaucrats also play a role in implementing it in the society. These advanced technologies help to add on information in the treatment procedure. But at times, they may have some adverse impacts. In other words, though the invention of technology is considered to bring about marked changes in the process of treatment, it may not at times be free from side effects.

The physicians also play a vital role in the utilisation of this advanced technology. With the growth of corporate hospitals, the physicians are merely reduced to the status of that of a wage labourer. They are compelled if not forced to act in accordance to the interests of the corporate sector. And as the corporate hospitals invest a lot on medical technologies, they do try to incur profits from their investment. In such a situation, the physicians recommend the utilisation of sophisticated technology to the patients. Without considering the significance of the utilisation of the technology, the doctors may recommend them for all the cases, which may at times be unnecessary.

The techno-centric approach can also be analysed in terms of gender perspective. Generally, it is during pregnancy, when the health of a woman is given much importance. With the advancement of technology, the well being of the foetus can be assessed. But the uses of such technologies have also been illegally used to detect the sex of the foetus. And this has led to increase in the abortion rates, where there is an expectation of a girl-child. It has been studied that if the ultrasound is done after fourteen weeks of pregnancy, then it may lead to down syndrome in the child. Therefore, it can be said that the process of assessing the well being of the child, may at times be fatal to the child itself.

Then coming to the social implications of the technology, it can be said that the invention of the sophisticated technology should fit well within the society, where it is implemented. It should not only benefit some sections of the society but also try to take all the masses into consideration. The implementation and utilisation of the

advanced medical technology should help in making the process of treatment effective. Some exemption in the charges of the sophisticated technology should be implemented; so that the people belonging to lower echelons of the society can also access it.

CHAPTER-3

METHODOLOGY

The present study entitled “Perception of diagnostic techniques” is a comparative study between a government and a private hospital in the city of Bhubaneswar. It is a limited exploratory study where, one Government hospital (Capital hospital) and one Private hospital (Kalinga hospital) are taken. And then a comparison is made between them in terms of the responses of the doctors and patients in regard to the availability and utilisation of diagnostic techniques.

3.1 CONCEPTUAL FRAMEWORK:

Generally, the private health sector is the one, which invests more on diagnostic techniques. This is done with an intention to generate profit from the investments. Individuals make use of this private sector being influenced by its quality concerns, thereby paying a high charge for its service. On the other hand, due to lack of funds, the public health sector is devoid of sophisticated medical techniques. Despite this, the public sector is mostly utilised by the people belonging to poorer sections of the society.

Therefore, in the study an attempt has been made to understand the importance of the sophisticated medical techniques during health care. And this is interpreted through the responses of the doctors and patients in a government and a private hospital.

3.2 THE BROAD OBJECTIVE OF THE STUDY:

In the present limited exploratory study, an attempt is made to understand the perception of patients and the doctors, both in government and private hospitals about the availability and utilisation of diagnostic techniques. This was done to cross check the issues that emerged during the review of literature.

3.3 THE SPECIFIC OBJECTIVES:

The following are the specific objectives of the study:

1. To understand the perception of the doctors, both in the government and private hospital, about the availability and utilisation of diagnostic techniques.
2. To understand the perception of the patients, both in the government and private hospital, about the availability and utilisation of diagnostic techniques.
3. To make a comparison between the government and private hospitals with respect to employment of sophisticated medical techniques.

3.4 BACKGROUND OF THE AREA:

The term “Bhubaneswar” is said to be composed of two words i.e. “Bhuban” meaning world and “Iswar” meaning god. Etymologically Bhubaneswar means the “world of god”. Bhubaneswar is also known as the city of temples. It is the capital of the state of Orissa. Along with Konark and Puri, on the Bay of Bengal, it constitutes the golden triangle.

Bhubaneswar situated on 20.12'N longitude and 85.54'E latitude is a notified area covering 91,9414 sq.kms. It is situated at an altitude of 45 mts (225 feet) above the sea level. It has a bracing climate with a maximum temperature of 31.0c and 16.0c during winter and 38.0c and 27.0c during summer respectively. The average rainfall in a year is 152.4 cm (61 inches). Oriya, Hindi, English are languages of common use.

Fifty-five years back on 13th April 1948, the foundation stone for the state capital of Orissa was held at Bhubaneswar. It was a historic decision- a manifestation of the determination of the oriyas to march forward into modern times. The capital of Orissa was shifted from Cuttack to Bhubaneswar. Dr. Ottokonelgsberger prepared the plan for the new capital. The state capital has come up as a modern city.

The notified area of Bhubaneswar has two distinct divisions v.i.z., old town and the new capital town. The old town is characterised by mixed land use whereas the new capital town is planned administrative town with broad avenues, self-contained residential units, modern buildings and institutions.

The nomenclature of the area of Bhubaneswar is said to have been after the unique like Goddess Bhubaneswari, worshipped from the unknown times from the outskirts of the area, which attracted numerous religious minded people. The areas in Bhubaneswar are named after great personalities and royal dynasties of Orissa like Bapuji nagar, Kharavela nagar etc. Bhubaneswar is the place of archaeological and historical importance.

