

Exploring Diagnosis beyond Clinical Encounter in Cosmopolitan Medicine

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DECLARATION

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This is to certify that the dissertation titled "**EXPLORING DIAGNOSIS BEYOND CLINICAL ENCOUNTER IN COSMOPOLITAN MEDICINE**" submitted by me under the guidance of Prof. Ramila Bisht in partial fulfilment for the award of the degree of **MASTER OF PHILOSOPHY** is my original work and has not been previously submitted for any other degree of this University or any other University.

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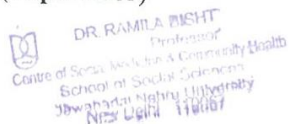
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Introduction

In the fifth edition of the Diagnostic and Statistical Manual (DSM-V) which was published in 2013, a radical change was introduced. It allowed public for first time to make comments and suggestions. Some suggestions were taken up and some turned down in an already decided official compendium of American Psychiatric Association. It was considered as a democratic gesture to make official classification more inclusive (American Psychiatric Association 2013).

Moreover, it extended collaboration to International Classification of Diseases System (ICD-10) that reflected in an updated manual published in September 2016. Both ICD-10 and DSM-V much more elaborated and larger than the previous editions is a product of the collaboration between various individuals and institutions to provide support to those who are concerned with caregiving. Classificatory system or classification is a way to see the world at a point in time. It organises a family of diseases and health-related issues and offers guidelines to discern diagnoses, which can be a principal or secondary/ supplementary to conjure up the clinical picture of condition.

Further, the new term “Disorder” appeared in ICD-10 to replace contentious terms such as disease and illness and new disorders like pathological gambling, fire-setting and stealing etc. made entry in it (World Health Organisation 2016). Similarly, binge-eating, nonorganic sleep disorders have been included in DSM-V and elaborated in ICD-10. Disorders of gender identity have been differentiated from disorders of sexual preferences and homosexuality no longer exists as a disorder. DSM-III eliminated it itself as a mental disorder (American Psychiatric Association, 1987). Be it for a group of disorders or individual disorder, diagnostic guidelines provided enable evaluation of the disorders in terms of clinical features (number and balance of symptoms) given to deliver confident diagnosis. Both, ICD or DSM, offer descriptive explanation embedded in behavioural or clinically manifested features rather than on broad aetiology.

Therefore, the question arises how diagnostic systems like ICD and DSM come into existence and how certain diagnostic categories emerge and disappear? Similarly, how

the social and political forces shape diagnosis and contestation of diagnosis within and outside medicine and how diagnostic categories are applied to patients?

All these questions imply towards a construct “diagnosis” (language of medicine) that informs the notion of health and disease. Diagnosis is central to practice of medicine and it is diagnosis that differentiates medicine from other institutions. Diagnosis as a product of social, economic and political forces, in turn, governs social and clinical life by structuring and articulating a dialogue. The diagnosis has a power to confer social and economic benefits as it enables clinical attention and allows person to be sick (Jutel 2009, p. 279). Ian Hacking (1997, cited in Pickersgill 2013, p. 521) rightly calls diagnosis as an apparatus through which people come to understand what is a normal and pathological experience, so as to relate to substances and practices and, how to negotiate situations fraught with implications. Diagnosis as an authority enables or disables certain forces and knots together social, political, semiotic and material realms to construct itself and shape individuals and related institutions. It's this constructionist approach to diagnosis, particularly in case of contested categories, which offers a new vantage point to understand how much of the conditions of life are being brought within the realm of medical purview.

One could argue that it's the Big pharmacy, what Nettleton (2009) called as engines of diagnoses, that are yielding life conditions to economic forces. But one needs to do away with this sort of conspiracy theory instead explicate the complex set of agents that shape the diagnosis and consequently (de)medicalises (Jutel 2011, p.10). Thus, diagnosis can be conceptualised at different levels, like at clinical level it is a space where space (social), patient and doctor configure each other (corporeality). For clinical encounter to take place, corporal work is done on the body of a patient, that is, body is prepared and space created to enable doctor to examine the body and collect information to deliver diagnosis that sees pathology and health in the molecular and genetic transactions. However, at the macro level diagnosis is an outcome of technology, political, social and economic forces that could be substantiated by the existence of international diagnostic systems.

Diagnosis at a clinical level is a process to give coherence to the signs and symptoms of patient's narrative according to the classification or nosology. The clinical encounter, examination, trial and error etc., produce useful knowledge which could be employed

for prognosis. Therefore, diagnosis could offer a vantage point to understand the clinical production of knowledge or how disease, illness and body are rendered intelligible within the clinical settings. Diagnostic process tries to unravel the lifeworld created in a diagnostic space where meanings are created and negotiated and actors understand interact with each other. No doubt, new technologies like imaging, molecular tests etc. largely mediate understanding of pathos, but a great deal of diagnostic space still has corporeal interaction.

Bodies, gaze and verbal communication of both patient and doctor are important to the diagnosis which is a mutually constitutive process between bodies, agents and body modes. It is because diagnostic space activates the knowledge embodied by the doctor, essential to deliver diagnosis. Moreover, it is the materially and semiotically constituted space that makes diagnostic space productive and translates narrative into formal diagnosis. Diagnosis involves the bodies that are prepared or in simple words bodies are produced in a specific way to have a successful diagnosis which other bodies are insensitive to (Gardener and Williams 2015, p. 770). Embodied diagnostic knowledge is important for diagnosis which is configured by different tools and agency in the diagnostic assemblage. That is why, embodiment which is at the centre of diagnosis offers an explanation why technology heavily mediates the diagnosis and unpacks the authority and power associated with the diagnosis.

Though, diagnosis is an interaction between doctor and patient where one comes with knowledge and other with experience could be moment of contestation, pertinent in cases of rare and asymptomatic illnesses. The bodies of patient and doctor in a clinical encounter are distinct as both are created and extracted to embody knowledge and experience respectively. The body which is key to diagnosis particularly clinicians body constructed via training and experience could be bereft of certain sensitive categories like gender etc as is the case with thyroid cancer considered as a female disease despite male gender has high mortality. Further, bodies in the clinical encounter, which is not an encountered of equals, particularly patient-body can have different socioeconomic and cultural positions which could result in underrepresentation (Gardener and Williams 2015, p. 773).

However, it is important to look at the historical dimension of medicine to critically examine the present configuration of diagnosis. Medical sociology, where a substantial

amount of literature about origin and development of diagnosis, enunciated from a western vantage point particularly the US and the UK, produces a historical account in a form where western history is unwittingly or wittingly authorised as the 'history' and other countries are positioned as coming late (Annandale 2014, p. 15). This historical account of collaboration between patronising medicine and sociology's offering of theoretical backing, in the form of structural functionalism, to secure respectable academic space for medical sociology, reflects the dominance of positivist paradigm at that time.

The theoretical backing of structural functionalism and medicine sponsored research in medical sociology couldn't sustain so long and by 60's and 70's, fractures started to develop in such discourse and need of shift from bio-medical model to social approach was deeply felt (Annandale 2014, p. 18). Robert Strauss (1957, cited in Annandale 2014, p. 18) draws a heuristic distinction between sociology of medicine and sociology in medicine. The play of discipline of sociology in the arms of medicine, where sociologist acted and thought like a physician and adopted medico-centrism as an approach, such as non-compliance of physician's instruction as a reason of failure, rather than medicine as an institution of behaviour system, was started to be critically reflected upon. The implicit value assimilation in sociological explanations that abound medical sociology in 60's and 70's was seen to be problematic and it was demanded that sociology should be sceptical of medicine, at least, and develop an alternative to biomedical model (Murcott 1977, p. 150).

The changes in the medicine as an institution are however, in relation to the changes in the overarching epistemology (paradigm shifts in physical science) as reflected in the trajectory of medical sociology. It highlights the value-orientation within the medical knowledge. To put it in Marxian term, medicine reproduces the dominant ideas of society (Bloom 2002, p. 97). Therefore, one could clearly see the reflection of a paradigm shift, universal to particular/contingent, in medical sociology too, as both medicine and sociology underwent change is underlying warps and wefts.

The deconstruction of the course of cosmopolitan medicine, which promised to conquer illnesses and establish healthy citadel, one could map the changing frameworks that framed relationship between signs and symptoms or what Jewson (1976) calls as medical cosmologies. Medical cosmologies as modes of social interaction explain the

essence of medical discourse as whole; provide principles, assumptions and shape perception and practice of practitioners (Jewson 1976, pp. 225-229). He sees the trajectory of biomedicine from bedside medicine, where patient-oriented narratives had dominance and person treated more than just an organic being, to hospital medicine and finally to laboratory medicine where disease metamorphosed into physio-chemical changes. Jewson (1976) sees the disappearance of sick-man from the cosmologies over the formative period of biomedicine and subsequent surrender of narrative which leads to conceding of control over the production of medical knowledge.

The cosmopolitan model as heuristic model framed to critique medical practices during 60's and 70's premised on reductionism, specific aetiology and scientific neutrality could be summed up as the spirit of cosmopolitan medicine as Scheper-Hughes and Lock (1987), Rene Dubos and Nurok (n.d., cited in Annandale 2014, p. 18) explicate in their recounts of patients. The shift from the wholeness of person to specificities where cause and effect model, explicate the diagnosis configured on filtered clinical signs, could be located within the paradigm of Newtonian science that dominated over time and space.

Thus, epistemic shifts that changed medicine both in substance and form in response to changing notion of body and life, reflect the changes in social arrangements as technological innovations and biomedical knowledge intervene health and illness. It co-produced new social forms, Or as Clarke (2003) puts it, the inside-out transformation of biomedicine resulted in historical shift from medicalization to biomedicalization co-creating new social forms constructed through and around new identities. What Clarke and colleagues (2003) are proposing is that although technological innovation is at the heart of medicalization but to support technological determinism is to ignore critical analysis of social, cultural and organisational forms co-created simultaneously (Clarke et al. 2003, p. 170).

The birth of the clinical gaze at the turn of the 18th century transformed into a molecular gaze by the 21st century to produce objective image of disease and health. It purged disease, all of its social character and contingency on social interaction and space. Consequently, health and disease began to be interpreted in inorganic and molecular terms to circumscribe disease within local physio-chemical and molecular and genetic processes or malfunctioning rather than searching for its social processes. It is this

reductionism that offers stability and cause-effect equation prerequisite to cosmopolitan model (Annandale 2014, p. 18).

Friedson in his seminal work, *Profession of Medicine*, declared that medical sociology should do away with terminology and concepts of illness and health adopted in the medico-centric approach and shed light on the social reality of human life, although, not independent of other levels of reality (Friedson 1970, p. 40). It's this disembodied and biomedical approach that medical sociology abandoned and shifted to sociology of health and illness which examines health and disease on the thesis of social interaction that could never be reduced to biology or physiology (Annandale 2014, p. 19).

Jutel (2015) while commenting on different sociologies like sociology of health, medicine etc. urges sociologists to explicate the nature of sociology or what its function should be once any object of study is chosen. Here she takes a cue from Bourdieu's (2013, cited in Jutel 2015, pp.841-845) description of the sociology of sport to throw light on the concepts, processes and practices, otherwise remain unrecognised or obscure, that have impact on general issues. Further, she argues that sociology of a thing is not to describe thing in itself but the relations that it clarifies. In the similar vein to have a sociology of health and medicine is to locate it in spatial terms and how it is linked to other spaces or, in other words, to study concepts, practices and processes that have an impact on notion health, illness and disease (Jutel 2015, pp. 841-845).

To do sociology, as Jutel (2015) argues, is to describe the relationships and links of discrete practice with the universe of practices, that is, sociology of thing should describe object as a way of deciphering the broader context. In this sense, diagnosis is not simply an outcome of clinical encounter, notion of health and disease or medical practice. Diagnosis is a framework within which medicine works and more importantly it gives form to illness, health and disease (Jutel 2015, p. 846).

Sociology of diagnosis, as a subfield of medical sociology, provides a different vantage point or insight to understand health, disease and illness as number of processes related to diagnosis remain insufficiently accounted in medical sociology. Diagnosis is a classificatory tool of medicine that takes place at the interface of disease-illness, doctor-patient, complaint and explanation. It's the diagnosis that provides the framework within which medicine operates, espousing values of science and establishing authority

of medicine and doctor(Jutel 2009, p. 278). However, the diagnosis hasn't remained confined to doctor-patient encounter. It's topography has extended beyond clinic. Further, medical encounters have not just remained the frames, as Goffman(1974, cited in Strauss, 1978, p. 235) puts it, where individuals are reduced to passive beings but evolved into negotiated meaning making interactions. This, negotiated consensus or meaning-making interactions that takes place during diagnosis prompts to critically engage with the social reality of health and illness. Diagnosis, an embodiment of social, cultural and political forces, from sociological perspective demands to unravel the sequence of talk where the play of interests come into the discussion and different forces set priorities and goals.

Blaxter (1978) declared that diagnosis is central to the medicine and she explains how diagnosis and vanishing patient are connected. Diagnosis as she says acts as a prism, absorbing and reflecting issues central to the experience, the practice of medicine and healthcare. Diagnosis while giving coherence to symptoms and legitimacy to an illness enables an access to sick role and resources. Subsequently, it lays the foundation of medical authority. However, as the social, economic and political forces changed with neoliberalism, marketization and globalisation, diagnosis (framed, contested and enacted) become porous to these macro forces.

The blurring of disease categories and collapse of concepts like disease and non-disease with the advancement of genetics and molecular technologies has yielded new spaces. There has emerged pre-disease status and potential diseases and new risk factors adding further fluidity and contingency to diagnosis both as process and category. Diagnostic space ever expanding and amenable to lay influence in terms of knowledge, expectations and experience opens space for patient-oriented diagnoses which some call as the democratisation of diagnosis as elucidated by DSM-V, where public opinion was sought on diagnostic categories, although limited in scope. Diagnosis can lead to temporal anomie or biographical disruption, loss of self and symbolic transformation etc. It's the diagnosis which can provide insight into how people make temporal adjustments and how it impacts lives of people.

Diagnosis having a character to organise, name and provide treatment and future trajectory (prognosis) possesses an important public health value. Thus, diagnosis determines an existence of a disease and shapes response from individual to the state.

It is this reason that some categories like homosexuality and hysteria through social movements were eliminated and some other like Binge eating, shyness etc. established. However, diagnosis as it mobilises resources could result into medicalization of life processes and renders conditions of possibility for exploitation to bio-capital. Though, diagnosis could be demedicalising and destigmatising force too.

Diagnosis both as a process and category, being mutually constitutive, defines health realities in tangible ways and cements ontology of a disease. Moreover, diagnosis as it legitimises some voices, excludes the other that is, it privileges certain voices and silences others, which goes against the spirit of public health. Further, as the diagnosis has expanded out of clinical encounter into realms of laboratories, where molecular and genetic diagnosis supersedes the doctor's judgement as demonstrated by Bourret and colleges (2005) to digital spaces, has realigned the locus of the medical encounter.

The laboratory findings have become the truth and produced the commercial-clinical-technological triad what Bourret (2011) call as post-genomic medicine. The confirmatory tests have become essential to clinical judgement and consequently, a lot of resources are divested into a state-of-the-art. It became possible because of technological diffusion and push towards consumer empowerment, disease awareness and self-diagnosis as a way to scrutinise body and mind that has expanded diagnosis out of clinical space onto the virtual space. Consequently, health and disease have become individual responsibility where health is a commodity and spirit of public health labelled irrelevant.

It's this redefining of the relationship between diagnosis and treatment in ever-expanding diagnostic space where biological and clinical activities are realigned in new ways and whether a disease recurs or not and how treatment will respond in the context of prognosis could remould public health substantially. In more profound ways pharmaceutical and biotechnology industries are laying foundations of medicalization and pharamecuticalsiation processes and in turn shaping public health. Barker (2005) in her analysis of fibromyalgia explains what she calls as pharmaceutical determinism where through ICT, its existence and authenticity is claimed.

However, Diagnosis legitimises, stigmatises or even restricts access and is always politically charged act. Once diagnosis is acknowledged it becomes tangible and compels the state to recognise it. Subsequently, compensation is demanded as

elucidated by Catherine Trundle (2011) in an ethnography of nuclear test veterans. The reality of suffering can be acknowledged or denied contingent to the diagnostic label. Nonetheless, diagnosis can go beyond individual stigma and entitlement by designating collective identity like obesity where citizens are treated as a liability and undeserving. Thus diagnosis as an analytical tool could offer an insight into problematics in illness experience and healthcare practice by deconstructing what goes into creating the social content of diagnosis.