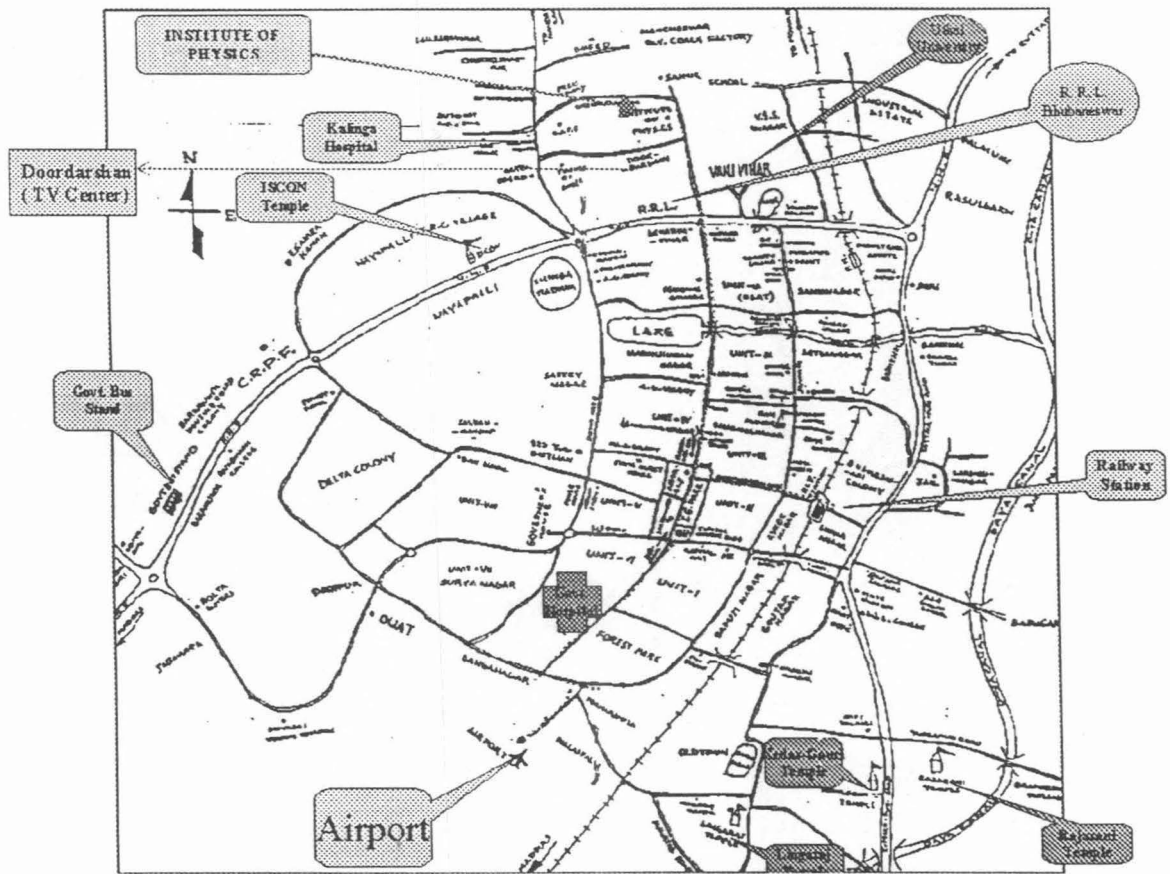
In the past, Bhubaneswar was said to have 10,000 temples. It is indeed one of the few places in the country where such a large number of ancient monuments at one place are found. The soaring spire of the Lingaraj temple, the white domed peace pagoda of Dhauli hill and the pink temple of Mahavir Jain on the Khandagiri hill generally

impresses one. The three epitomise the advent and ascendancy of Hinduism, Bhuddism and Jainism during different periods of Orissan history. Apart from these, other important temples in Bhubaneswar are Mukteswara temple, Rajarani temple, Parasurameswara temple, Anant basudev temple, Brahmeswara temple and ISKON temple.

The State Museum of Bhubaneswar has an excellent collection of local arts and crafts, archaeological artefacts, weapons and insights into Orissa's natural and tribal history. It also has the world's largest collection of palm-leaf paintings. The Tribal Research Institute Museum with its authentic tribal dwellings, created by the tribal craftsmen is a great place to get a bird's eye view of the State's tribal heritage. The Regional Plant Resource Centre (RPRC) located in Bhubaneswar has about 500 acres of plantations, tissue culture and experimental laboratory. It also has a huge lake where migratory birds make their home. The two most unique features of RPRC are its status for housing the largest rose garden in the country (an area of 20 acres) and having the largest collection of cacti (550) in Asia.

Bhubaneswar is connected by air with boeing flights to Delhi, Kolkata, Visakhapatnam, Nagpur, Hyderabad, Chennai and Mumbai. A major railhead on the south eastern railway, it has fast and superfast train connections to Kolkata, Guwahati, Delhi, Chennai, Hyderabad, Mumbai, Bangalore, Triruvanthapuram and other major cities and towns of the country. On national highway No.5, it is connected by all weather motorable roads within the state and sister states.

According to the 2001 census, Bhubaneswar has a population of 960,663. The growth rate is 38.33%. The growth rate is 38.33%. The density of population is 1,324 persons per sq.kms. The sex ratio of the city is 845, which shows the inclination towards a male-child. The literacy rate of Bhubaneswar is 84.49%.



MAP OF BHUBANESWAR

3.5 RESEARCH DESIGN:

The study tries to explore the perception of the doctors and patients about the availability and utilisation of diagnostic techniques. Here an exploratory design is followed, where a comparison is made between a government and private hospital. In both these hospitals, the responses of the patients and the doctors are analysed about

the different medical techniques. This limited study tries to crosscheck the issues that are dealt while reviewing the literature.