In brief, diagnosis at scientific level shifts as the concepts central to life sciences, technology and other related sciences change. However at the social level, it's the intertwined relation of pharmaceutical industries, lay people and media, social movements besides scientific advancements that shape diagnosis and set off consequences for health of people in particular and public health in general. Thus, diagnosis shapes what society considers as normal and pathological. More importantly, it convinces people to believe in it. It has a capability to give voice to illness and mobilise resources at individual level or collective level. In this sense diagnosis is a performative act. Moreover, it is the diagnosis that designates medicine different from other institutions and extends legitimacy to doctor as well as to medicine as an institution. Diagnosis could come as a relief or it can distort the sense of meaning severely and render an individual hopeless. Further, it could appropriate the embodied form of health and medicalise it only to be reproduced as a consumer good. Diagnosis which is inextricably linked to technology profoundly shapes the experience of health and illness and more so, the understanding of body. Consequently, doctor-patient relationship and social organisation of medicine structure in response to diagnostic movement

Methodology

Conceptualisation of the Research Problem

Diagnosis is the powerful classificatory tool of medicine embedded in social framing. That is, diagnosis is an outcome (category) and process that entails range of actors be it social, historical, cultural or science itself. It is this concept of diagnosis that informs the conceptualisation of this dissertation. Moreover, as the changing conception of health and disease is related to changing concepts of diagnosis, construct of “diagnosis

as a way of knowing” ,that is, diagnosis as an epistemology is used to understand theoretical shifts in science.

Bruno Latour's (1999) Actor-network theory is the theoretical framework that informs the conceptualisation of this dissertation. It casts diagnosis as collective activity which is realised in relationships that exists among hetegenous elements that comprise it. Actor depicts any agency be it conceptual, textual or technical who associate with each other and form network. It's the network in turn that gives them essence (purpose) as each actant is indetreminate in itself. Diagnosis is an outcome of network that is established among actors who come together freely and turn beliefs into established facts and in turn produce agency. It's the intersest of various actors who come together to form a network and produce a desired effect, that is diagnosis. Thus, technoscience defines a disease category and through media everyone is educated about it and doctors are taught to diagnose and instruments are manufactured to mediate doctor. Civil society comes together and through epidemiological surveys its existence is established and in turn public health measures are taken. Pharmaceutical companies come up with medicines to restore the normal state. Thus, it is the network of actors that constitutes diagnosis or contests it.

Diagnosis as the language of medicine has its scientific history and in an explicit reference to Canguilhem's (1991) work, concepts form the vital components of diagnosis as a scientific practice. Concepts are the basic units of episteme and are intricately linked to technological practices that cannot be reduced to mere instruments (Schmidgen 2014, pp. 62-67). It is this link with technology that concepts are able to produce perceptions. Thus, concepts have a life of their own and give existence to things that it explains. That is, concepts in diagnosis make visible, produce realities of health and disease and more importantly perceptions. It is the embedded concepts in diagnosis that guide us over the landscape of life. However, as reflected in the literature the relationship between diagnosis and concept remind poorly drawn out. So, it is important to understand how the changing concepts in life and other sciences affect the notion of health and disease and establish diagnosis. Further, as technology is inextricably linked to diagnosis and (if) new diagnostic technologies measure and visualise the diseased body in new ways then, how technology affects the ways in which the disease is understood, treated and managed by patients and healthcare professionals becomes essential to delineate. More specifically, one could ask whether

novel technologies and changing diagnostic categories have implications for the doctor-patient relationship and clinical encounter as a space or not. And do they affect the ways in which patients understand themselves or how other groups in society regards them. How do novel technologies affect diagnostic practices? What happens to the elements of a diagnosis like a gaze, language and sensory capacities as diagnostic space extends?

Apart from these theoretical issues, in practice diagnosis could open space for further operations but does diagnosis always leads directly to intervention, and if so, how is uncertainty managed in practice constitutes another concern of dissertation. Further, as uncertainty is embedded within diagnose how medicine makes sense of asymptomatic illness or how its symptoms and signs are given coherence to sketch clinical picture and initiate intervention is another question to search. Lastly, the study seeks to know how diagnosis in the context of the pharmaceutical-biotechnology industrial complex medicalise life conditions and influence public health.

Broad Objective

The objective of this study is to understand the dynamic nature and power of diagnosis, as category and process, in cosmopolitan medicine. More so, to understand the relation of diagnosis with public health.

Specific objectives of the dissertation are:

1. To understand contemporary diagnosis as a reflection of changing nature of medicine.
2. To explore the social impact of diagnosis which recognises certain voices and simultaneously silences other voices.
3. To understand the changing nature and equation between the diagnosis, technology, disease and health.
4. To map relationship of diagnosis, authenticated at the clinical encounter and shaped by various forces at micro, meso and macro level, in writing the public health.

Research design

The study is an exploratory research, primarily based on review of literature on diagnosis. Though, literature on diagnosis is largely dispersed across various areas of

scholarship like medicalisation, disease theory, illness narrative and history of medicine, the study attempts to thread in literature to offer a new vantage point, using construct of diagnosis, to understand practice of medicine in particular and public health in general.

To review literature, relevant theoretical and descriptive research papers were retrieved from online documentation retrieval systems like Google scholar, science direct and from other relevant websites. Certain keywords like diagnosis, sociology, technology, health, illness and disease were used to carry Boolean search. Apart from this, classical texts on themes of history of life sciences, medicine, disease and technology were reviewed also. Thorough scanning of the reference list of relevant articles and bibliography of the suggested books was followed to collect relevant literature. The theoretical and descriptive literature was reviewed using a construct of diagnosis that serves range of social functions and in itself constructed by various social, economic and political forces. Different theoretical concepts related to health and disease that emerged were described and analysed to seek linkages with diagnosis, which is a cornerstone to understanding of health, illness and disease.

In seeking answers to these questions, this dissertation is divided into four chapters followed by discussion and concluding remarks. The dissertation proceeds with conceptual changes in life sciences and its link with diagnosis of normal and pathological in the first chapter. It also speaks about concept that shapes diagnosis and experience of life. It is about biological concepts that define the rise of cosmopolitan medicine.

The next chapter attempts to understand the changing diagnosis and its consequences on doctor-patient relationship. It describes the changing notion of doctor, patient and clinical encounter and consequently the shaping of diagnosis beyond the corporeal encounter of doctor and patient. It is about the changing clinical spaces and consequences for patient, concept health and disease.

Third chapter deals with political economy of diagnosis. It traces the embeddedness of diagnosis in the different theoretical frameworks that define the practice of cosmopolitan medicine. The role of pharmaceutical-industrial complex in shaping diagnosis is highlighted in particular.

The fourth chapter explores the diagnostic landscape in India. It describes the engagement of Indian scholarship with diagnosis. Further, it explains the gaps in literature, given the significant relevance of sociology of diagnosis in understanding everyday experience of health and illness.

And the last part, discussion puts down the themes traced over the expanse of four chapters and discusses the scope and need of further studies in sociology of diagnosis.

Chapter one

Informed Gaze¹ and Medical Diagnosis: A Historical Review of Concepts in Cosmopolitan Medicine

Introduction

Diagnosis, etymologically², means ‘to know’ and one could know or experience any phenomena, in a Husserlian sense³ (Smith 2003, para. 1), through the faculty of senses. It is an act of giving coherence to the patient’s narrative like a painter who cautiously puts fine details to have an exhaustive picture. In this way, diagnosis is primarily an activity carried through senses and knowledge. In antiquity or pre-technology-mediated clinical encounter, the diagnosis would be guided by the meticulous gaze and sense of touch aided by the experience of the doctor.

However, what starts at the sight of the eye, corroborated by other senses or in cosmopolitan medicine by the sophisticated instruments and what a doctor knows and believes, is followed by the words as John Berger (1972) puts it “seeing comes before words”. Thus, diagnosis is a verbal and transformative act that reproduces the illness narrative of a patient as a concrete medical fact, termed as disorder, disease or syndrome. It differentiates the understanding of ailment from pre-diagnosis and draws a virtual boundary between before and after diagnosis.

It assembles bits of information through tests and other works to produce a clearer picture and in turn shapes an individual experience, that is, at the moment of diagnosis I embody the disorder and possess an identity (Jutel 2011, p. 8). For example, a person

¹ The outside event like disease of a patient is a process in possession of meanings beyond appearance. A simple seeing would be mechanical stimuli which concerns the retina of eye or just the play of colours. However, the deeper meanings are accessible to two other capacities-looking and Gaze. Looking is simply a regard which is proactive and act of choice whereas Gaze is more than seeing, it’s a touch at a distance- a healing touch.

² Merriam Webster traces the origin of the word Diagnosis from Greek *diagignōskein* to distinguish, from *dia-* + *gignōskein* to know and defines diagnosis as an act or art of identifying disease from its signs and symptoms.

³ For Husserl, phenomenon is a lived experience presented to us through our senses rather. And it’s these experiences that make utterances possible. Intentionality that is central to his conception is relevant to diagnosis too.

diagnosed with diabetes, becomes a diabetic. The pursuit of diagnosis takes place at the interface of where clinical gaze reads symptoms as signs and rearticulates an illness as a disease to make things more transparent and explained. However, it is not always the case, as there are conditions where doctor and patient are in discord for example, asymptomatic illness.

The critical feature of diagnosis is to organize illness and provide a roadmap of a disease, though not the way out, treatment options and possible outcome. Thus, one could say diagnosis sorts out what is bothering patient but not what could be the outcome. It represents what society as a collective frames as normal and pathological (Jutel 2011, p. 12). Once delivered diagnosis legitimizes an illness and gives access to medical resources and the social role of sickness, that is, permission to be ill (Parsons, 1951, p. 452). More importantly, it is the diagnosis that confers authority to doctor and distinguishes medical profession from others (Freidson 1970, p. 12).

Apart from the label of the stigma diagnosis could attach to an ailing person, diagnostic act reintegrates an ill person into society, though with a different role. Given the complexities, social implications and capacity of diagnosis, it emerges as the highly contested site. It is a relational process too, that is, two streams lay and medical of explanations, understandings, beliefs and values confront each other. Thus, there is a misfit embedded within diagnosis, and it results in shifting of patients from one system of medicine to another to seek satisfactory explanations and therapeutics.

Nonetheless, diagnosis as a voice of medicine and central to the practice of medicine could provide a vantage point to understand the processes that shape the notions of disease, illness and health apart from the forces that shape its epistemology and practice. Among various factors like social, economic and political that inform the diagnosis, diagnosis is schematized around clinical gaze to have a sense of more profound levels of invisible and it is the *raison d'être* that the gaze is given privilege over the words. In the words of Peter Berger (1972), the act of seeing deciphers and brings within reach the thing that is being looked upon, nonetheless, at a distance. Thus, clinical gaze penetrates beyond surface illusions to surface hidden truth that remains invisible and dark to universal regard.

The doctor-patient encounter, which is a placeholder of dialogue, verbalizes what the doctor sees and what patient has come up with as an embodiment only to come out with

a diagnosis. As Foucault (1975) mentions, to see is to perceive, and at the end of the 18th century, seeing was to expose all the inner dark spaces to light anterior to gaze. It is the sovereign, empirical gaze that turns the solidity, density, and opacity of things into light while slowly passing over and into the things (Foucault 1975, p. xiii). However, as Berger (1972) puts it succinctly that image is an embodiment of a way of seeing, similarly diagnosis involves an informed gazing to know what is ailing a patient.

The truth of the things, diseases, surfaces if gaze rests on them silently, that is, despises all theories and imaginations and enables the clinician to listen (Foucault 1975, p.132). It means diagnosis is guided by the purity of gaze that demands silence of all barriers erected to reason by theories and to senses by imagination (Foucault 1975, p. 133). Moreover, as the medical gaze endowed with the ability to decide and intervene reorganizes itself, the conception of disease subsequently changes (Foucault 1975, pp. 89-90). Thus, at the more profound level, it is the gaze that constitutes the concept of disease because it could hear the language as it patiently passes over the things (Foucault 1975, p. 108). In Foucault's words, clinical gaze could only be fulfilled in its truth, to make invisible visible, in the silence of all language, spoken or not, and the all the theories and imaginations that act as an obstacle in its unraveling. It is this double silence that enables gaze to listen to the language of the things (Foucault 1975, p.108).

However, it is the labour of language that transforms symptom into a sign and transforms illness of a patient into disease and individual case to conceptual one. Moreover, to see is to express and what is visible, is because it could be expressed. Thus, the clinical thought endeavors to describe (speak) as the gaze scans the bodies and integrate it spontaneously into knowledge. The well-articulated language, as Foucault (1975) mentions, is the ideal of the scientific thought that speaks and teaches the truth. Hence, diagnosis in clinical medicine is not merely to surface inaccessible, but it means giving a speech to what everyone sees without seeing (Foucault 1975, p.114). Alternatively, diagnosis as category acts as a tool to identify (process) disease.

Further, the gaze has a character to discover the hidden truth. Although gaze composes and decomposes the notions as it observes new modalities to seek the truth, it is the composition or configuration of a disease that becomes its truth. A diagnosis which is the outcome of this intimate relationship between seeing and saying could offer

analytical understanding into this changing relationship across the historical journey of medicine.

The changes in the scientific discourse, the dominant paradigm within epistemology, shape the conception of disease. It's argued here that as the concepts associated with paradigm are replaced owing to the gaze⁴, the notions of disease are consequently configured on the new relationship established. However, it must be stated here that disease regime⁵, as Klawiter (2004) says, is a historical, cultural and spatial practice associated with diagnosis and goes beyond traditional practices and individual physiology (Klawiter 2004, p. 32). In this chapter, the relation of the model, composed of concepts, and diagnosis of disease would be delineated to understand the evolving contours of diagnosis. The underlying point here is that construct of "diagnosis," that is, diagnosis as an epistemology is designed to illustrate the link of gaze and speech, a configuration of a disease. Diagnosis as a way of knowing could give an analytical insight into the history of diagnostic categories evolved with the changing paradigms in medicine. Thus, in the subsequent sections changing conceptions of disease would be traced in the natural history of biology since the nineteenth century and associated concepts. Allen's work along with the Birth of the Clinic and Canguilhem's classical text The Normal and The Pathological would be extensively referred to given their classical nature.

History of life science, Birth of concepts⁶ and the pathological anatomy

No science grows up in a vacuum but emerges out of a historical and social context. The interplay of people, ideas, philosophy, and influence of different sciences on each other shape the development of a particular science. History of sciences is usually interpreted from the internal and external perspective (Allen 1976, p. xii). Here, only internal history of science, that is, intellectual developments within science, is focused upon to account for how specific ideas were originated and shaped the discourse of normal and pathological.

⁴ It's an inference drawn from the seminal work of Michel Foucault, the birth of the clinic.

⁵ Disease regime is concept that understands the construction of disease is an outcome of institutionalised practices, dominant discourse, social script and technology. thus, disease regime changes as its constituents change and are not totalising.

⁶ Narrative is highly selective and what seems to be sequential or linear progress is immensely complicated. What is tried to convey here is that conclusion must not be simple and there is need to unpack politics of practice. For theoretical purpose, such exposition has been omitted.

Since the 17th century, the primary concern of life sciences was classification to understand the essence of life. Search for humor and forces of nature that animate the heterogeneity of life. Metaphysics informed the conceptual framework of prescientific understanding. In the later time, the concern was reoriented to functions as it was thought that to understand the aggregate effect, which could be life itself, is to understand essence. Physiology became the mode of knowing of organic functions through observation and experiment.

Laws and change that underlie the perpetual modification of things became explanation and attention of physiology, and it became synonymous with biology in the 19th century (Coleman 1971, p. 12). One group of biologists-anatomists, histologists and embryologists asserted the importance of form while as the second group of biologists emphasized the vital processes that sustain organic functions. The third group of biologists in the 19th century was evolutionists whose concern was to understand the relationship between past and present. They wanted to define the mechanisms which controlled the transformation of organisms.