3.6 COVERAGE OF THE AREA UNDER STUDY:

The present study is conducted in a government and a private hospital in the city of Bhubaneswar. The government hospital (Capital hospital) that is taken is a district hospital. And the private hospital (Kalinga hospital), where the study is conducted, is recognised as one of the biggest hospital in the state.

3.7 SELECTION OF THE DOCTORS:

In the government hospital, 5 doctors were selected. Firstly, all the names of Neurologists, Cardiologists, Gynaecologists, Radiologists, Pathologists were collected. Then a doctor from each department was chosen through the lottery system.

The same procedure was repeated in the private hospital. Here also 5 doctors, from Neurology, Cardiology, Gynaecology, Radiology, Pathology were selected through the lottery system. And after the selection they were interviewed about the availability and utilisation of the diagnostic techniques.

3.8 SELECTION OF THE PATIENTS:

In the government hospital, 15 inpatients were queried about the availability and utilisation of diagnostic techniques. In the surgery ward, 8 inpatients were interviewed and in the medicine ward, 7 were interviewed. The cases interviewed in the surgery ward consisted of 4 gynaecology and 4 cardiology patients. It was with the recommendation of the doctors that the patients were selected.

Similar to that of the government hospital, 15 inpatients were interviewed in the private hospital. Here 9 inpatients were interviewed in the surgery ward and 6 were interviewed in the medicine ward. In the surgery ward 5 heart patients and 4 gynaec patients were interviewed. Here also the patients were interviewed by the recommendation of the doctors. Generally the doctors referred the cases, which were considered to be something specific.

3.9 TOOLS FOR DATA COLLECTION:

Tools refer to the methods that are used for conducting the study. In the present study, mainly interview method was used. Interview schedules were prepared separately for the doctors and the patients. And with the help of these schedules, responses of the doctors and patients were collected about the availability and utilisation of diagnostic techniques.

3.10 INTERVIEW SCHEDULE FOR THE PATIENTS:

A combined interview schedule was prepared for the patients in the private and government hospital. The schedule contained questions relating to age, sex, caste, marital status, employment status, name of the occupation (if employed), annual income, source of support (if unemployed), medical problem faced, number of times of visit to the hospital, history of the treatment process, distance of the hospital from the place of residence, views about the availability of treatment, recommendations for the tests during treatment, name of the tests, charges for the tests, sources of funding for the treatment, views about cost of the tests recommended, views about the efficiency of the tests recommended and perception about the quality of health care.

Generally, most of the questions in the interview schedule were open-ended. This was with the sole purpose to elicit wide-ranging responses from the respondents.

3.11 INTERVIEW SCHEDULE FOR THE DOCTORS:

As in the case of patients, an interview schedule was also prepared for the doctors. Here also the questions were open-ended. This was done with the intention to generate views from the doctors about the diagnostic techniques. The questions were related to the age, sex, specialisation, availability of the diagnostic techniques, charges to go for them, exemption of the charges (if any), sources of funding for them, cases wherein they were recommended, problems with them, and perception about quality of health care.

3.12 PROCESS OF DATA COLLECTION:

The data collection was done in the city of Bhubaneswar. Here one private i.e. Kalinga hospital and one government i.e. Capital hospital was taken. Then in both the hospitals, doctors and patients were interviewed about the availability and utilisation of diagnostic techniques. The data collection was through interview schedules. Two sets of interview schedules were made. One was for the doctors and the other was for the patients. 5 doctors from each private and government hospital were interviewed. In each hospital, the doctors were selected from Neurology, Cardiology, Gynaecology, Radiology, Pathology departments. Here the interviews were for about 10-15 minutes. And in both these hospitals, 15 inpatients were interviewed in each of them. The patients were interviewed in the medicine and surgery wards. Generally, about 20-30 min were taken for interviewing each patient. There were also cases where the interviews were very short, when the patients were not in a condition to speak much.

The time taken for data collection was about one month. It extended from 25th October'03 to 26th November'03.

3.13 ANALYSIS OF THE DATA:

After the data collection, the findings were ordered and analysed under two sections. One section comprised of the responses of the doctors and the other was about the responses of the patients. The responses that were elicited from the interview schedules made for the doctors and the patients were analysed and interpreted. The analysis was based on a qualitative assessment of the doctors and the patients in regard to the availability and utilisation of diagnostic techniques.

3.14 LIMITATIONS OF THE STUDY:

During the course of this study, many problems were faced. One of the major difficulties encountered in this study is the lack of availability of too much information relating to this area. Not many studies have been done about the availability and utilisation of diagnostic techniques in the hospitals. Therefore, the study lacks the advantage of having exhaustive research findings.

The sample size of the study was not very large enough. This is basically a qualitative study, where the issues that emerged during the review of available literature are explored in the field. As the sample size is small, the findings of the study cannot be generalised. But the data that were collected and analysed can be interpreted to form an idea about the general perception about the sophisticated medical techniques.

It was a time consuming process to collect information from the doctors. Generally appointments were fixed with them and they were not ready to spare a long time to answer the questions. Even emergency cases made the doctors to go, by giving their responses hastily. This was a major drawback of the study.

At the same time, responses from the patients, who were under chronic condition, could not be taken. In such situations, attendants to the patients, who were either the family members or relatives, gave their responses regarding their perception about the diagnostic techniques.

CHAPTER-4

RESPONSES OF THE PHYSICIANS AND PATIENTS WITH REGARD TO THE MEDICAL TECHNIQUES

The study focuses on the diagnostic techniques that are used in medical practice. The diagnostic techniques that are covered in the study included the equipments for laboratory investigations, X-ray, Ultrasound, Treadmill Test (TMT), Colour Doppler, Electronic Cardiogram (ECG), Computed Auxiliary Tomography (CAT) scan, Magnetic Resonance Imaging (MRI) and Electro Encephalography (EEG).

The perceptions of the doctors as well as patients regarding the diagnostic techniques were analysed in the study. A comparison was made between a government and a private hospital to access the views of the patients and doctors in both the hospitals. The study was conducted in the city of Bhubaneswar, where “Capital hospital” was taken as the government hospital and “Kalinga hospital” was taken as the private hospital.

The doctors and the patients in the government and private hospitals were asked to answer certain questions and their responses were considered as their opinions about the availability and utilisation of diagnostic techniques.

4.1 RESPONSES OF THE DOCTORS:

Interviews were conducted with the doctors through which they provided the basic information about the diagnostic techniques like the availability of the techniques, charges for the tests, exemption of the charges (if any), sources of funding for them,

recommendation for diagnostic techniques, problems with them, and lastly their perception about quality of health care. The responses of the doctors both in the government and private hospitals in regard to the diagnostic technologies can be analysed under the following heads.

1.AVAILABILITY OF DIAGNOSTIC TECHNIQUES:

There were variations between the government and private hospital with regard to the availability of diagnostic techniques. Needless to mention, the private hospital had more sophisticated techniques in comparison to that of the government hospital.

The government hospital had equipments for laboratory investigations like X-ray, Ultrasound, ECG, TMT, Colour Doppler, CAT scan. High cost diagnostic techniques like MRI were not found here.

On the other hand, the private hospital had more techniques such as those equipments for laboratory investigations. X-ray, Ultrasound, ECG, TMT, Colour Doppler and CAT scan were also available apart from MRI and EEG.

2. CHARGES FOR THE DIAGNOSTIC TECHNIQUES:

There was wide variation in the charges for the diagnostic techniques between that of the government and private sector. Generally, the charges in the private sector were relatively higher than that of the government sector.

The charges for the various diagnostic techniques like equipments for laboratory investigations, X-ray, Ultrasound, EGC, TMT, Colour Doppler, CAT scan, MRI, and EEG are given below.

NAME OF THE DIAGNOSTIC TECHNIQUES	CHARGES IN THE GOVERNMENT HOSPITAL	CHARGES IN THE PRIVATE HOSPITAL
1.LABORATORY INVESTIGATIONS: BLOOD URINE STOOL	Rs.10 RS.10 Rs.10	Rs.20 Rs.20 Rs.20
2.X-RAY	Rs.20-Rs.50	Rs.80-Rs.160
3.ULTRASOUND	Rs.100	Rs.200
4.ECG	Rs.50	Rs.150
5.TMT	Rs.350	Rs.1000
6.COLOUR DOPPLER	NOT YET FIXED	Rs.800
7.CAT SCAN	Rs.800	Rs.1450
8.MRI	NOT AVAILABLE	Rs.6000
9.EEG	NOT AVAILABLE	Rs.350

It can be seen that the charges for laboratory investigations like blood, stool and urine are double in the private as compared to that of the government hospital. In the government hospital, the charges for X-ray vary from Rs.20 to Rs.50, whereas in the private hospital, it ranges from Rs.80 to Rs.160. The price charged for Ultrasound in the private hospital is also double in comparison to the government hospital. The charge for ECG is Rs.50 in the government hospital, whereas it is Rs.150 in the private hospital. In case of TMT, the charges are Rs.350 and Rs.1000 respectively in the government and private hospitals. The charges for the Colour Doppler are Rs.800 in the private hospital, but in the government hospital, it is not yet fixed. The charges for CAT scan in the government and private hospitals are Rs.800 and Rs.1450 respectively. MRI and EEG are not available in the government hospital. In the private hospital, the charges for MRI and EEG are Rs.6000 and Rs.350.

3.EXEMPTION OF THE CHARGES FOR THE DIAGNOSTIC TECHNIQUES:

Exemption of the charges referred to the cases (if any) where charges of the diagnostic techniques were made free. In other words, the situation where the utilisation of medical techniques was made free of cost was assessed in both the government and private hospital.

When the doctors in the private hospital were asked whether there was any provision for exemption of the charges of the diagnostic technique, they replied negatively. In the private hospital the provision to provide free service of medical techniques did not exist.

On the other hand, in the government hospital, it was found that in certain cases, the charges of the diagnostic techniques were exempted. These cases were that of

emergency, below poverty line (BPL) cardholders, and retired government servants. It was during emergency, when a case has to be operated, the utilisation of medical techniques was uncharged. Even people dwelling below poverty line were not charged anything for the diagnostic techniques in the government hospital. So also persons, who have been retired from government service had a free utilisation of diagnostic techniques.

4.SOURCES OF FUNDING FOR THE DIAGNOSTIC TECHNIQUES:

The sources of funding referred to the various agencies from which money was allocated for the purchase of the diagnostic techniques and by making them available in the hospitals. And these funding sources were different in the government and private hospitals.

In the government hospital, it was found that most of the funding was from the government itself. The equipments for laboratory investigations, X-ray, Ultrasound, ECG and TMT were procured by the funding of the government. But the Colour Doppler was donated by the “Orissa health system development” and “Infosys” donated the CAT scan. Though the former donor was a private agency, the latter was a private company.

In case of the private hospital, the scenario was different. Here almost all the diagnostic techniques were made available by private funding. The various sophisticated techniques like the equipments such as those required for laboratory investigations, X-ray, Ultrasound, ECG, TMT, Colour Doppler, CAT scan, MRI, EEG were procured by loans. 49% of the loans were from various banks i.e. IDBI, ICI, Orissa cooperative bank, SBI, IPICOL, Orissa state cooperative. And the remaining 51% was from the Non-resident Indians (NRIs).