Thus, form, function, and transformation as concepts offer an unusual vantage point to understand the developments not only in biology but in medicine too which is since 19th century largely shifting towards science (Coleman 1971, p. 15). This shift from abstract essence to the reduction of life and organisms to particular patterns of the matter was critical. The revolt from the morphology at the turn of the century realigned medical, and life sciences and laboratory science became a significant source of explanation. Life Sciences since 17th century changed its complexions, shifted from the essence of life expressed through classification, to the phenomena of life itself, functions, but the renewed form of vitalism remained the search principle. Functional doctrine believed in search of the active state of life, that is, to determine and control the ceaseless flux that underlies the purpose of life (Coleman 1971, p. 21). In the late 17th and early 18th century, human anatomists emphasized description and investigation of organs and systems of organs. The topographical investigation of the body constituted body as integrated activities of organs, and it is these organs which are physical basis of bodily functions. Teleological conception informed such a doctrine as each organ was designated a necessary function.

However, organ system doctrine concerned with normal functioning could not offer an explanation to query that if organs who manifest similar traits whether in health or disease, must share then some universal physical and functional bases. Further, a systematic study of a pathological form also necessitated a shift from organ level and in turn revolutionized the anatomy. By combing the physical examination of a corpse (dissection) with the clinical description of patient's ailment, symptoms were given an accurate anatomical reference. It was this moment of superimposition that gave pathology a physical localization and physiology. Tissue as an irreducible structure is a site to understand properties of life as Xavier Bichat (1800, cited in Coleman 1971, p.25)explained became a unit of anatomy. He identified twenty-one tissues that have distinctive vital properties(Coleman 1971, p.25). It was the tissue doctrine that explained normal and pathological are analogous phenomena to which organ doctrine could not account.

Anatomy and physiology merged and physical localization of pathological became the norm of clinical description. The dual ontology of health and disease faded into the quantitative variation of physiology. After mid 18th cell theory, in response to getting rid of vitalistic tendencies and metaphysical excesses, replaced both the doctrines and established cell as the site of metabolism with physiological capacities (Coleman 1971, p. 28). It revolutionized anatomy and medicine thoroughly as cell became a foundation of large organic structures and the origin of essential functions necessary to life.

With the advent of microscope and disciplines of bacteriology etc. cell theory gradually transformed the structural view of an organism to a functional interpretation of those structures. Discovery of sub-cellular structures and the notion of inheritance further consolidated cell theory doctrine and correlatively, physiology advanced from the examination of general metabolic activity of the whole organism to that of its vital elements (Coleman 1971, p. 30).

Thus, cell became a new anatomical element like organ and tissue earlier. Virchow argued that cell theory was critical to the development of pathological anatomy because localized anatomical disturbances became the seat of disease instead the general processes (Coleman 1971 p. 32). In short, search for the location of disease advanced from organ to tissue to finally cell. It spawned a whole new thesis of health and disease. Physiological definition of disease became possible as there is no qualitative but

quantitative variation between health and disease. Physiological became synonymous with normal and pathology with its physiology manifested in the form of disturbed functional response at the tissue level (Coleman 1971, p. 80). However, demonstration of the cell as critical anatomo-physiological unit remained an outstanding challenge. To this exception, the experiment provided the means as Foucault says, it is logical that observation is followed by the experiment (Foucault 1975, p. 108).

Further, the invention of steam engine, the discovery of current, chemical composition of organic substances, scientific study of agriculture and soils and genesis of biochemistry made possible that bodily processes could be reduced to physical and chemical components (Coleman 1971, p. 119). The search for physicochemical equations that are fundamental to the functioning of the body became paramount.

Thus, organism could be treated as a machine following laws of mechanics and thermodynamics (Coleman 1971, p. 123). By the nineteenth century, physiology established the mechanical character of being founded on physicochemical laws, another addition to the physiological method. One could see at this juncture of time, an emergence of the experiment as the distinctive mode knowledge and physicochemical instruments in the skilled hands as a means to access marvelous density of things.

To sum up, in the nineteenth century the significant debate within biology was whether to interpret life or find the essence of life. Reductionists or mechanists reduced the patterns of matter to physicochemical analysis while as vitalists informed by metaphysics searched for vital phenomena. Towards the twentieth century and onwards molecular level became the site of explanation and experimentation as a way of thinking (Allen 1975, p. xiv). Thus one could say experimentation, and biochemical analysis are the defining features of contemporary biology. Be it the 19th century biology, practiced through physiological concepts or twentieth-century biology which is experimental, integrative and rigorous, it is the influence of concepts of physics and chemistry, apart from technology, that biology look towards, unlike earlier biological thinking, premised on speculation and description (Allen 1975, p. xv).

Clinical Gaze as the Foundation of Cosmopolitan Medicine

As mentioned, in the early nineteenth century a new beginning was set off in the medicine that enabled the doctor to diagnose and design solutions with remarkable precision. The clinical gaze of a doctor with powerful, practical wisdom could speak

the truth. However, it does not mean ancient doctors had no such clinical wisdom. What changed effectively was the method of observing the patient. To search for the conditions that enabled the modern practitioner to see what an eighteenth-century doctor could not see Foucault (1975) compares Bayle whose observation set medicine afresh on a course, dissipate the fantastic figures to reveal, space earlier occupied by the language of fantasy with that of Pomme who carried the old myths of nervous pathology to its extreme (Foucault 1975, p. x). For Foucault (1975) the difference was at once tiny and total as the qualitative precision of words of medicine, that is, diagnosis in the 19th century directed the doctor's gaze. Observation displaced the language of fantasy. The disease was enclosed within the subjective symptoms of the patient that need to be observed, unlike mid 18th century where symptoms were treated as a mode of knowledge to decipher the essence of disease.

Here one could invoke Stacey's (2013)⁷ metaphorical understanding of the disease, in her case cancer, where metaphor is not just a play of words but the metaphors we live by, that is, the human thought process is saturated and defined by metaphors. Stacey (2013) argues that two metaphors-visual and spatial are at the center of construction and emergence of contemporary biomedical discourse. It is these two metaphors and their relationship that is fundamental to the way clinical gaze conceptualized the human body in biomedicine (Stacey 1997, p. 51).

The transition from classical to clinical understanding, one could see the mutations in the spatial configuration that generated its conceptualization of disease. The spatial metaphor in classificatory medicine defined space irrespective of depths of body but space of essence, two-dimensional flat space, to develop rational knowledge that could administer diseases effectively irrespective of the body. It is this reason that one could diagnose diseases through correspondence. The classification of diseases was the purpose of medicine which guided the gaze of the 18th century doctor. Nosologies ruled the practice of medicine and had assumed the specific configuration of diseases that a patient eye would see unraveling on patient's body. The body (localization) of diseased person was secondary to it. The fundamental purpose was to find resemblances, envelopments, and subordination between afflictions (Foucault 1975, p. 5).

⁷ Lakoff and Johnson in their classical study *Metaphors we live by*, explain different types of metaphors that enable conceptualisation of phenomenon.

It was the time when botanical principle ruled the medicine, that is, morphology structured living organisms and associated phenomena. The paradigm shift and ontological turn that took place at the dawn of the late 18th century as the old truth of medicine paved the way for a new way of seeing and saying. However, epistemological rupture should not be read as some hidden truth surfaced or what Foucault says psychoanalysis of medical knowledge nor the 19th century doctor had a radical departure from the 18th-century imagination embedded in the language of fantasy but what effectively changed was the fundamental organization of elements of pathological phenomena. Grammar of signs enclosed within the body of a patient replaced the botany of symptoms (Foucault 1975, p. xviii). It was at the heart of transition that produced different spatial and formal configuration of disease and the patient's body. In simple terms, the body in its texture was reframed and the disease, as present in the body, was given new lexicology.

Thus, the distribution or reorganization of visible and invisible with subsequent verbalization at the end of the 18th century heralded a modern era of medicine by reinventing the body and disease. The spatialization and verbalization of pathological at the birth of modern medicine because of the loquacious gaze, that observes the labile at the heart of things, brought out the mutation in the discourse. A new relationship was established between words and things, that is, the clinical gaze became speaking gaze (Foucault 1975, p. x).

What Foucault (1975) emphasizes is that at the end of the 18th century, the change in the positive medicine based on reductive empiricism reinvented the medical perception under the illuminating and millennial gaze as the new relationship was forged between visible and invisible. This relationship essential to all knowledge changed the structure of knowledge itself and put-forth a new way of seeing and saying⁸ (Foucault 1975, p. xiii).

The conditions or concatenations of events that first summoned up the clinical gaze are crucial to understanding the epistemological nature of gaze. If gaze has to be effective,

⁸ Foucault suggests here that the determinate moment that imparted more credibility to scientific discourse is to search for most fundamental level of language where seeing and saying are still one, that is, where the two facets of truth, speech and visibility shared common syntax. The analysis to trace mutation one needs to search for this fundamental level where the medical language and its object appears as same.

it must be set free of its very conditions of possibility, as aptly captured by Foucault (1975) when he says clinical discourse seems to be as if some archival, innocent and naïve gaze of golden age has. The opening up truth of things to the gaze plunged the medical perception deep into the qualitative networks and augmented more objectivity than the instrumental readings, where each quality offers the truth. Foucault (1975) compares this transition with the classical clarity of enlightenment and attributes it to observing and watchful gaze.

The transition gave an individual status of an object, and its knowledge was constructed on its particular quantities of quality, etc. instead on some aesthetic or historical order. The gaze constructed an individual, as against the reductive discourse, in its irreducible qualities establishing a rational discourse, premised on observation and experiment. Here, one could see a revolt from vitalism and age of morphology structuring explanations and descriptions. Thus, formal re-organization in depth that took place at the end of 18th century laid the conditions of possibility of clinical experience.⁹ Foucault (1975) fixes this moment as the birth of clinic, that is, new carving up of the things and verbalization (Foucault 1975, p. xv).

The clinical gaze thus, changed the substance of medicine not just its form. It consequently shaped the practitioner's experience and produced the new formulation of perceptible and storable, new geometry of space, new composition and dimensions of organs and tissues unlike binary of functional and nonfunctional part of the organ. It produced reorganization of the constituents of the pathology and welded disease on the organism rather than duality of disease and health (Foucault 1975, p. xviii).

To the clinical gaze, it is the signs that carry the value rather than the symptoms or abstract figures caricatured on the principle of botany. The clinical gaze visualized the disease as an embodiment and imposed disease onto the body where cause-effect is to be located on the diseased body, unlike the classical gaze that sought the abstract disease in the bodies. It is these reorganizations that undergird the clinical experience, praised for its empiricism, and crystallized not only the possibility of new discourse but the possibility of a discourse about disease too (Foucault 1975, p. xix).

⁹ The gaze didn't overthrow the earlier systems or listened more to reason than imagination nor some absolute values of visible were rediscovered but the threshold of visible and expressible changed that enabled the doctor to see and to say what remained below visible to 18th century.

Foucault (1975) sees in this accession to an individual emergence of unique dialogue¹⁰, redistribution of signifier and signified. It is this meticulous gaze as Foucault (1975) says that gave shape to the general form of scientific observation. Barry (1994) attributes the changes in medical perception to the fundamental structures of experience that changed at the turn of 18th century and not an outcome of some mixture of knowledge and graceful touch or glance. The medicine as a clinical science has its domain of experience and structure of rationality which sets it different from the traditional and current experience of the disease (Barry 1994, p. 213).

To understand the contemporary notion of disease, historical evolution offers the key to trace its genesis and associations with the internal developments. The conditions of possibility of medical experience owing more to the nature of gaze, subsequently, visualized and verbalized the notion of body and the space of disease. The spatialization of disease that clinical medicine defines in the volumes and lines of the human body seems to be natural, but there were other forms of spatialization of illness before anatomical one.

Every discourse of pathology lays down the lexicology to have a configuration of the disease like that of classical models which spoke of sympathies, correspondence, and homologies. The anatomo-clinical understanding of pathology is a recent phenomenon, precisely the 19th century, where the body of the disease is superimposed on the body of the sick man. Foucault (1975) sees this medical experience where “the space of configuration of disease” explicated on the “space of localization of illness” as the mark of suzerainty of gaze that reads the symptoms on the anatomical masses (Foucault 1975, p. 6).

The gaze at once reads the coherence of pathological, once articulated precisely on the body, produces a figure of its elements. Foucault (1975) sees a dynamic evolution in the spatial configurations of disease but not in the sense of improvement over the previous but as the succession of mutations that define the experience. In classical medicine, space of configuration of illness was more free of localization unlike in the clinical medicine that strictly adhered to the space of localization and laid its possibility.

¹⁰ The clinical encounter changed its opening from what is the matter with you to where does it hurt as the clinical experience got redistributed at all levels-between symptom(signify) and disease(signified), between diagnosis and prognosis etc.

The classificatory configuration of disease was dominated by the botanical principle where diseases were organized and hierarchized into families and species etc. (Foucault 1975, p. 7). It was the analogy that defined the essence of diseases. In classificatory medicine, concern was to make a coherent picture of symptoms to reach a diagnosis. Thus, the first structure that classificatory medicine provided was tables and pictures (Foucault 1975, p. 6).

Classificatory medicine was principled on a spatial metaphor to picture a disease whose configuration is formulated or diagnosed through the logic of nosologies. One needs to attentively see the disease event unpacking its true nature that nosologies reflect. Bishop (2011) calls this period of medicine as the medicine of forms and essences where the disease is subject proper to medicine but not in a sense that body possesses no essentiality to medicine. The pictures and tables of disease became a guiding principle, achieved some divine power (quasi-religious), allowing the doctor to see symptoms on the body. Thus, the philosophy of disease had a principle of botany as spirit where if disease on the surface of body shares similar symptoms and signs with the group of diseases belong to the same group (Foucault 1975, p. 4). For classificatory medicine anatomy was not essential to understanding the disease as the disease can move across the body without a change in its nature. The same disease can cause different signs as it moves. Thus, space of disease and space of body were flexible enough to account for such multitude. The nosologies that represent the essence of disease and objective source of knowledge guided the diagnosis in the 18th century.

Nosologies also represent collective gaze as the medical experiences around the world started to collaborate with each other. The space of configuration of disease in classificatory medicine, where diseases are hierarchized because of relationships by homologies, subordination, and envelopments, etc., treat localization as a subsidiary or individual having no positive role. It defined the configuration in terms of vertical, horizontal and deep spaces that intersect only to articulate the disease as embodied (Foucault 1975, p. 10).

For classificatory medicine, it was the search of qualities that a disease laid down in an organ that mattered most and turned away from the mathematical form of knowledge. The organs do support the disease but never constitute its necessary conditions. The purpose of a doctor is to seek a diagnosis of a disease through the operation of diseases,

in its qualities rather than the measurable mechanics of body (Foucault 1975, p. 13). In classificatory thought, the patient's body was just the rediscovered picture of the disease and the notion of embodiment in classificatory perception is different when compared to clinical medicine. Foucault (1975) defines the classificatory medicine with the primary spatialization of disease where the knowledge of the disease is historical¹¹ rather than philosophical, that is, the disease is just a coincidence on the surface without depth. It led to the formation of nosologies-pictures and tables where gaze defined the depths and complexities as a portrait- two-dimensional surface phenomenon (Foucault 1975, p. 5).

Classificatory medicine tried to free the gaze of the disturbances that body erects to it in its endeavor of deciphering the essence of disease. The knowledge of the body is relevant only to subtract it but the knowledge of nosology, doctor's compass, would establish the success of treatment. Thus, diagnosis is at once both a process and category, that is, search for the essence of disease (category) incidental to the body. So, classificatory medicine leveled off the perspectives to produce the homogenous space where cause and effect have the same position and have no reciprocal relations but "perpetual simultaneity" (Foucault 1975, p. 6).

Classificatory gaze did not offer the perspective but notion of essential disease, as it was constrained by the abstract figures delimiting an experience beyond the surface division, essences, and similarities. Diseases were configured on the botanical principle where the analogy of forms produce essences and subsequently enable the doctor to communicate and organize the diseases in the real world (Foucault 1975, p. 7). In classical medicine, patient and doctor obscure or denature the essence of the disease, so the doctor must subtract the patient, to know the truth of the pathological fact because the patient is just externality to the essence of disease, and the doctor himself.

Classical medicine relied on the knowledge of the nosologies that guide the doctor's gaze towards the decipherment of the nosological picture on the body rather than the patient suffering as the starting point. The classificatory thought had a belief that disease is not counter-nature. Diseases follow the laws of life but its patient and doctor who are disturbances in the rational discourse of disease as they obscure its true nature.