5. PRESCRIBING DIAGNOSTIC TECHNIQUES:

The private hospital had more sophisticated techniques in comparison to the government hospital. Therefore, it looked into more specific cases than the government hospital. The specific cases that came to the private hospital were prescribed the sophisticated techniques.

In the government hospital, blood tests were done for ESR (Erythrocyte sedimentation), HB (Haemoglobin), TRBC (Total Red blood test count), TLC (Total Leucocyte count), TPC (Total platelet count), BTCT (Bleeding time clotting time), Differential count, MF (Microfalaria), MP (Malaria parasite), Peripheral smear, Reticulocyte count. Apart from the above tests, MCH (Mean corpuscular volume), MCHC (Mean corpuscular Hb.Con.), PCV (Packed cell volume), Plasmodium falciparum and Vivax antigen, PT (Prothrombin time), PTT (Partial Thromboplastin time), Sickling test, AEC (Absolute Eosinophil count), CBC (Complete blood picture) were done in the private hospital.

The government hospital had X-ray facilities to be done for all parts of the body like abdomen, ankle, chest, elbow, foot, hip, knee, leg, neck, spine, shoulder, skull, tooth. But in the private hospital, special X-rays were available like IVP contrast, IVP with Ionic contrast, IV Cavogram, MCU, Mylogram, Nephrosrogram, RGU, Sialography, Sinogram, T-Tube-Cholangiogram, Venography.

Unlike the government hospital, the private hospital had the availability of MRI and EEG. The utilisation of MRI was considered to look deep into the problems in all parts of the body. And the implementation of EEG was to deal with specific cases relating to spine and brain. Needless to say, the patients had to pay heavily for these services.

6. PROBLEMS WITH THE DIAGNOSTIC TECHNIQUES:

Generally the doctors replied negatively about any adverse effects associated with the utilisation of the diagnostic techniques. This was the response, both in the government and private hospital.

On the other hand, the doctors had a very positive view for the availability and utilisation of the diagnostic techniques. To them, these techniques have a vital role to play in medical care. They viewed that the advancement of techniques has helped medical research to a large extent. According to them, these sophisticated techniques have made possible to predict the medical problem. And by doing this, they have made a deep impact upon the life of the patients. Therefore, they were of the view that the utilisation of diagnostic techniques should be encouraged more.

7. PERCEPTION ABOUT THE QUALITY OF HEALTH CARE:

The opinion of the doctors regarding health system was analysed through their perception on the quality of health care. The opinion of the doctors differed from each other. Some of the responses elicited from the doctors are given below.

“There should be proper diagnosis and treatment of the disease. Diagnosis is important in detecting the symptoms of the disease. During the treatment, the health services should be provided with full care. And this should be done to meet the satisfaction of the patient.”

“The patients should be provided with adequate facilities for the treatment as it is considered to be important in health care. And in the long term, the total well-being of the patient should be emphasised. Healthy living of the individuals should be stressed apart from providing adequate medical care services.”

“The improvement of the health system should not only be the responsibility of the doctors and service providers, but the government should take steps to create awareness about “health care” among the masses. People should be made aware of maintaining a healthy life. They should be educated about various diseases so that they would resort to the hospital whenever they exhibit the symptoms. This can help them in treatment of a disease at an initial stage. Through media, the government can educate the public about proper health maintenance for a healthy living.”

“The health care system can be made strong enough by having advanced technologies and specialised personal. This can help in improving the quality of health care. The implementation of advanced drugs and technologies can help in detecting a disease properly. And specialised physicians also help in treatment of a disease in a efficient way”

“Efficient health care should focus on proper diagnosis and at the same time proper treatment. When the patient comes to the hospital, s/he should be properly diagnosed and then treatment should be prescribed. Precautions should be taken while doing the diagnosis and the disease should be detected at an initial stage. ”

From the above opinions of the doctors, it was found that, generally by good quality of health care, it was meant to have the utilisation of modern sophisticated medical techniques and highly specialised physicians. Prevention of the diseases was emphasised very rarely. More emphasis was on technological advancement than on

prevention. This meant in pumping the resources in the development of advanced drugs and technologies than channelising the funds in preventing the disease.

4.2 RESPONSES OF THE PATIENTS:

Interview schedules were made for the patients containing questions relating to sex, annual income, medical problem faced, number of times of visit to the hospital, history of the treatment process, distance of the hospital from the place of residence, views about the availability of treatment, tests recommended during treatment, sources of funding for the treatment, views about cost of the tests recommended, views about efficiency of the tests recommended, views about efficiency of the tests recommended and lastly their perception about the quality of health care. The responses of the patients elicited from the interviews both in the government and private hospitals are given below.

1.BACKGROUND OF THE PATIENTS:

Interviews from 15 inpatients were collected in each government and private hospital. In case of the government hospital, out of the 15 inpatients those who were interviewed, 10 were males and 5 were females. Whereas in the private hospital, 8 were males and 7 were females. The distribution of the male and female inpatients was so, because in both the hospitals there was an inclination towards the male sex. It appears that in cases of treatment, men come to the hospital in more numbers than women.

Annual income referred to the total income of the family, coming from all the sources. Generally, this was meant to get a view of the income of the family in a year. From the

total number of patients interviewed in the government hospital, 4 inpatients were from families having an income below 60,000; 11 were from families having an income in between 60,000 to 1,20,000; and no cases of annual income above 1,20,000 was found. And from the 15 cases interviewed in the private hospital, no cases were found of having an annual income below 60,000; 3 cases were found of having an annual income in between 60,000 to 1,20,000; and 12 cases were found of having an income above 1,20,000. From this small sample, it can be said that the cases having an annual income above 1,20,000 going to a government hospital are very rare and at the same time in the private hospital, cases having an annual income below 60,000 are rarely found.

From this it can be said that it is the poor sections of the society, who make use of the government hospital than the private. As they do not have resources to bear the expenses of the private hospital, they resort to the government hospital. On the other hand, in general people belonging to higher strata of the society were the ones who mostly went for the private sector.

2.MEDICAL PROBLEMS FACED BY THE PATIENTS:

Generally medical problems like malaria, typhoid, jaundice, tuberculosis, gall bladder stone, appendicitis, pregnancy, fractures in body, heart problems were seen. But in the private hospital, apart from the medical problems seen in the government hospital, many specialised cases, which needed special diagnostic facilities, were seen. Here patients with special problems with fractures in the body, problems in the heart or brain were found. In other words, as the government hospital lacked advanced techniques, the patients resorted to the private hospital.

3. NUMBER OF TIMES OF VISIT TO THE HOSPITAL:

The number of times of visit referred to the total number of times a patient visited the hospital. Generally, it varied from one to three times. This was almost the same for the government and private hospital. As the patients interviewed in the government and private hospital were all inpatients, most of them at first came for consultation in the hospital and then were admitted in the hospital. However, there were cases where in the first visit, after the consultation, the patients were admitted in the hospital.

4.HISTORY OF THE TREATMENT PROCESS:

There was variation of situations in the process of treatment, from patient to patient, in both the government and private hospitals.

In the government hospital, it was seen that some patients came to the hospital directly. There were also some patients, who took consultation in some other government hospital, nearby their place of residence, before coming to this hospital. While there were also some cases where the patient went to a private hospital before coming here. Generally, when the poor patients exhausted all their funds during the treatment in the private hospital, they came down to the government hospital.

Even in the private hospital, some patients came directly to the hospital; while some came after having undergone treatment in some other private hospital; and some were patients, who already had either consultation or treatment in a government hospital. It was seen that, when patients shifted their treatment from a government to a private hospital, quality of treatment was emphasised, provided they had resources at their disposal.

5. DISTANCE OF THE HOSPITAL FROM THE PLACE OF RESIDENCE:

The distance of the hospital from the place of residence was divided into two categories. The first category referred to cases coming from Bhubaneswar itself, while the second category referred to cases outside Bhubaneswar.

In case of the government hospital, 10 patients were within Bhubaneswar itself and 5 were from outside of Bhubaneswar. On the other hand, in the private hospital, 6 patients were within the city of Bhubaneswar and 9 were outside it. It can be inferred from this limited sample that the number of patients coming from outside the city of Bhubaneswar was more in the private hospital than the government hospital. This was because the private hospital i.e. Kalinga hospital was considered to be the biggest, all over Orissa. But the government hospital i.e. Capital hospital was one among the district hospitals in the state.

6. VIEWS ABOUT THE AVAILABILITY OF TREATMENT:

Views of the patients varied, both in the government and private hospital, about the availability of treatment. In one of the cases interviewed in the government hospital, a patient suffering from heart problem replied that after having exhausted all his funds during treatment under a private physician, he resorted to the government hospital. He was an agricultural labour, where annual income was not more than Rs.60,000. He said that he was satisfied with the treatment in the government hospital as the tests did not cost him much and to some extent he was able to afford the treatment.

In the private hospital also a man having undergone cardiac surgery was interviewed. In contrast to the above case, this person shifted his treatment from a government hospital to private hospital. He was a sarpanch of a village. According to him, the quality of health care was much better in the private than the government hospital. He said that anything wrong could have happened, if he would have undergone the surgery in the government hospital.

It was found that the poor are the ones who generally resort to the government hospital. On the other hand, people who have resources at their disposal, go for better quality of health care in the private sector.

7. TESTS RECOMMENDED DURING TREATMENT:

Generally the tests recommended during the treatment were almost similar in the Government hospital to that in the private hospital. The test like laboratory investigations, X-ray, ultrasound, ECG, TMT, colour Doppler, CAT scan were recommended both in the Government and private hospital. Even under those tests there were many specialised tests, which were done in the private hospital. The doctors recommended the patients to go for those tests, when they found the case to be something different. However, there were certain tests, which were only recommended in the private hospital. These were tests like MRI and EEG. This was because these tests were only available in the private hospital.

8.SOURCES OF FUNDING FOR THE TREATMENT:

From patient to patient, there was variation in the sources of funding for treatment, in both the hospitals. There were some cases where the Sector, in which the patient was employed, be it public or private, bore all the expenses. While in other cases, the patients paid from their personal sources like agricultural land or business. In case of young children and unemployed women, it was generally the father and husband who paid the costs of the treatment. This was done either from the medical allowance paid in the sector in which they were employed or through personal sources. Individuals who had adequate funds at their disposal went for the private hospital, whereas those who lacked resources resorted to the government hospital.

9.VIEWS ABOUT COST OF THE TESTS RECOMMENDED:

In both the government and private hospitals, views about cost of the tests recommended varied from each other.

In the government hospital, the patients were of the view that the costs of the tests were low in comparison to the private hospital. In some cases, the patients came to the government hospital after having exhausted all their funds in the private hospital. And here, the cost was something that they could afford.