¹¹ Historical here means the clubbing together of the symptoms offered to the gaze while experiencing the simultaneity of the natural phenomena of disease.

Thus, the role of medicine is to neutralize them to reveal the essence of the disease (Foucault 1975, p. 8).

The doctor must stick to nosological knowledge to extract the essence of disease. Otherwise, the therapeutic indiscretion could obscure its essence ought to be keenly observed – the deciphering as per the nosological order. Therefore, the classificatory gaze was caught in the enduring reciprocity, effacing its conditions of possibility and visualized the two-dimensional picture which is both an origin (made possible the rational discourse of medical knowledge) and end as it is towards that essence the gaze must proceed through the body of the patient and doctor.

Foucault (1975) described classificatory gaze as retrieving because to give itself an essence; the gaze must let the disease to win and reveal its truth (Foucault 1975, p. 14). However, classificatory medicine could not resolve the question of variation to essence reflected by different organs as pathology affects them. The concern shifted the focus from the essence of pathology in whole to parts that also reflect that essential nature. It brought back a renewed attention to an individual and less attention to the essences.

Foucault calls this secondary spatialization of pathology (Foucault 1975, p. 15). It required close attention to the patient's subjective interpretations and sufferings. It started unceasing attention to know the individual in its all qualities and densities. Thus, the birth of qualitative gaze where the subtle perception of the qualities distinguishes one case from the other and requires a whole new hermeneutics of pathological fact based on measuring variations, the defects, and excesses, etc. The medical gaze sensitive to fine qualities explain the modulations and specific qualities what classificatory gaze called the "particular histories" of an illness (Foucault 1975, p. 16). These variations turn out to be an outcome of the qualities of temperament etc. that modulate the essential character of an illness in a particular individual. The space of an individual where these variations appear brought back the positive character of an individual rather than to be subtracted or seen as external to the essence.

Again the gaze was freed of collective medical structures¹², collective seeing and more so of the hospital experience and turned the focus of medicine on the qualitative depths

¹² The deciphering of the disease in primary spatialisation depended upon the knowledge of group of species that make disease. The diagnosis was entirely to see the progress of the nonlogical description of species of disease on the patient to understand the essence that nosology represents and then to administer it effectively.

of an individual (Foucault 1975, p. 16). As the space of disease and space of body merged, the search for localization of the disease advanced from organ system to tissue and finally cell in the 19th century. Thus, search for patterns of the movements rather than anatomy or apparent configuration of the body, opened up the marvelous depths of qualities and became the norm.

The gaze observes the pulse and respiration not the muscles or configuration of heart giving birth to the physiology-functional dynamics replacing the static configuration of classificatory medicine. The medicine of diseases, there is no longer essence or essential diseases, faded into the medicine of pathology setting the possibility of modern clinical gaze. The doctor-patient relationship took a new turn where an individual in all its passivity and silence represent the network of qualities that reveal the order of disease open to the more attentive and penetrating medical gaze.

However, the disease is not only related to organic body and pathogen but has to do with social space too. Foucault (1975) sees a tertiary spatialization as expansion into a space constituent of society and its relation to a disease. The disease is here located on the geography, invested upon and importantly managed. Tertiary here implies the complexity and collective response of society as disease forces to formulate the ways to protect, simultaneously excludes others, and form associations, etc. In simple terms, the tertiary spatialization belongs to the political and social space that can allow or overturn the medical experience and formulates new dimensions and new foundations for itself (Foucault 1975, p. 16). Further, it opened up the natural habit of a man, society, for improvement and care of disease be at person's natural locus which is family rather than hospital¹³. Tertiary space commences the notion of state intervention and public health but at the expense of medicine of species as it is the social dimension that became important and gave birth to public medicine (Bishop 2011, p. na). Tertiary space is about the health care activity that society deems appropriate. In modern medicine, clinic as against bedside and hospital became the prime site of health care.

In classical medicine, home as a natural site of care offered true essence of the disease but as society evolved hospitals emerged as the site of care. However, the temples of death, hospitals, became the artificial and privileged space, where disease loses its

¹³ The hospital that supposes to create a differentiated space creates further disease in the social space.

character and complicates as diseases crossbreed (Foucault 1975, p. 17). The shift away from the body to the social space, understanding of disease became contingent on epidemics and necessitated state intervention. The classificatory thought, where the disease was standardized to be found at the play of symptoms, the tertiary configuration of disease, as disciplines of epidemiology and public health gained currency and moved away from laws of health and disease in the individual to distal factors like environment, geography, and social attributes.

It was argued that physiology and pathology are sort of sedimented social and cultural history that blame inappropriate lifestyle, the natural history of the disease and pathological habits. It was because of this medical perception that one had a sanitation programme in Britain and good food accessibility programme in France. Thus, tertiary configuration reflects the interplay of sickness, medicine and society. Standardized statistical methods gained weight but in clear contrast to the perpetual disease entities slowly emerging beneath the clinical gaze (Lock and Nguyen 2018, pp. 29-32).

Time and space again came back like in classificatory thought to describe the possibility of disease. It gave birth to public health. Thus, tertiary spatialization produced a new form of medicine where social space became essential and authorized state to manage and promote the health of public (Bishop 2011, p. 32). At this juncture, an entirely new institutional spatialization of disease appeared to ensure that the true art of medicine is preserved and social space is devoid of disease. The medicine of spaces disappeared. The “public medicine” appeared, although claims to be personalized medicine, where it needs the statistics. The object and subject although remained the same, but the perspective of engagement changed proper to gaze (Bishop 2011, p. 38). Stacey (2013), in Foucauldian sense, explains this shift in terms of a visual metaphor that belies at the heart of spatial configuration to articulate the paradigm shifts in the medical discourse. The visibility discourse that became the center of clinical medicine alludes to the perspective difference offered to medicine by the gaze (Stacey 2013, p. 60). As the medicine evolved from classificatory times, it is not merely the technological and scientific developments that recast it, but it is the observing gaze that lays the conditions of possibility. The changes are not precipitate of concatenations of events necessary for it to occur. One could argue it is the primacy of gaze that clinic embodies.

With the birth of clinic the metaphors of visibility became essential to medical knowledge as it is the fine qualities, to which gaze is always sensitive, and a sign that represent the truth of disease and become accessible to the eye of a doctor who holds a renewed position to diagnose the disease in terms of prediction, risks, and progress. It is the clinical gaze, at the advent of pathology as a field, which brought invisible to surface and deciphered the poison at the heart of things as disease. The visible, as a metaphor, at the center of clinical experience not only reproduced the relations of elements of the body in a qualitative sense but more so reproduced the medical knowledge itself.

A new relationship between seeing and saying was forged where medical perception enabled one to say and show what it sees. However, medical knowledge, in turn, necessitated the new configuration of medicine. The gaze, as Scott (2010) says, is performative as it is the very product of medical experience and it is the very act of gaze that carries out the medical experience (Scott 2010, p. 45). It changes the ontology of things and what could be known. To read the body as the text has to be abandoned as signs obscure the disease and are open to interpretation. Pathological anatomy had its genesis at this juncture and turned away from contemplative art to active experimental science (Scott 2010, p. 46).

The pathological anatomy constructed organic body as a body with organs and subsequently appeared the medicine of organs, cites and causes and the medicine of symptoms disappeared. Pathological anatomy reconfigured the disease on physiological traits proper to each organ and reorganization of medical experience started to emerge. The clinically organized body again took a significant turn with the invention of tools and technologies like stethoscope and X-ray as it remolded medical perception greatly and reorganized corporeality and enabled accession to corporate. The historical body undergoes, thus, constant respatialisation through the new technologies (Scot 2010, pp. 46-50). Similarly, Jewson (1976) argues that emergence of laboratory added another dimension to the clinical investigation and calls it laboratory medicine. However, it did not challenge the clinical practice as it only added technology to understand underlying spatialization of illness (Armstrong 1995, p. 395).

To understand a moment that emancipates the gaze of its conditions of possibility, one needs to open up an entire philosophy on historico-critical dimension. Foucault (1989)

divided the philosophy into two opposing lines, one is of experience, of sense and of the subject and other a philosophy of knowledge, of rationality and of concept (Canguilhem 1991, p.10). For conceptual purposes, it is the second stream of thought that would structure conceptualization of this subsection.

As eye can see what is visible, two-dimensional surface phenomenon but what is beyond visible is introduced to by the gaze. The experience or perception can be biased and lead to the wrong conception as is the case with signs appearing on the body of a patient. It prompts one to move away from empirical science to the philosophy of knowledge that could locate the moment at which gaze renewed its conditions of possibility. The history of science is not just the history of ideas or how the truth surfaced slowly out of the dark but how “moments of truth” emerge in discontinuity. For Canguilhem (1991), discontinuity as a process is integral to the history of science as it is this discontinuity summoned by the very conditions of existence¹⁴ that renews its foundations. However, the history has its specificity which is attributed to it by congruence to the discourse, but it revises its content by what Foucault says a new way of speaking true as the error is not eliminated by the truth (Canguilhem 1991, p. 15).

The grace of this method is that the different episodes of scientific knowledge establish a norm that sets new a foundations. The discovery of norm depends upon the point of view of epistemology. It is this normativity that defines the gaze and simultaneously makes and remakes its own the history. Here, one needs to understand the notion of epistemological rupture, a Bachelardian notion that means separating the scientific from pre-scientific past. Thus, epistemology is not only the addition of new knowledge, but its the history of obstacles to be overcome posed to thought by the knowledge itself (Canguilhem 1991, p. 15).

Theoretically, the decisive moment that marks the birth of clinical medicine was the formation of the biological concept-an idea that gives access to the structures- like physical and chemical processes that constitute specific processes of living beings, and of the object or concept of humor in pre-scientific times. The genetic error for a physicist is merely a displacement of one nucleic acid by other but for the clinician, it is this difference that makes its object, and the lays the foundation of knowledge. Thus,

¹⁴ The history of discontinuity is discontinuous and impermanent as each moment of truth is just a moment of true.

processes of life are the object of knowledge and concept as one of the modes of information.

Changing diagnosis and impact on Disease entity¹⁵

To understand the diagnosis, one needs to understand the concept of a disease entity. The disease entity as an important theoretical concept has its roots linked to how the ideas in intellectual space configured or trickled into medical thought shaping the science of pathology. Broadly, one could conjure up the ontological, physiological and molecular conception of a disease entity.

The alternative medicine like the Egyptian medicine had an ontological notion of disease where disease enters and leaves a body. Similarly, the germ theory of the disease comes closer to ontological representation as one could see the sick man. The Greek medicine premised on the theory of vitalism replaced ontological with a dynamic notion of disease and found the notion of a health and disease on the equilibrium of humor. In this system of thought, the disease is not something disequilibrium but a process to set new equilibrium to maintain harmony and bring about healing as whole nature with and without a man is in harmony and equilibrium (Canguilhem 1991, p. 30).

Virchow introduced a shift as he distinguished between disease entity in itself and cause of the disease. He proposed that disease is not the suffering of the whole organism but the pathology of cells. Hence, the field of cellular pathology was constituted, against the Germ theory where it is the foreign invasion that causes the disease (Canguilhem 1991, p.32). The medicine shifted its endeavor of therapeutics into the pathological anatomy and cellular structures. It was the time medicine was shifting away from the nosological system of diagnosis and medical perception finding its way into the pathological morphology and pathological physiology (Hucklenbroich 2014, p. 13).

The multitude of diseases, be it by some external agent or deficiency or some dialectics within the body, fall into either dynamic or ontological conception of disease. However, what is common to either of the conception of disease is that health is different from

¹⁵ Disease entity simply means a theoretical category to understand-type or pattern and interpret an individual case- each disease as a phenomenon of disease entity. It has a practical purpose of articulating diagnosis based on defining characteristics. The organisation of disease entities on a principle appears as what we call as nosology.

the state of disease, the normal from the pathological. The medical thought sees its object in this presence or absence of principle or a morphological change of organism (Canguilhem 1991, p. 41).

The physiological theory of medicine championed by the clinical medicine conceives of disease as an effect of deviation from the functional norm and regularity. Disease as a variation of the physio-chemical level of individual reflects the notion of normality at its core. However, Edmond Murphy points out the seven different meanings of normal like a Gaussian point in statistics (Canguilhem 1991, p. 42).

Thus, the conception of disease on normal and pathological configuration emerged with the clinical medicine. One must search for the underlying physiological laws to have effective therapeutics. From Sydenham's delimitation of illness to Morgagni's pathological anatomy, a revolt from vitalism established pathological and normal phenomena are no different physiologically except in their quantitative variations-excess or less (Canguilhem 1991, p. 44).

It was Broussais¹⁶ first, what Comte calls as the Broussais's principle, who propounded such a relationship between normal and pathological where the exploration of one effects the other (Canguilhem 1991, p. 45). It produced a new ontological narrative where disease and health are not qualitatively different, and by the scientific technology one could wipe out the concept of disease by restoring the normal. Before the Broussais, the state of normal and pathological followed mutually exclusive laws having no effect on each other (Canguilhem 1991, p. 45).

It is in the experience of disease one could have accession to the laws of normal and teachings of health, Broussais said. Hence, the disease became not a state of anguish but an object of knowledge. The contention was, however, whether one should start from normal physiology to understand pathological physiology or vice-versa. To this end the dominant idea that time was it is in the pathological state, borrowed from the natural science, one could easily discern them. The reason being that in crises the laws are easy to decipher than in normal state similar to experiments (Canguilhem 1991, p. 46). The disease became equivalent to the experiment and observation where inaccessible is brought to the surface. It is in the morbidity that nature becomes

¹⁶ He reduced all pathological phenomena to process of increase and excess and subsequent cure as blood-letting.

accessible otherwise remains subtle whence in a normal state (Canguilhem 1991, p. 46). It is not irrelevant to mention here that history of ideas cannot be neglected whenever the history of science is invoked as the cultural settings shape meanings like Sigerist (1951, cited in Canguilhem 1991, p. 47) observes that medical conception is conditioned by the transformation in the ideas of the epoch.

However, to see no radical difference between the two phenomena raised some question like the theory confused cause with the effect and equated the terms morbidity, pathological and abnormal and could not prove whether the relationship between the two is of continuity or homogeneity (Canguilhem 1991, p. 47). It was a time when blood-letting, leeching, diet and other therapeutic prescriptions were asserted by John Brown (1859) to regulate the intensity of the excitement that lies beneath the states of health and disease.

The mathematization of biological phenomena that took place since the late 18th century as Xavier Bichat (1800, cited in Canguilhem 1991, p. 47) argues is only to force a metrical system on vital phenomena which are essentially irregular and unstable. Bernard (1813, cited in Canguilhem 1991, p. 47) also found his scientific pathology in the science of physiology which is the science of life. The disease is simply an excess, diminution or obliteration of normal function. The physical and chemical expressions are the manifestations of the laws of nature, that of pathology and normal which can be quantified (Canguilhem 1991, p. 48).

However, the fundamental problem with all of them is the ambiguity in whether pathological phenomena is a disturbance of normal mechanism or normal phenomena. Thus, one could explain pathological and normal phenomena in terms of quantity or quality depending upon whether vital phenomena is taken in terms of its expression or mechanism (Canguilhem 1991, p. 50)

One could take the example of diabetes where the threshold is mobile and depends upon many factors. So, to quantify the mechanism won't be advisable as the disease is an event that affects the whole rather than merely functional mechanisms gone wrong. It could be said that in some instances there is a quantitative variation in mechanism and

some cases normal and pathological exhibit similar mechanisms because the living organism is a system of interdependent functions as a whole (Canguilhem 1991, p. 51).

In search of positivism in medicine essential to effective therapeutics, it must be premised on experimental pathology which is physiology but quantitative (Canguilhem 1989, p. 51). However, for objectivity, one could mathematize both the state of health and pathology as similar but at the cost of a patient who is ill. At physiochemical and anatomical level both states could be similar, but the outcomes quite different as to be sick is to live an entirely different life (Canguilhem 1991, p. 52). To break down pathology into variations in organic functionality is to deny the interdependency and indivisibility of an individual within and with the whole environment.

The pathological mechanism has become the replacement for pathological experience, and it is this reason that diagnosis assumes the physiological point of view rather the experience of an ill person as reliable (Canguilhem 1991, p. 52). No doubt it could be said that subjective symptoms mystify the objective signs, but it does not rule out the qualitative ring to the pathological and physiological phenomena and pathological as an entirely new way of life (Canguilhem 1991, p. 53). With the physiochemical notion of pathology one could say a person, not at the conscious level but at an organic level could be sick, that is, sickness without a sick person. Similarly, Leriche's theory espoused organic self of an ill patient in medical diagnosis but only as an extension of Comte and Bernard's thought by adding the authentic medical subtleties and experience. He proposed that the health, in the silence of the organs, as organic innocence-the laws of life, is deprived at an instance of the disease (Canguilhem 1991, p. 60).

The knowledge of the disease, a new way of life, reveals the normal functioning of an organism. Such a conception of normal and pathological envision the technological salvation that would guide the medical perception (Canguilhem 1991, p. 60). To conceive normal and pathological as the quantitative difference is to deny the quality but not the absence of quality like to quantify the light into wavelengths does not exhaust the quality visible to human eye.

Moreover, the reductionism by following the spirit of physical sciences, medicine essentialize the identity of physiological and pathological. The clinical medicine with monist character replaced the Cartesian dualism practiced in medicine till late 18th century as the clinical method organized disease processes on the physical and chemical

constituents of the organism as against the dualistic medicine till 18th century where disease and life were considered to be opposing forces.

Leriche's notion of health or life in the silence of organs implying the biological normal confirms that the existence of life becomes evident once the norm is transgressed (Canguilhem 1991, p. 64). However, normal in physiology is a statistical description, and the purpose of therapeutics is to bring back in a sick the empirical norm. However, normal for a patient carries the social meaning and personal appraisal. The relative stability of meanings of disease and health in physiological science and dynamicity of normal in social life problematizes the process of diagnosis in the medicine. Thus, diagnosis as the quest to restore normal draws its knowledge, from a range of sites, from the physiological, actual organic experience and the social environment (Canguilhem 1991, p. 66).

Normativity of Life and its Implications for Diagnosis in Medicine

A diagnosis which is both socially and medically informed process has a characteristic ability to define order-normality and deviance medically, constructs the frame of communication and establishes relationship and norm (Jutel 2015, p. 850). One could reformulate Sigerist (1951) then, as diagnosis isolates if not alienates because disease connotes non-value. Normal means to observe rule and subtly alludes to "ought to" an average or standard (Canguilhem 1991, p. 67). Thus, normal at once conveys a fact as well as a value because the norm is subordinate to the observer. In clinical space, the habitual state of organs is assumed as normal and their ideal state and once disturbed, clinical gaze searches for that statistical threshold to be restored through therapeutics (Canguilhem 1991, p. 68). Here lies an ambiguity, whether it is the goal of therapeutics to establish normal ideal or it is the sick person who wants a recourse to normal through therapeutics.

Canguilhem (1991) is of the opinion that life per se is biological normativity and once caught in functional crises reacts to it as a disease and unconsciously exhibits value. The life is, in fact, a polarity and each condition have its norm be it health or disease¹⁷.

¹⁷ Biological normativity as Canguilhem (1991) explains through an example of assimilation and excretion process showing polarity of life as they are not same but if any obstruction occurs inside the body, which too follow physical and chemical laws, but not the norm which is the activity of life. So, life expresses the normative activity at all processes. Disease is not an absence of norm but certainly an inferior norm incapable of exhibiting normativity.

Thus, emphatically biological normativity, an en-bloc of healthy biological norms and pathological norms, establishes the norm rather than the statistical reality (Canguilhem 1991, p. 88).

The clinical gaze as it patiently passes over the corporal space observes these norms and subsequently establish the sciences of anatomy, physiology, and pathology. If each condition follows a norm, what constitutes then pathological? Canguilhem (1991) expounds various concepts like an anomaly as the statistical concept that expresses the variation from the average, not the pathological which is experienced as concrete suffering.

An anomaly is not pathological in itself but a variation on a specific theme that could fade into the disease. It is critical to distinguish between an anomaly and pathological because it shows the importance and existence of variation and capacity of the individual to establish a new organic norm. Canguilhem (1991) says that an environment is normal if species maintains its norm better there even if rare.

A variation is normal so far it finds its conditions of existence and turns to be a pathology if inferior to the established norm which is transitory too. What makes a variation normal is its capacity of normativity and pathological, its inferiority and incapacity to maintain the norm (Canguilhem 1991, p. 70). Such a perception of normal brings it in conflict with the notion of normal, considered objective, abstracted statistically in an assumed experimental condition.

The framework deployed in an experiment conveys the meaning of normal which is different from the real-life phenomena of normativity. For effective diagnosis, a practitioner must observe the distinction between the normal and pathological state in non-artificial and experimental(artificial) situation. Canguilhem (1991) highlights the case of difference in the phenomenology of sleep in normal state and sleep induced by pharmacological means (Canguilhem 1991, p. 80).

Summarily, one could say that if normal means a stable relationship with the environment, the experimental milieu is one such a new environment where life creates its new norm. It could be said then, experimental physiology observes objective norms and then labels the observed facts as universal but within experimental conditions. However, in search of objectivity and scientific validity, the statistical average assimilates the concept of normal. This overlapping where the multitude of variations

erased by the statistical average considered as the norm lies the diagnostic conflict. To rob off the human character of physiology and to express it as animal physiology in terms of statistical average is to deny normativity to a living being and inverting the physiological behavior in the social and ecological milieu (Canguilhem 1991, p.80).

When Sorre (n.d. cited in Canguilhem 1991, p. 80) talks of “functional optima” imply the capacity of an individual to search for the values that realize the functional efficiency and consequently, convey that one is normal not because of statistical frequency but normal in conditions around expressed in average frequency). Thus, the truth of the diagnosis is to search for the content of norm that life has successfully adapted to, not a designation of variation as simply normal or abnormal interpreted by a statistical average, asserts Goldstein (n.d. cited in Canguilhem 1991, p. 81). The disease is thus not only substantially different from the notion of health, but a new dimension of life and laws of pathology cannot be deduced from the normal what Comte and Bernard (n.d. cited in Canguilhem 1991, p. 81) proposed. It could be said then, a person is healthy when he feels in harmony with environs around but normative when capable of following new norms that environment can demand. Diagnosis must while interpreting normal and pathology move beyond the corporal body as a human is more than just an organic complexity.

Apparently, what could one infer here is the indeterminacy of health and disease but Canguilhem (1991) cautions about not to profess indeterminacy. what is important to understand here is that numbers do not speak for themselves but make sense only in a given context.

Interestingly, Goldstein (n.d. Canguilhem 1991, p. 81) diagnosed the essence of an organism to be problem-solving whole as both normal and pathological are the expressions of the organism’s endeavor to deal with certain demands of the environment. Symptoms are the responses given by the modified organism to definite demands, and in reciprocity, the response could change the formal organization of the organs (Canguilhem 1991, p. 82).

The mathematization of the body has led to a search of disease at the cell, tissue or organ level effacing the whole organism that first brought it to the notice. Once the technology locates the disease in organs and cells, although clinically cells are sick, obsoletes the totality of life. It is assumed that scientific technology enables one to reach

a confident diagnosis based on objective pathology but technology per se is contingent to the observer and results obtained have no significance itself but in meaningful relation to the sick person. When technology allows one to surface the poison at the heart of things, the internal becomes external but what's apparent is folded within. It becomes necessary then to enlighten the technology by the experience of the sick. Canguilhem (1991) rightly argues that there could be the objective science of body but not of pathology because pathological qualities are the import of technology and thereby subjective.

Cartesian philosophy transformed the notion of body and subject as a material substance that has a dimension of metrics reproducing the body as a matrix of mathematical-physical relationships. The geometrical nature replaced the immediate experience of the body and decomposed the subject only to reappear as mathematical laws hidden in the body.

As the gaze delved into the organic space, institutionalized a specific conception of reality to apprehend the laws of nature. Consequently, the body reappeared as the embodiment of molecules and their relationships, what one can call the emergence of molecular gaze. The molecular gaze transformed the body into the living text, a language of codes that possess information. The life processes at molecular level-gene and DNA possess the code to script the life. The reconceptualization of body as the paradigms shift from morphological to molecular concepts developed into an information-based notion of health and pathology. Genes as master molecules established the assumption that living organisms could be better understood by decoding the information.

Molecular gaze says we are but the chain of nucleic acids and to understand the language of the body; one needs to listen to how gene speaks to the cell (Anker and Nelkin 2004, p. 20). It is this reason since 1950 were when information theory and discovery of DNA made its appearance one could see linguistic metaphors enter the biological science at large enabling the communication not only between the scientists but also to convey the significance of genetics to the public in the simplest sense.

As the molecular approach became the center of explanation around mid-60's, Clarke (2003, cited in Hogan 2016, p.208) and Rose (1993, cited in Hogan 2016, p. 208) see in the birth of what they call the molecular gaze the reorganization of clinical medicine

while some others like Haraway (1995, cited in Hogan 2016, p. 208) proposed the death of clinical gaze. Perhaps, one could say that the molecular gaze, new thought, and way of seeing, reorganized and stated the clinical truth in a new way to eliminate the error.

The diagnosis and understanding of disease followed the cue and treatment decisions necessitated the birth of pharmacy gaze reproduced around the molecular approach as effects and actions visualized at the molecular level. The molecular discourse reinvented the body on the molecular characteristics and diagnosis premised, subsequently, on specific biomarkers (Hogan 2016, p. 209). Hogan (2016) argues that “genomic gaze” incorporated to both clinical knowledge and molecular gaze for diagnosis and prevention of disease rather than the epistemic shift affirming the nature of revisionist nature of gaze where the error is not eliminated by the muffled force of truth gradually surfacing out of shadows but by a new way of speaking. The diagnosis as a process of decoding in classical medicine, search for abstract nosology in sick bodies, to the molecular medicine affirms the essence of metaphors to medicine as Kleinman (1998) writes that diagnosis is thoroughly a semiotic activity.

With the invention of technologies like X-ray the internal and private spaces, no longer internal although, allowed a kind of dissection of the living body or like the windows into the interior depths exposing what the body conceals. The development of the technology subsequently, reconceptualized the notion of the body as with information technology body become body electric and with ultra-sound and genetics, etc. digital body (Gilbert 2008, p. 27).

Interestingly, Van Dijk (1998, cited in Gilbert 2008, p. 27-30) argues that genetics introduced the radical shift as information remained not only a metaphor but materially inscribed information realizing that binary language inhabits the physical world. The body, just a collection of information, brought the decomposition of the subject and living being ceased to exist but as dead matter. Thus, genetics marked the shift from mechanics to information and communication theory of body, reflecting the change of scale, adopted a new dogma-code.

Parker (1997, cited in Gilbert 2008, p. 34) sees in this decimation of the body, the emergence of postmodern medicine where the body is just a metaphor that could be deciphered using the new technologies, unlike modern medicine where body exhibits

the solid mechanics that visualize body as machines. Diagnosis more and more now a technology-mediated process eventually crystalizes a question whether technology is desired or a peril?

David Harvey (2003) reflects on this question of the incessant push for technological innovation through the Marxian notion of fetishism. Fetishism in simple terms is a human instinct of endowing anything real or imagined powers that they do not possess. Similarly, when technology is endowed with powers not intrinsic to them like solving social issues, the utopia of the annihilation of disease and eugenics, etc. amount to technology fetishism.

Harvey (2003) argues that we know technologies do not possess such a capacity, but still, we do attach wittingly or unwittingly, utmost importance to technological innovation in part because of human nature is blinded by fetish beliefs. Marx (n.d.cited in Harvey 2003, p.12) explains the material origins of the technological fetishism, so one could say fetishism is intrinsic to capitalism.

Take an example of any new technology that increases productivity, and subsequently in a free market all capitalists adopt new technology to increase productivity, and in turn, the products become little chapter comparative to earlier times. However, profit exceeds temporarily once a new technology emerges, but it is the labor that makes a profit as Marx says profit always arises out of the social relationship between capital and labor.

Harvey (2003) says its right to infer here that superior technology yields an excess profit to the capitalist, although, ephemeral but it is just a fetishism to assume that superior technologies always fetch an excess profit. He also says that capitalists innovate not because they want to but to either acquire or maintain their status, capitalists must invest (Harvey 2003, p. 15).

In another way, as average productivity increases with new technology, the living standard of labor is fixed, and as products become cheaper because of increase in productivity, the value of labor power declines without a decline in standard. As the productivity increase, one could even observe the rise in the standard of living but that also depends upon the way profit is distributed (Harvey 2003, p. 18).

No doubt the gains are substantial and real declining any fetishistic explanation, but gain has a meaning only in social relation between capital and labor that determines the distribution of profit. Again, one could see fetishism at work here as productivity is believed as the source of profit rather relations of capital and labor. Once the innovation becomes business in itself, the institutionalization of technological fetishism thrives and boosts its system -capitalism (Harvey 2003, p. 20).

It would be unbecoming to say that technology is pernicious in itself. Technology has effectively lightened and eased a load of labor by mechanization, the range of medical technologies, etc. that improved life considerably. However, we know that benefits have not been uniformly distributed and to criticise technology from a materialist and instrumental point of view is only to obscure the truth. It is essential to look at technology from the non-neutral point of view and seek out for the primary contradictions that warp and pervert the trajectory of the technological change and create an illusion. Technology, phenomenologically, linked to practice or intention is a new of doing things. Harvey (2003) defines technology:

“As internal relation, as dialectically imbricated in social relations, social processes, and mentalitiés, in such a way as to mediate our relations change with nature and with the processes of the reproduction of social life.... It is an active site of creative and transformative. In exactly the same way that a new product has no value unless it finds consumers, so new technologies (hardwares, softwares, organizational forms) have no meaning or value without active users.”

(Harvey 2003, p. 6).

With technological advancement, the mental conception of the life changes as with the invention of x-ray, etc. changed the understanding of the body, and disease, etc. It is this internal and dialectical relationship between technology, material practice, social relationship, mental conception and our relation to nature that define continuous technological innovation.

The advancement in medical technology at an extraordinary rate is not about instrumentation only but the way medicine is practiced, thought and looked. Medical technology not only shapes diagnosis, therapeutics but conceptualizes the notion of

body, health, and disease. The technoscientisation and biomedicine visualized life at the level of molecules, genes, and proteins and reconfigured the body molecularly.

No doubt technology has improved the horizon of medicine by improving diagnosis and treatment of diseases but subsequently, atomized the notion of body, health, and disease. There is also a sort of collapse of levels of care as prevention suppressed to genetic and molecular level and pushed for more and more curative care. The concept of health and disease becomes nothing more than an outcome of organic functionality. As information about diseases is disseminated in a society that comes from a dominant discourse, the significant demand for prevention rises as exemplified by the push for screening programmes.

The case of cancer and screening programmes mainly, breast cancer and remarkable rise in demand for screening speaks of the assumption that diseases have latent, early and late manifestations. Such, a natural history could be intervened at the latent stage to effectively nip disease in the bud (Armstrong 2012, p. 393) . Screening technology has changed the entire landscape of diagnosis where prevention is an ideal to start with as early diagnosis better. It is this rhetorical claim of detection is prevention that sells screening technology to the people at large (Fosket 2010, p. 331).

Biomarkers established screening technologies mainly genetic biomarkers to diagnose disease and disease risk at the molecular level. One could witness an expansion of preventive medicine both in the healthy population as well the already sick or diagnosed (Bell 2015, p. 124). The coming of molecular bio-politics as Rose (2007, cited in Bell 2015, p. 128) calls it, highlights the embodied risk diagnosed at the molecular level and reproduction of bio sociality and somatic individuality as the new truth of life.

New categories emerge like those at the risk of cancer are being conceptualized as previvors-survivors of predisposition to cancer and have special needs and concerns (Force 2011). Be it imaging technology or molecular gaze; the body is reproduced as an organic language that could be comprehended technologically. Molecular diagnosis quantifies the state of disease and health and biomarkers which are indexical establish the quantitative continuum along which states of health and disease are juxtaposed. From a semiotic perspective, biomarkers or any abnormality or any mutation does not resemble any disease but are indexical, that is, signifiers of potentiality. Perhaps, one

could say the diagnosis mediated through technology assumes in favor of objectivity that technology could do away with the subjective experience of disease but problematic in biomedicine is an inability to comprehend the meaning. It is in part this blind objectivity of medicine that diagnosis legitimizes and perverts the notion of care that medicine promises. To purge the meanings and values from the equation of care, the technology-mediated care turns medical consumer out of a living being.