On the other hand, in the private hospital, the patients did not have any complaint about the cost of the tests recommended. For them, quality of health care was much more important. And they did not mind to pay the price to attain it.

10.VIEWS ABOUT EFFICIENCY OF THE TESTS RECOMMENDED:

Following the cost of the techniques recommended, they were asked about the efficiency of the tests recommended. However, there was variation in the opinion, both in the government and private hospitals.

In the government hospital, the patients were of the view that they did not have any problem with the tests that they underwent. Moreover, they said that even though the cost of the tests was comparatively low to that of the private hospital, as per their knowledge and experience much difference in efficiency was not observed between the tests.

Whereas in the private hospital the patients had nothing to say against the efficiency of the tests recommended. They were of the view that the results of the tests were more accurate and they had full faith on them. For them, the tests were more efficient in the private hospital than the government hospital.

11.PERCEPTION ABOUT THE QUALITY OF HEALTH CARE:

The question about perception of the quality of health care was left open to the patients. Here they gave their views about the treatment process. However, these views varied from patient to patient, both in the government and private hospital. Some of the responses of the patients are narrated below.

A man suffering from heart problem admitted in the government hospital replied about his perception of good quality of health care that adequate medical facilities should be made available to all at minimum costs.

A girl having undergone appendicitis operation in the private hospital was of the view that health care should be such that it should reduce the suffering of the patient than making him/her suffer more.

As a man suffering from brain malaria admitted in the government hospital was not in a position to respond. Therefore, his father sitting beside him was asked to give his response about perception of quality of health care. In relation to the son's condition, the father replied that health care should be for doing well of the individual.

A woman admitted in the private hospital, who had undergone a heart surgery was of the opinion that health care should be good enough to end the miseries of the disease. It should help the patient to regain his/her normal living.

A woman having undergone a tumour operation in the government hospital replied that health care should have a positive effect than going in a negative direction. It should not prolong the sufferings of the patient.

A man admitted in the private hospital, who had undergone a open heart surgery replied about his perception of quality of health care that health care should be more efficient to make the patient to gain his/her normal living again.

From the above views, it can be said that patients in the government hospital emphasised on good quality of health care but at affordable cost. Unlike that of the

government hospital, patients in the private hospital also preferred better quality of health care and were ready to pay the price for it.

4.3 OVERALL ANALYSIS:

Perception of the patients regarding the role of diagnostic techniques in health care varied in the private hospital from that of the government hospital. In the government hospital, the patients said that the cost of the diagnostic techniques available was much more less in comparison to that in the private hospital. Moreover, they were of the view that the efficiency of the techniques was more or less similar to that of the private hospital. On the other hand in the private hospital, the patients considered the availability of the diagnostic techniques to be more efficient than that of the government hospital. At the same time, they were ready to pay any price to for it. The public sector hospitals continue to be source of medical care for the poorer sections of the society. They utilise the government hospital, as here, they can meet the expenses of medical care. But people, who have the paying capacity, go for ensuring better quality of health care at any cost. The perception of the doctors in regard to availability and utilisation of diagnostic techniques, both in Capital and Kalinga hospital were positive. Some doctors in the Kalinga hospital were of the view that technologies play an important role in medical science.

CHAPTER-5

DISCUSSIONS AND CONCLUSIONS

The objective of medical technology is mainly to improve the standard of treatment. The utilisation of technology is considered to bring about marked changes in the process of treatment. But looking from a different angle, it can be said that those individuals, who have money to procure it, make use of the advanced technology. The poor individuals, who are unable to afford those techniques, remain away from all those advancements. The use of technology may sometimes also lead to adverse effects although the users of such technology may not be aware of such effects. The literature review and the findings of the limited exploratory study throw light on the following issues.

The results pointed out that generally the public sector was utilised by the lower sections of the society. This was because a poor man was unable to go for the expensive private hospital. From the limited sample collected in the government hospital, not a single person belonged to the income group above 1,20,000. However, the case was different in that in the private hospital. Here people having an income ranging from 60,000 to above 1,20,000 were found. People who were concerned more about the quality of health care were found in the private hospital. They were ready to pay any cost for better facilities.

Tracing the history of the treatment process, it was found that the cases of patients in the government hospital varied from that of the private. It was seen that the patients who did not have money to afford for the cost of the private hospital resorted to the government hospital. During the study, a few cases were seen where the patients came to the public hospital, when they had exhausted all their funds in the private hospital. These patients came to the government hospital, when they did not have money to bear the expenses of the private hospital. And as the medical treatment in the

government hospital was relatively less expensive to that of the private, these patients came here. But the cases of patients in the private hospital were different from the public hospital. Here the patients thought that they were not able to get the best treatment, they resorted to the private hospital. The patients in this hospital wanted to get better quality of health care and were not bothered about the price that they paid for it.

In regard to the cost and efficiency of the tests recommended, the views of the patients, in both the public and private hospital differed. In the government hospital, the patients were of the opinion that the cost of the tests recommended was comparatively low compared to the private hospital. It was something that they could afford. Their responses about the efficiency of the tests were positive. In other words, they did not have any complaints for the tests available in the hospital. Moreover, they were of the view that there was not much difference in the tests done there as compared to the private hospital. However, the views of the patients in the private hospital stood in contrast to those in the government hospital. They thought that the efficiency of the tests in the private hospital was more than that of government. They considered the results of the tests to be more accurate and reliable. Being from richer sections, they were ready to pay the price in order to avail the best health care.