The molecular gaze throws responsibility on an individual, and a good citizen is assumed to take actively and consciously through screening responsibility of maximizing life chances and formulate strategies. As the gaze shifted from the ontological to the current molecular and genetic level, diagnosis schematized the notion of body, disease, and health accordingly.

The epistemic shifts in diagnosis reflect the history of ideas that permeate all the sciences. The conditions of possibility once summoned upon by the object itself sets gaze free of collective and visualize the substance that alters the perception of the whole person. The history of diagnosis echoes, be it the mechanical conception of life or information communication model, the negation of the positive value of a disease, pathology or error in life. A human being is not tightly programmed being but an active subject who mistakes, what Canguilhem (1989) calls an error in genetics, adopts and lives life. Health and disease are an outcome of interaction to the milieu. The search at molecular or genetic level is to reduce life experience to essentialities and to deny life a character of the whole.

Conclusion

As the medicine took an ontological turn in the late 18th century, it seems that first time since Hippocratic times that doctors agreed to look at things of their experience objectively and the free gaze of all chimeras and imaginations. However, what changed effectively at the clinical moment were not some psychological or epistemological endeavors but forms of visibility. A particular way of knowing the patient emerged and clinical experience as a form of knowledge. It was a time when a new relationship between language and observation was established enabling one to see and speak. It was the emergence of an anatomo-clinical method that gaze offered to establish medicine as a positive science. Disease broke away from metaphysical explanations and became embodied in the living bodies of an individual. It altered the doctor-patient

relationship and laid the possibility of man as an object of knowledge. The advancement in the medical technologies reorganized both space and configuration of disease. It was the time when the absolutely new use of scientific discourse emerged and constitution of pathological anatomy shaped. The new concepts like a cell, tissue, etc. restated the truth of body and disease. However, as the site of explanation changed, reductionism and mechanical understanding became the dominant mode of understanding disease and health. The role of statistics and emergence of different sciences of life forms an important dimension to look at shifts in medicine, which remained unaddressed apart from critical stand against the notion of concept that offers another strand of knowing.

Clinical turn in medicine spawned a new set of consequences and altered diagnosis and the doctor-patient relationship. The structure of clinical encounter and changing nature of between doctor-patient in the context of changing dynamics of diagnosis would be delineated in next chapter.

Chapter Two

Doctor-Patient Relationship Beyond the Clinical Encounter

Introduction

Historically, the diagnosis was a practice to fit symptoms in idealized nosologies where disease and health had vital composition. A shift was introduced with the birth of the clinical gaze that abandoned metaphysical reasoning and gave materiality of the body to health and disease. It demanded the renewed proximate relationship between doctor and patient. With the evolution of diagnosis, medicine started to borrow its reasoning from different sciences and utilize different technologies to arrive at causes of different pathologies. However, in cosmopolitan medicine, it is the technology that has become its hallmark. With this, the dynamics of diagnosis keeps rolling and so, do the clinical relationship. The doctor-patient interaction as a type of inter-personal interaction involves communication as a primary tool of information exchange and could be mediated by the sophisticated technology. Theoretically, a clinical encounter, an interaction between patient and doctor, ought to ensure that health needs are met, and the individuality of the patient respected with shared decision making advanced. Clinical encounter as an interpersonal-interaction has a purpose and involves information exchange and diagnosis. The medical encounter, ideally, to accomplish the expectations and trust invested by the patient in practitioner is a coalesce of fact and value.

The practitioner brings knowledge, experience, and alternatives while the patient brings the subjective experience of the disease to arrive at a collaborative process of diagnosis (Brock and Wartman 1990, p. 1596). Clinical encounter in medical sociology is conceived as a decision-making process defined by the dyadic encounter between doctor and patient. Also, it is theorized as private, proximate, and negotiated relationship inherently embedded in an asymmetrical power relationship (May 2007, p. 29). It is the capacity to diagnose that effect this asymmetry.

However, with the growing contestations and struggles over the medical diagnosis, clinical encounter adopted modulations and correspondingly, the doctor-patient relationship reformulated itself. It's assumed that the shift in essential power difference

between the doctor and patient could improve health outcomes and clinical encounter could be a more shared decision-making event. Moreover, the focus of medical sociology has remained mostly at the doctor-patient interaction level because of the impact of Parsonian paradigm (May 2007, p. 30). Such a paradigm defines interaction as a highly localized process involving doctor and patient. It also fails to consider the influence of meso and macro levels.

The argument of this chapter is to locate such proximal relationships within the broader structural enbloc that shapes knowledge and practice of medicine. The structural changes in medicine as a social institution since the 19th century has reframed the time and space of clinical encounter (May 2007, p. 35). Thus, theoretical vision about clinical encounter must accommodate the various sets of tensions that have emerged in the form of patient autonomy, corporate influence and role of media and technology in shaping beliefs and practices. The way medical knowledge is produced and mediated reframes the practice of medicine and subsequently determines the clinical decision. It is in this context of changing nature of medical practice-diagnosis that doctor-patient relationship needs to be theorized.

Exploring the various shifts in the history of the doctor-patient relationship, it becomes evident that social, economic, political and technological factors play a significant role in framing medical practice and provisions of care. Take a case of smart technology use. The way the general population has adopted mobile technology, the distinction between a medical device and the everyday device seems to fade. The corporate presence has reached to such an intimate level that to theorize doctor-patient relationship in traditional sense seems problematic. Thus, what qualifies the provider and who will count as the patient has become intricate (Harrison 2018, p. 178).

More importantly, with apps and genomic medicine the interaction in proximity, physical and emotional space has taken a new meaning and casted a new doctor-patient relationship. Thomas Cole and authors (2014, cited in Harrison 2018, p. 178) in their book “Medical Humanities” remarked that doctor-patient relationship is in trouble on both sides, be it patient or doctor. What qualifies to be a doctor and patient in the digital and genomic era is different from clinical era. It is these concerns that prompt to reconceptualize the clinical encounter in relation to impulses within cosmopolitan medicine.

Doctor-patient relationship has acquired new meanings and forms corresponding to changing diagnosis, as a construct. It is this dynamicity of diagnosis that informs the conceptualization of this chapter. A diagnosis, which is an outcome of various forces that coalesce together, frame the doctor-patient relationship. Moreover, as uncertainty is intrinsic to diagnosis, it becomes pertinent then to describe and evaluate unparalleled advances in diagnostic technology and impact on the doctor-patient relationship.

Diagnosis and the Doctor-Patient Relationship

The purpose of the clinical encounter is to seek diagnosis and treatment by patient with the help of a doctor to manage illness. Such a proximal and individuated account, however, obscures the impulses that shape the doctor-patient relationship. The changes at the macro level like bio-medicalization (Clarke et al. 2003, p. 161) or genesis of techno-science (Webster 2002) and medico-industrial complex (Medawar and Hardon 2004, p. 258) question the straightforward linear account of the doctor-patient relationship. The presence of these forces has altered the classic status of doctor and patient and more importantly diagnosis itself.

Diagnostic process has come out of the clinical space and happens almost everywhere. Moreover, it's the range of different stakeholders across the health-care system from patients to practitioners to pharma-industries and technology that frame diagnosis. The way different actors influence the diagnostic categories and process in turn shape doctor-patient relationship. It is in response to the changing nature of diagnosis that different interaction patterns could be found.

Emanuel and Emanuel (1992) explicated the four types of ideal doctor-patient interaction models to describe the essential characteristics of each form of interaction. First one is the paternalistic model that assumes practitioner knows best interests of the patient and intervenes to restore the health of patient on the minimal participation of the patient (Emanuel and Emanuel 1992, p. 1). The practitioner has relevant knowledge and skills that navigate diagnosis of disease, embodied by the patient and authoritatively discerns intervention.

The second model is informative practitioner-patient relationship model where the doctor informs the patient of all available interventions, about the diagnosis and prognosis of the disease. The patient is treated as a consumer and has autonomy to

choose among the defined set of therapeutics etc. that suits the patient's values (Emanuel and Emanuel 1992, p. 2). The doctor is assumed to know about the disease, and the doctor must disentangle fact (disease) from the value.

The third model, also informative relationship but proscribes doctor's recommendations as the decision-making and control over the diagnosis must remain with the patient (Emanuel and Emanuel 1992 p. 2). The doctor should only provide information and must not influence decision making according to his values. However, it sets the trend towards super-specialties and technology-mediated diagnosis as a doctor is just a source of information. Such a relationship assumes that patient has fixed values rather than the capacity to reflect on their preferences and desires-what are called "second-order desires."

The other type of relationship model, namely, interpretive, seeks the practitioner to understand and interpret the sick person's values and makes him understand the suitable course of intervention formulated according to patient's values. Kartz (1984, cited in Emanuel and Emanuel 1992) argues in favour of, relying on the Freudian viewpoint, interpretive relationship because patients can have greater self-knowledge and self-determination as people are inherently influenced by the unconscious mind. He assumes that the patient's experience is inchoate to understand the truth which is accessible to the doctor's gaze (Emanuel and Emanuel 1992, p. 4). It is this reason that therapeutics is modeled around the objective knowledge of disease instead of the subjective illness which only obscures the fact.

In such medical interactions values are interpreted to a patient to realize health and wellbeing and ultimate decision and choice lie with the patient. It could be said that such a relationship helps patient to have informed choice as the patient is virtually incapable of understanding comprehensively on his/her own. However, the problem with this relationship is that sometimes patients are overwhelmed by the clinical condition and uncertainty and accept the values imposed on them. In such a situation particular health-related values under the tag of patient's values are pushed in the actual situation. It is more evident in the case of preventive care like screening for genetic diseases.

The fourth model of interaction which is deliberative relationship aims at helping the patient to prioritize health-related values and select best-possible health interventions to secure wellbeing in a clinical situation (Emanuel and Emanuel 1992, p. 4). The moral persuasion through dialogue on the part of the doctor is to make the patient realize and anticipate values that affect health. It is the deliberation, not simply selection and control over decision making that critically assesses own values and preferences integral to it. Such an interaction facilitates an assessment of different treatment courses and prioritizes health-related values to empower patient.

The problem in such a relationship model is that values are incommensurable and each doctor has a specific set of values which become worthy to aspire. Also, moral deliberation easily tends to metamorphose into a paternal relationship in an actual clinical situation (Emanuel and Emanuel 1992, p. 6). There could be other models too as like an instrumental model of interaction where patient's values are irrelevant and objective of interaction to realize more considerable public health measure or some scientific purpose (Emanuel and Emanuel 1992, p. 7). However, what differentiates each of these relationships is level of autonomy and objective of convening.

The shift towards the informative interaction reflects the profit-making purpose of doctor-patient interaction where the patient is a rational consumer and doctor as a care provider (Wiles and Higgins 1996, p. 342). The other reason is the acknowledgment of the rights of the patient to determine the course of treatment through the informed therapeutics. The advocacy of shared-decision making to aspire interactive dialogue and have a more accommodative diagnosis, however, re-embodies informative model in disguise.

It could be said that the different interaction models elucidated have some relevance in different clinical situations. The demand for autonomy to empower patient and critique of practitioner's paternalism has regressed physician to technologist and node of information. Now active and autonomous patients can freely consume and shop for health (Wiles and Higgins 1996, p. 347).

With the departure from subjective symptoms as a mode of rendition of diagnosis to the statistical account of disease and health, informative mode of interaction has dominated the practice of medicine. However, such mathematization of health and

disease has been contested and given rise to narrative medicine. Patient's voice has realigned clinical encounter and diagnosis turned away from the medical objectification of patients. In this patient-centric care, diagnosis tries to incorporate the lost voice of the patient through illness narratives. The other organizing principle of clinical encounter is evidence-based medicine where epidemiological understanding informs shapes the diagnostic practice. Evidence-based medicine promises to deliver health care most appropriate to each as practice in medicine is both application and creation of knowledge.

However, technologically-mediated diagnosis is common to both (May et al. 2006, p. 35). The shift from biomedical understanding to patient-centric medicine does focus on micro doctor-patient interaction and its aspects but neglects the much larger complex of socio-political and economic assemblage that shapes such micro interactional order. Here, one needs to understand that lay person's conceptualization of illness, its experience, and a patient-centered care model are both outcomes of the socio-political and cultural processes that inform diagnosis.

Further, in a patient-centric approach, the purpose is to exchange information relevant to pathology or health and effect shared decision-making. However, many case studies on life-threatening diseases showed there is relative independence between the desire for seeking information and decision making. Blanchard and Cox (2014) in a case study of hospitalized adult cancer patients found that majority of (92 %) them want all the relevant information, but not all of them (69 %) want to take part in treatment-related decisions. Though patients seek information, but in case of life threatening diseases, decision making is entrusted with practitioners because patients do not want to take responsibility of wrong decision particularly in such cases (Blanchard and Cox 2014). No doubt, Communication is vital in medical care and communicative behavior influences treatment outcomes, but that does not account for the broader changes that shape the diagnostic and treatment behavior beyond a clinical encounter.

The apparent form of medical encounter reflects the patient's need for cure and care but disguise the forces shaping such an encounter. Whether to have cure-oriented or

care centric interaction system, does not problematize the overarching cosmos of medicine in which clinical encounter is embedded and embodied.

To an empiricist, the truth of a clinical encounter is a relational and to understand this decision making social space it would suffice to understand the interaction that is immediate and tangible. However, as Bourdieu (1989) explains, the visible which is immediately given masks the structures that are realized in the interaction and truth of such social interaction is not entirely available to observation (Bourdieu 1989, p. 15). For Bourdieu (1989), there is a difference between the structure and interaction, and it is necessary to understand and unravel the system of relations that go unnoticed.

It is this reason one needs to move beyond the clinical encounter where the diagnosis is realized. It becomes pertinent to deconstruct the ontology of diagnosis to understand its assumed objectivity that cannot be reduced to interactional order. The conceptualization of clinical encounter as a social space in Bourdieuan sense constructs the encounter and its purpose as the construction of a specific point of view. Also, clinical encounter as an event is embedded in power relations between different forces that occupy different positions in the social space.

Thus, Clinical encounter as a socially structured event is not merely a doctor-patient enterprise but a collective event. As, in Bourdieuan sense, the habitus of medicine is not only the system of practices and but also the system that produces the perception of the practices from a determinate point of view in social space. So, medicine possesses different points of view sometimes antagonistic worldview owing to the different epistemes. However, the structured social space does not negate the utterance and construction of social space differently and negating the active agent's realization of their own principles of construction. The social space has a potential plurality of possible structuring, but that does not mean social space is chaotic and without necessity. It presents itself as highly structured as evident through the reframing brought by the organizational interfaces in the clinical interaction where it is the corporate interest and informed patient that shape its configuration.

Clinical encounter is conceptualized mostly in a Parsonian sense as dyadic encounter and defined by asymmetrical power relations, but it has shifted away from such linear interaction towards contemporary corporate-professional practice brought by the late modernity (May et al. 2006, p. 36).

Clinical encounter in its basic form has a purpose of establishing diagnosis apart from other goals and is the embodiment of an assemblage of complex organizational, institutional and disciplinary resources and practices what could be called as medical habitus and where subjectivities are reproduced in congruence to it (May et al. 2006, p. 37). The way diagnosis has changed, and its agents proliferated, it's problematic to theorize clinical encounter as a dyadic, passive and circumscribed event. One needs critical engagement with diagnosis in medicine to theorize the changing nature of the doctor-patient relationship.

Sociology of Diagnosis and the Doctor-Patient Relationship

Blaxter (1978, 2009) theorizes diagnosis as an activity central to medicine that analytically could help enrich the understanding of health, illness and health care (Jutel 2015, p. 841). Diagnosis, as it legitimizes an illness and source of medical authority, is a product of social, political, cultural, technological and economic forces. Diagnosis legitimizes, blames, facilitates access or restricts access to resources. It could be welcomed or contested (Jutel and Nettleton 2011, p. 795). Diagnosis as a process is configured and reshaped by both the internal (inter-professional) and external forces like the pharmaceutical industry etc. (Horwitz 2011).

Catherine Trundle (2011) in her ethnography of nuclear test veterans from the South Pacific Ocean as many were exposed to radiation illustrates that without a diagnosis, one cannot establish illness and state responsibility. Thus, diagnosis is a politically charged activity as it entails recognition of culpability (Trundle 2011). In contemporary times diagnosis is mediated through the technology and is more statistical decision. In such a scenario push for shared decision and patient-centeredness could remain perfunctory. Nonetheless, diagnosis remains essential to clinical encounter, but it has become more porous to various interests of commercialization, commodification and so on. Thus, diagnosis is more than simple clinical encounter of doctor and patient to confirm the illness.

Categories of potential disease and risk factors blur the boundaries of disease and non-disease categories because of the refinement of diagnostic activity by technology. One could say without diagnostic technology, to fathom disease and health seems far distant. In the presence of such a complex diagnostic milieu, the traditional notion of doctor and patient becomes problematic.

The diagnosis could have an immense impact on the patient as could give rise to biographical disruptions or what Giddens (1979, cited in Bury 1982, p. 168) calls the critical situation in the life of patients particularly among chronically ill. The fabric of social life and the foundations of everyday life is permeated by the suffering leading to disruptive experience¹⁸. An individual diagnosed with a chronic illness has to reconfigure and re-plan personal and communal engagements (Bury 1982, p. 168). Besides, the patient suffering from chronic illness also undergoes loss of self.

The non-biostatistical view of suffering where suffering is more than physical pain explains the experience of crumbling away of positive self-images woven before illness. The accumulation of loss results in alienation, dependence, diminished control over life and recasting of self¹⁹ as diminished (Olson 2011, p. 908). At the psychological level, diagnosis of a life-threatening disease evokes coping strategies, that is, internal emotional mechanisms to soften the response that wells upon hearing about an illness. It is assumed that denial is a basic coping strategy employed but as Olson (2011) mentions that in current times multiple coping strategies are actively devised by patients to engage with the emotional response over time.

However, diagnosis of terminal illness induces chaotic relation of time and emotions what Olson (2011) calls temporal anomie, that is, challenged orientation towards time by losing organization, planning, and sense of control among patients. However, patients along with carers redefine the focus or temporal orientation to manage temporal purposelessness and interruption to develop alternative temporal perspective either present or future oriented (Olson 2011, p. 908). In this sense, the purpose of the doctor-patient relationship is helping in recasting time orientation rather than simple encouragement of “hope maintenance.”

Among the external forces, civil society and individuals are predominant agents who contest diagnostic categories. The lay the foundation of diagnosis or its contestation like in case of homosexuality and Lyme disease makes a case for social origins of

¹⁸ As Bury argues that as lay people realise the limits of medical knowledge one cannot assume that there is disillusionment about medicine but criticism is levelled at lack of adequate communication and other factors because of high expectations held of medicine.

¹⁹ Self for Charmaz is organised structure dynamically maintained over time through certain processes in society.

diagnosis. Moreover, it is the diagnostic categories that help in medicalizing the natural states and consequently, lays them bare to exploitation by the pharma industry, etc. (Conrad 2005, p. 5).

Thus, medicalization is a collective process that makes its way into society through a range of actors like lay people, media, pharma-related actors and more important, scientific discovery. Diagnosis once established privileges certain voices and determines access to resources and social roles, that is, it determines who suffers and who benefits (Arnowitz 2009, p. 417). Hence, a person with undiagnosed illness will not qualify the status of the patient and excluded from medical resources.

With the rise of molecular or genetic diagnosis, one of the depressing consequences of it is the birth of an individual who is “genetically at risk.” It categorizes actual and potentially ill individuals together to establish the genetic basis of all pathologies. Illness is no longer suffering or physical pain, although psychological could be. More importantly, diagnosis takes place along a continuum of medical specialists and in turn, generates a new form of relationship. However, reformulation of illness and health along genetic dimension necessitates genetic responsibility as it the genes that give birth to an illness rather external milieu (Novas and Rose 2000, p. 485).

Such reproduction of life processes through the molecular lens not only fade into social exclusion and stigma but wittingly or unwittingly subject an individual to medical gaze in the name of prevention (Novas and Rose 2000, p. 486). Salter et al. (2011) in her study of osteoporosis and screening illustrates that how screening not only yields bio-medicalization of the new population but also gives rise to new categories like pre-disease. The risk status gives rise to a novel source of social identity.

The diagnosis based on biomarkers reproduces the existence of a healthy person into the “at risk of illness” status. The notion of risk factors for disease and disease itself collapses leading to enlargement of disease pool. With the categorical collapse of diagnosed and undiagnosed, diagnosis moves beyond the naming of disease to the

identification of risk factors of disease (Salter et al. 2011). It could be said then doctor-patient encounter complicates instead simplifies the matter.

Because of these genomic and molecular technologies, the risk of disease status/pre-disease status blurs the notion of disease categories. New social identities emerge and pharmaceutical industries, in part, promote their drugs. In such a situation therapeutics may forge a tentative diagnosis (Bourette et al. 2011, p. 1) Thus, Diagnostic, prognostic and therapeutic ²⁰ categories and processes that constitute the essentials of medical practice, remarks Bourette et al. (2011), become conflated and complicate medical-decision making. It is also argued that clinical decision-making is realigned with the rise of non-clinical and laboratory-based results. Consequently, the diagnosis has shifted from an individual to collective judgment.

However, the elaborated division of labor decentres clinical decision-making as non-clinical experts tend to dictate instead simply contribute to the clinical decision. It has recast the clinical judgment altogether differently and reformulated sequential relationship between diagnosis and therapy (Bourette et al. 2011, p. 3). Further, molecular diagnostics provide refined access to underlying pathological structures but not the complete explanatory, mechanistic data (Woodcock 2007, p. 166). Preferably, images as an embodiment of diseases is subject to interpretations and don't produce diagnostic truth in them (Joyce 2008, p. 77).

Despite skills and knowledge, one cannot conclusively reach a confident diagnosis based on statistics and images. Moreover, molecular medicine conceives the different concept of body and disease. The disease cannot be molecular, but processes are. Thus, uncertainty is central to diagnosis. These concerns question the clinical utility of screening. Genomic technology has more commercial interest than clinical utility as it the site at which commercial, clinical, regulatory, and patient interests converge. The molecular vision of life- "molecular optics" not only subjects organic body and its functions to molecular gaze but spawned the parallel development of molecular properties of pharmaceutical products (Novas and Rose 2000, p. 490). Thus, it becomes evident that it is not only the chronically ill person but also the potentially ill who would suffer disruption, exclusion and succumb to medicalization.

²⁰ It's important to understand that diagnosis doesn't proceed prognosis or dictate therapy always. These activities permeate each other.

The shift in the visualization of the body, from clinical to genetic, has severe consequences as it could recast the relation of body and self. Novas and Rose (2000) commenting on proliferating diagnostic technologies observe that complex situation has arisen where a person has to replan the whole range of relations, what they call as life strategies, in consonance with genetic makeup be it future family or kins (Novas and Rose 2000, p. 492).

Genetic corporeality brings the responsibility on individual and family where it is morally and politically an obligation of an individual to restrain or take actions to further the quality of life and act prudently. It means life turns out to be a strategic enterprise (Novas and Rose 2000, p. 493). Geneticisation considers genes are the cause of pathology and individualize the problems of health and diseases. Such individualization describes the problem at the individual level and displaces real causes that underlie the pathos.

Further, state-of-the-art in medicine has transformed the relationship between patient and other professional experts. The at-risk status breeds its web of interaction and involves self-actualization, prudence about one's genetic makeup. Patient reshapes their patterns of living- be it leisure, lifestyle, diet, hobbies, etc. (Novas and Rose 2000, p. 493).

If one looks at medicine historically, the human individuality has been thought out along the bodily lines be it organ level or genetic markers. This somatic individuality encapsulates different forms of mutations²¹ brought about by different forms of technology to the concept of body. However, as Novas and Rose (2000) argue that geneticisation does not reflect passivity but pro-active nature of patients and citizens. People demand screening and genetic profiles. The medical language, once esoteric, is imbibed by the patients because patients and citizens want active engagement with medical discourse and in turn produce new subjectivities (Novas and Rose 2000, p. 493). Thus, the relationship between self and body, personhood, mutates as the novel conception of the body is put forward by technology. However, as Deleuze and Guattari(1988, cited in Novas and Rose 2000, p. 493) say that in post-genomic age its

²¹ Novas and Rose argue that new technologies bring mutations in personhood as reproductive technologies recast the traditional categories of kinship. So, genetics has not brought the essential mutation but one form of mutation.

no longer thought that gene as a deep structure that causes or determines but one of the relays that constitute the complex chain of connections.

Technology, the Human Body, and Agency

The human body is generally defined as an organic entity or the collective whole of an organized unit. The material frame dominates the body discourse. For Descartes, the body is primarily a site of senses. The Cartesian man establishes his physical being through the senses as the famous dictum “I think, therefore I am” articulates the existence of senses and through them identification of self.

However, Lacan (1985) considers self as an embodiment of something “extimate,” that is, the self is more than me, an embodiment of desires of others. Self is intimately exterior and can be perceived only when visualized, unlike the Cartesian body that could be sensed (Hansen 2003). So, the basic debate around body swings in between the Cartesian understanding where self-sensed self; the image of the body is model of self and detachment and Lacanian understanding of self that establishes itself through outside aid.

McLuhan (1994) revisits this debate and expounds that every technology extends the senses of self. Technological advancement because of over-lapping of extensions might unify as well as further the bodily alienation as it could lead to self-amputation of the physical body.

Merleau-Ponty (1964) offers an alternative explanation by considering the detachability of instruments. These detached senses no longer create a sense of disembodiment or displacement of self but amplification of senses. Consequently, the embodiment is no longer limited to our senses and body is more than its senses.

In anesthesia, the patient is silenced but reconfigured and augmented by the machines that maintain the functions of the patient. Technically one could say the patient becomes a mix of technology and organic entity what is called as a cyborg²² (Goodwin 2008, p. 345). Artificial limbs, supplements like a pacemaker, immunized person or pharmaceutically reordered persons, etc. are the medically created cyborgs living

²² Donna Haraway defines cyborg in four different ways. Cyborg as: a) cybernetic organism b) hybrid of machine and organism c) creature of lived social reality and d) creation of fiction.

among us. Lock (2004) argues because of this mix of organicity, and medical technology, the traditional notion of the body, has become ambiguous.

The attribution of agency to machines and the effects of technology on bodies and subjectivities challenge the traditional notion of agency and body. Such a notion of body and agency is informed by the post-biological or post-body discourse assuming that people no longer have a direct sense of body but the mediated sense of body (Miller 2011, p. 25).

The concept of cyber-body adds virtuality as a new dimension to understand the body, an inorganic body which is the creation of pure bits of information (Miller 2011, p. 26). Gaggiolo et al. (2003, cited in Miller 2011, p. 27) proposed a concept of the transparent body or digital disembodiment that medical practice will foster to have a new collective concept of the body where the pro-active biomedical instruments would translate life processes into data. The integration of biotechnological innovation into the body would lead to progressive virtualization of the patient's body (Miller 2011, p. 28).

The digitalization of tissues and organs infused with imaging technologies would not only reconfigure diagnosis but also would represent patient where the image will be a surrogate for optimizing individualized medical care what Satava and Jones (2002) call as a medical avatar. So, both medical visualization and virtualization of the body are coalescing into the "digital me" augmented by molecular, anatomical and genetic dimensions (Miller 2011, p. 28).

It could be assumed then the first level of diagnosis and therapeutics can be administered at a distance, and its emergence is visible in the form of health applications. However, it would not only progressively disembody or dehumanize patient but through increased awareness of body lead to self-diagnosis (Miller 2011, p. 30).

The anaesthetised person offers a ground zero for understanding the contemporary conceptualization of agency and body in relation to technology because in certain

situations the body and technology are intertwined as such that body is rendered passive, silenced and least capable of having agency. So, it offers an important vantage point to understand the cyborg's agency where both the patient and machine lack the characteristics of an agent. According to Callon and Law,

"Agents are those entities able to choose, to attribute significance to their choices, to rank or otherwise attribute 'preference' to those choices; . . . agents are able to intervene—to act—in order to (re)create links between their goals and the actions that they cover"

(1995, cited in Goodwin 2008, p. 37).

Hogle (1999) asserts that depersonalization is achieved by managing the body through technology and patient's body disappears into medical records and information. The body is dispossessed of its identity by the medical information and manipulation to recreate the person and his body (Hogle 1994). Poovey (1986) in her study of the administration of Chloroform to ease labor pain suggests that silenced body of a woman is vulnerable to doctor's interpretation as her body is dispossessed of the agency to resist interpretation.

Similarly, Nettleton (2002), Atkinson (1995) and others within the sociology of health and illness while debating about the body and technology nexus, tend to focus on how medical technology fragments and reduces the body to bits of knowledge. The medical technology objectifies the body to produce knowledge to be read by a competent observer. However, Goodwin (2008) contends that with the technological innovation an anesthetic body can communicate despite the loss of language.

The focus on the doctor-technology relationship and to eclipse the patient-technology relationship that may enable patients to express their needs sketches such a picture of technology. The interpretation of the practitioner cannot be simply imposed over the disabled body but to fit with the patient's expressions (Goodwin 2008, p. 350).

Goodwin (2008) in her study of the anesthetized body or technologically reconfigured body asserts that because of technological augmentation of the body, cyborg conveys different forms of expression that could compensate for language loss and resist the imposition of interpretation. She draws from the works of Latour, Schuman, and Haraway to illustrate how the mix of machine and human work together to act and reformulate agency (Goodwin 2008, p. 352).

The extension of the agency to technology does not mean to offer them subjectivity and assuming them having human-like agency. The extension highlights the relational nature of agency rather the property of the individual. The agency is realized in interaction and in the case of medical settings it is dispersed along the collective -doctor, patient, machines and other cognates (Goodwin 2008, p. 353).

However, Goodwin (2008) adds a rider that an alliance of machine and human doesn't necessarily fetch doctor an upper hand in defining the interaction but one way to explore the human-machine relation where the union can convey the expression of the patient to the collective through numbers and diagrams of monitoring devices (Goodwin 2008, p. 355). Also, the cyborg cannot liberate patient of the medical dominance, Goodwin adds. He only attempts to illustrate that such a union where the patient lacks intentionality and consciousness would still manage to contribute to the shaping of an interaction (Goodwin 2008, p. 355).

Despret (2004) also says that body reconfigured within a collective exhibit its agency in spite of the conscious body. The bodies can communicate without being in a conscious frame and assert agency without intentionality. Here one should be mindful of the specificity and contingency of such agency and not obscure the authentic human agency. Goodwin (2008) tries to establish that, though, in limited and distinct ways, the patients exert their agency rather disposed and depersonalized. Also, Goodwin (2008) suggests that to consider the patient's agency within medical intervention homogeneous and passive, as anaesthetized bodies convey otherwise, is problematic. It's argued that objectification is antithetical to personhood and Humanists argue that to ensure authenticity and agency of a patient while interacting with medical technology, it needs protection from objectification (Cussins 1996, p. 578). The power of alienation and annihilation of selfhood intrinsic to technology is considered antithetical to subjectivity.

However, it's the technology that entangles the bodies of doctor and patient into a diagnostic ensemble to have a closer and intimate relationship (Shubert, 2011). Further, Gardener (n.a.) explains that diagnosis as a process draws both doctor and patient in a relation transformed by the diagnostic instruments that are embodied, embedded and transformed with the process itself. Thus, technology is not neutral and objective but reads symptoms and produces a new form of knowledge, affects the diagnostic process and lays a new configuration of contact (Maseide, 2011).

The image of the body, particularly internal-image, is argued to have a great impact on the reproduction and perception of disease and response of patient towards treatment (Helman 2005). The proliferating medical technology with the advent of x-ray and current magnetic resonance imaging is considered to privilege image of a body over its corporeality and experience. The patient has faded into virtuality behind the images (Blaxter 2009 p. 762).

Blaxter (2009) evokes Baudrillard who theorized that the movement into technology-driven post-modern society privileges visualization and imaging. The models of a real without reality or origin begin to emerge which he calls as hyperreal. The distinction between internal and external of body or organ seems to collapse as imaging technology produces digital images of functions and body etc.