It was found that the private hospitals had the availability of more medical techniques than the government hospital. In the Capital hospital, there were equipments for laboratory investigations, x-ray, ultrasound, ECG, TMT, colour Doppler, CAT Scan. But in the Kalinga hospital, in addition to all these techniques MRI and EEG was also found. This was due to the reason that the private sector had more investment on medical techniques. The investment in turn yielded money with the recommendation and utilisation of the tests. But the Capital hospital had the government as the main source of funding, though colour Doppler and CAT Scan machine were donated by Orissa health system development and Infosys. The government hospital catered to the needs of the general medical problems. But the Kalinga hospital because of the

availability of advanced technologies like MRI and EEG could also look into more specialized cases.

The perception of the doctors and patients varied in relation to their understanding about quality of health care. In both the government and private hospital, the doctors were very positive about the utilisation of medical techniques. They were of the view that better quality of health care can be provided with the implementation of advanced techniques. And there were a few doctors, who emphasised on preventive medical treatment. Even the perception of the patients in response to the quality of health care differed in the government hospital from that in the private. In the government hospital, the patients emphasised on good quality of health care at affordable costs. But in the private hospital, patients considered that better quality of health care should reduce the sufferings of the patients.

5.1 SOME REFLECTIONS ON REFORMS IN MEDICAL CARE:

There has been an increasing demand for reforms in medical care. It is with the intention of making the medical facilities better. Five major arguments have been put forth to work in this direction. *Firstly*, it is thought that utilisation of advanced medical facilities are used by the physicians for monetary purposes. When a patient comes to the physician, the physician generally recommends going for drugs and technology that may not have utmost utility for the treatment. The drugs that the physician would have recommended may be supplied by some pharmaceutical company, from which s/he would have got a commission. And the technology, on which heavy investments would have been made, may be recommended to the patients to incur profit from the investments. To overcome this, it has been advocated to replace all these with the intention of practicing medical care for public good. In other words, physicians should not be guided by earning profit from the patients but should grant medical care as service to mankind.

Secondly, the expansion of industries for manufacturing drugs and technology; and growth of insurance sector, has led to growing emphasis on profit making. Here the emphasis is to earn money than to benefit the masses. In such a situation the notion of providing better health care facilities to the masses is sidelined. Therefore, it is considered that the interest of the people, which are sidelined, has to be brought into focus by appropriate monitoring mechanisms. There should be stress on providing effective medical care than meeting the moneymaking ventures of the industrial and insurance sector.

Thirdly, the efficiency of the new drugs and technology may at times be doubtful. The implementation of advanced drugs and technology may improve the process of treatment but at the same time may not be free from negative effects. In such a situation, the individuals should not be mere objects on whom the impact of these drugs and technology shall be tested upon. All these have raised the human rights issue of protecting individuals from the adverse effects of drugs and technology. And this has been one of the agenda of the reforms in medical care.

Fourthly, it is generally seen that people belonging to higher echelons of the society are given a priority for health care more than that of people belonging to lower strata of the society. This is only to derive advantages from the individual's wealth and status. An individual who has money with him/her is an advantage for the physician as s/he could pay the charges of the expense medical care. This raises the equity considerations regarding utilization of medical technologies.

Fifthly, it is seen that the investments are more concentrated on development of new drugs and technology. More money is pumped into the process of invention of advanced drugs and technology. In other words, curative services are given more importance than preventive, promotive, and rehabilitative services. As preventive, promotive, and rehabilitative services are considered not to be profitable than curative services, they are generally sidelined and the curative services are given importance.

This trend leads to differences in the way health services are organized in the society, especially between the public and private sectors.

It can be said that the criticisms are not only against over-medicalization i.e. over-prescribing of sophisticated drugs and technologies. It can also be said that the advantages of science and technology have been more in promoting the interest of some than all sections of the society. The case of medical technology is such an example, which reflects the hierarchy in the society.

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INTERVIEW SCHEDULE FOR THE DOCTORS

1. Age:

2. Sex:

3. Specialisation:

4. What are the diagnostic techniques available in the hospital?

a. X-ray

b. Ultrasound

c. TMT (Treadmill Test)

d. Colour Doppler

e. ECG (Electronic cardiogram)

f. CAT (Computed Auxillary Tomography)

g. MRI (Magnetic Resonance Imaging)

h. EEG (Electro Encephalography)

5. If the following diagnostic techniques are available, what are the charges to go for them?

6. Is there any provision to exempt the poor for using the diagnostic techniques?

7. What were the sources of funding for making the techniques available in the hospital?

8. What are the cases wherein patients are recommended to go for the diagnostic techniques?

9. Generally what are the problems with such techniques?

10. What is your perception about quality of health care?

INTERVIEW SCHEDULE FOR THE PATIENTS

1. Age:

2. Sex:

3. Caste:

4. Marital Status: Married/Unmarried

5. Employment Status: Employed/Unemployed

6. Name of the occupation (if employed)

7. Annual income from the occupation:

8. Who is supporting you? (if unemployed)

9. What is the medical problem faced by you?

10. How many times have you visited this hospital?

11. Did you consult any other hospital before coming to this hospital?

12. How far is this hospital from your place of residence?

13. What are your views about the availability of treatment in this hospital?

14. Were you recommended to go for any tests during your medical treatment?

15. If yes, name it:

16. How much did you pay for availing the use of the tests?

17. What was the source of funding for the tests?

18. What are your views about the cost of the tests recommended?

19. What do you think about the efficiency of the tests recommended?

20. What is your perception about quality of health care?