Frank (1992, cited in Williams 2003, p. 172) argues that body is doubled and redoubled through a chain of images, that is, the real diagnosis takes place away from the bedside. The images of the patient become the truth of which real patient is just a replica/simulacrum. The images of the body become more meaningful and real body metamorphoses into the hyper-real images.

Further, the translation of images into the digital codes adds a more abstraction to become part of the communication web and medical records. So, digital technology adds yet another simulacrum of a patient. Interestingly, Kelly A. Joyce (2008) deconstructs the myth of magnetic resonance technology that has become pervasive in the landscape of consumer medicine. Its promises of revelation and acceptance in health care are embedded in the commercial and cultural obsession with the visualization. Further, she questions the assumed infallibility and truth exposition power of such technologies and debunks the myth that imaging technology always translates into better health outcomes.

She eloquently shows that the current truth of imaging technology draws its basis from the cultural beliefs about visuals and technology apart from the insurance capital and health care policy (Joyce 2008 p. 100). The defining impact of visuals and technology on diagnosis and consequently on medical practice could be understood through analysis of images translate into an authoritative knowledge as seeing in believing. So, modern medicine sees the body as transparent, understood and controlled and manipulated by the medical division of labor.

The proliferating technologies that turn illness into the disease are little understood by the patient but sometimes frightening and alienating too. The technology that represents the body hides the selves embedded within the body reinforcing the alienation already brought by hospital medicine (Blaxter 2009 p. 765). Daly (1989, cited in Blaxter 2009 p. 763) also explicated the passivity on the part of the patients who lack the skills to interpret and discuss technicalities with the practitioner and this lack reinforces the belief of doctor in the efficiency of technology. Also, imaging technology authorizes the doctor's version of illness over the patient's experience as images are used as proof. An appropriation of experience of the patient as disease narrative leaves patient absent present and doctor's explication as truth.

However, it is argued that the necessary alienating view of high-tech medicine is problematic. Technology as dehumanizing and objectifying and against nature and human is the pessimistic view of technology where technology is a monolithic phenomenon that has gone out of control.

Also, as it is argued that technological thought would alienate humans from what they are is basically referring to the organic or uncontaminated nature that needs to be protected. Latour's (1999) concept of technological mediation mentions the interlinking of images and bodies in a series of translation. It suggests that through technology, the experience of the patient is only delegated and translated rather than displaced. The technology enables the patient to act in certain ways and help in mediation to shape experience (Latour 1999, p. 16).

Radstake (2007, cited in Van de Vall 2009, p. 10) also critiqued the alienation thesis of medical imaging where body parts are disembodied and objectified. She argues that real-time imaging techniques enable patients to experience the "distributed embodiment" to look at the interiors and understand them actively. So, imaging technologies don't reduce bodies to images but incorporate images into the body.

However, dialogue happens during the real-time imaging only unlike other forms of imaging like X-ray, etc. that make up contemporary diagnostic techniques which are devoid of such reflexivity. No doubt, some literature related to genetics and predictive testing like seeing of healthy fetus produce the positive image of high tech medicine but Purkiss and van Mosell (2008), with reference to cancer, show that as the diagnosis forges the decision and treatment, the patients produce and reproduce identities

likewise. So, it's pertinent to have an account of patients experience whether they feel being disappearing behind the image.

The ethnographic study conducted by Blaxter (2009) of patients suffering from chronic illness to find the alienating effect and role of the patient in co-production of diagnosis tries to explore patient's account of experience. She finds that diagnosis of cancer led to fragmentation of body into organs and systems but treated collectively as an individual (Blaxter 2009, p. 770)

Reiterating Mol's argument that imaging technology constructs the interior of the body as an object but in a different form as it shifts from one clinical space to another, Blaxter (2009) suggests that images do imply and lead to fragmentation. Images displace the perceived experience of patient's symptoms and appropriate as a disease because images are the reflection of reality no doubt, but they are constructed by the diagnosis doctor, that is the interpretation from image to diagnosis is purely black-boxing work²³ as Latour calls it (Blaxter 2009 p. 771).

Blaxter (2009) maintains that imaging technology gives a sense of participation to the patient and makes the body more defined. The patient feels ownership and responsibility of body rather vanishing behind. She found out that it was the translation of images into the records and decision that are alienating. Images and readings of text were felt more real than the commentaries and interpretation of practitioners (Blaxter 2009 p. 772).

Importantly, she notes that once images establish the diagnosis, commitment to the treatment regime becomes inevitable leaving limited scope for choice as against the rhetorical shared decision making (Blaxter 2009 p. 772). The reason could be treatment regime within a medical setting is subject to protocols established at policy level etc. Perhaps, premised on Blaxter's (2009) ethnography it could be generalized that patients are not co-producers of diagnosis as they do not have specialized knowledge that could be helpful in interpretation.

So, the critical issue is not whether sufficient space is given to the patient's narrative in the shared decision-making or doctor's biomedical view cannot accommodate patient's

²³ Black-box for Latour is the way the scientific and technical processes are made invisible and what matter is the outcome. It represents the taken for granted and agreed upon system of knowledge. So, it remains unchallenged unless opened because of failure etc.

subjective experience but what makes a diagnosis. It is the diagnostics that define the decision-making rather doctor-patient informative interaction. In such a scenario the patient is left with meta-choice -either conforms to the treatment pathway or else refuses altogether (Blaxter 2009 p. 775).

Blaxter (2009) concludes that imaging technology does not disembody as high-tech medicine is more informative and reassuring rather than alienating. It is the system that is alienating for patients (Blaxter 2009 p. 777). To understand the system of medicine in all its complexities, Cussins (1996) concept of ontological choreography explains the way both the medical practice and patient's experience are controlled and created.

Cussins (1996) argues that objectification can be reductive or non-reductive and in non-reductive manifestations, patients can enact their subjectivity through their objectification. She illustrates the co-existence of objectification and agency or subjectivity through the ethnography of Infertility clinics to understand the dynamics of objectification and its different forms (Cussins 1996, p. 3).

The reproductive technologies have been conceived by most of the feminist scholars as objectifying and hence, subjugating and disciplining effect on women's bodies. The liberals praise such technologies for their emancipatory potential. However, Cussins attempts to draw attention to the Maussian notion of a multiplicity of selves, that is, one can understand meaningfully conceptions of self that are not necessarily tied to the unity of self, but to changing nature of self or ontological exchange between us and our environment (Cussins 1996, pp. 6-8).

The debate around reproductive technologies in relation to woman particularly, infertility patient either supposes woman to be helpless and saved by the technology or to be victimized by them. She is assumed to have no agency, but conformity to the norm and all values accrue to patriarchy mediated through practitioner and technology. By this perspective, women are just an object reduced to its biology and open to manipulation as she has no agency (Cussins 1996, pp. 7-8).

However, Cussins (1996) suggested that a woman's objectification involves her active participation apart from the practitioner, diagnosis, and instruments that manage her equally. It can be argued that there exists a relationship between agency, technology and practitioner in a different configuration rather helpless or victim informed account (Cussins 1996, p. 10). She illustrates through infertility treatment that a patient's body

is fragmented into different parts that are treated then and consequently, forge a self continuously (Cussins 1996, p.10). The agency of a patient also shapes accordingly during objectification.

Because of the intertwining of technology, that has acquired the character of human, and the objectified body emerges the compatible and functional zone that co-ordinates the action of ontologically different actors to create a self, what she calls as ontological choreography (Cussins 1996, p. 12). In simple terms, it means that conditions of the body are co-ordinated through technology in such a way that the concept of human is reinvented to reproduce life.

Medical Diagnosis Beyond Clinical Encounter through Technology

With the growth and diffusion of information and communication technologies, the new ways of monitoring, measuring, and representation of body has emerged. The mobile digital devices are becoming capable of producing biometric data, and such a technology is known as mobileHealth technologies. These wearable and mobile devices produce data of bodily functions and activities like that of heartbeat etc. (Kirwan et al. 2011, p. 142). Because of commercial interest and to promote public health in a particular manner, a wide range of apps have emerged to disseminate health-related information, to assist in self-diagnosing and regulate life processes.

The terms Self-tracking and “quantified self” have emerged to understand the use of these technologies (Smarr 2012, p. 980). Self-tracking has emerged in part because of a growing push towards self-management and self-responsibility of health. The quantification of bodily functions is a major trust of mHealth (mobile-health) technologies besides other aspects of life (Smarr 2012, p. 981). This argument seems to be confirmed by the survey carried by Pew research center, where it was found that 21% of US adults used different apps to monitor bodily functions (Fox and Duggan 2013, p. 2-3).

Lupton (2013) conceptualizes digital technologies as actors who influence meaning and subjectivity as incorporated into everyday life. The mobile digital devices act as

“enhancement technologies”²⁴ in a sense that they produce data that could be used to extend the limits of body and correct assumed deficits in physiology etc. (Lupton 2013, p. 393).

The shift towards digitalization of body and consequently individuals using the digital technologies for self-assessment of health and self-diagnosis is associated with the techno-utopia that has modern imagination. Technology is considered as the harbinger of progress, well-being and human happiness (Davis 2012). The technological gaze privileges information and suggests detailed information of body would prevent illness and enhance wellbeing.

The push towards self-tracking technologies of health is premised on the assumption of layperson empowerment and to bring power symmetry in the clinical encounter. The movement also places the responsibility for health on individuals and hence, promote and engage in the discourse of healthism (Lupton 2013, p. 394). The doctrine of healthism assumes that individuals place good health above all other aspects of life and individuals persistently struggle to achieve that goal. It is a form of medicalization and origins the problem of disease and health at an individual level (Crawford 1980, p. 365).

Such a discourse, affordable to the specific socio-economic group, masquerades the socio-economic determinants of health under the guise of empowerment and self-responsibility. Also, people are bombarded with values of healthism on one side and those who lack self-responsibility positioned as inferior and morally deficient (Crawford 2006, p. 405). Lupton sees in the shift from health as the responsibility of the physician to health as an individual’s responsibility as the logical outcome of neoliberal governmentality (Lupton 1995, p. 3). Moreover, the issues of the digital divide are deliberately ignored within this discourse.

Similarly, biometric self-tracking perspective does not suggest freedom from the confines of the body but the intense focus on the body where through technological gaze mediated by information would prevent and cure diseases onto the body itself. The notion of self-tracking and self-quantification offers an assumption that self-data produced through the technology would prevent the onset of illness. Duden and Waldby

²⁴ Hogle employed the term technological enhancement to refer to the technologies like cosmetic surgeries, hormonal supplements, pharmaceuticals etc designed to correct the deficits in the body or enhance the functioning.

(1993, 1997, cited in Lupton 2016, p. 53) argue that the historical transformations that the body is undergoing are in part because of changing technologies in medicine. The fascination with the visualization of an interior of the body has resulted in the emergence of imaging technology and has become now the mode of monitoring and interpreting body.

So, one could say digital mobile technologies to record and interpret bodily functions is a logical extension of visualizing technologies in medicine (Lupton 2013, p. 393). The shift towards visualizing and digital technologies is transforming the conceptualization and articulation of body and its states of health. Consequently, the process of diagnosis has transformed from haptic mode to optic, altering the treatment and experience of bodies.

The reproduction of the virtual patient, a screen body privileges the data and image over the symptoms and signs offered by the real body of a patient and subjective narrative irrelevant (Blaxter 2009, p. 764). The quantification of life processes using complex algorithms promotes the essence of numbers in knowing the body and its processes. However, it is not unique to medicine as one could see a rise in the use of metrics in other social aspects too. The drive towards the use of metrics in interpreting and reproducing life phenomena is partly impelled by technology giants as Ruppert (2012) argues that assemblage of quantification, interpretation, and purpose is to be understood in its implied power dynamics and ways of seeing.

It is also assumed that to think about the body through numbers using self-tracking technology is to accomplish the self-knowledge. The more we know about our bodies, the more would be our life stable, productive and healthy. It is premised-on assumption that lack of knowledge is a barrier and disempowering. Self-tracking technology has the advantage of recording and interpreting the bodily functions and states into numbers and numbers are assumed as neutral, fact and tempting to trust them over sensations. So, both technology and subject reinforce each other as people domesticate technologies within everyday life and in turn, technologies shape their way of thinking and being (Pols and Willems 2011, p. 484).

The statistics of like pulse, BMI, etc. as one gets them displayed on digital devices, gives the satisfaction of health body irrespective of what one feels. Hence, health becomes a simulacrum. However, Freund (2004) contests such seamless picture offered

and argues that there is certain consciousness and internalized control required on the part of the individual to function in such technological environment what he calls as technological habitus.

The enormity of data produced by the self-tracking devices may be stressful and resent the self-tracking imperative. It could rather than rendering bodies visible and open create greater anxiety and fatigue (Freund 2004, p. 374). Sanders (2016) argue that while self-tracking devices expand the knowing capabilities of a person for self-care but at the same time augment biopower²⁵ and patriarchal power (Sanders 2016, p. 37).

Central to her argument is the Foucauldian insight that the power relations become more intensified as the capabilities and freedom expand (Sanders, 2016, p. 38). She equates the self-tracking technologies with the Foucauldian notion of “technologies of the self” whereby technologies enable a person to reflect and act on their bodies, conduct and effect a way of being to achieve a certain level of perfection and happiness (Sanders 2016, p. 38).

The construction of obesity epidemic as public health problem illustrates this how bodies are regulated and gazed through technology and to extend surveillance as far as possible. Also, because of emphasis on risk factors that denote future illness, the paradigm of surveillance medicine wants to extend beyond currently ill to all the population (Armstrong 1995, p. 393). It is this imperative that screening programmes are promoted, under the guise that early diagnosis through screening leads to prevention.

Perhaps, there is no affirmative research to establish it, but it certainly adds burden to the public health system and unnecessary procedures carried on people at risk. The progressive quantification of body and to treat small deviance from the established norm as pathological assumes that all bodies are at risk and need self-monitoring. The

²⁵ Nikolas Rose defined biopower as governance of a body at distance. It indirectly shapes subjects by authorising a discourse to articulate norms that regulate life and parallelly, co-construct subjects as free and responsible to embody themselves according to norms.

situation of urgency that is created out of this legitimizes more regulation and surveillance of body and elevates like the issue of obesity what Foucault calls “police matter” that is to put all the social body under surveillance (Sanders 2016, p. 39).

The surveillance gaze is inscribed firmly in the social space what Haggerty and Ericson (2003) called as a surveillant assemblage.

“The ‘surveillant assemblage’ is like a rhizome, rapidly growing as sites, methods, and individual practitioners of surveillance multiply to bring more individuals under visibility in various ways” (Haggerty and Ericson 2003 p. 610).

From diagnosis of doctor to new self-tracking digital devices make such an assemblage. Such assemblage to have effective control over bodies requires regulation and reformulation of norms that function as ideals to strive. Further, digital self-tracking devices as normalization instruments are able to convey such norms to construct norm abiding subjects (Butler 1993, p. 110).

The pervasiveness of digital self-tracking technologies not only discipline users but also develops responsibility for health and disease in dove-tail with neoliberal bio-politics (Crawford 2006, p. 410). It displaces the democratic principle of “right to health” supported by the welfare state by individuated responsibility to stay well (Crawford 2006, p. 410). However, Sanders (2016, p. 38) alerts not to portray the potential of digital self-tracking devices as invincible, but such technologies could be deployed to create resistance too.

Uncertainty in Medicine and the Doctor-Patient Relationship

No doubt radiology, biochemistry, and other disciplines revolutionized medicine and diagnostic technologies have achieved great precision and decipher remarkably the structures underlying pathos. We are living in the golden age of diagnosis, and sophisticated technologies are just remarkable. Cosmopolitan medicine places strong incentives to make diagnosis and disincentives to miss a diagnosis. Nonetheless, uncertainty permeates the theory and practice of medicine. It is at the heart of medicine, that is, it is structural rather occasional (Hatch 2016, p. 4).

Because most of the medicine works in known-unknowns and unknown-unknowns. Further, a technology which has become indispensable to diagnosis and more sensitive to small abnormalities is mere a screen and has predictive value. However, precision

does not mean confidence and highly accurate tests need accurate interpretation. Technology does not offer a black and white picture but grey resolution embedded. It is one of the reasons, perhaps, that early detection still cannot prevent mortality²⁶ (Hatch 2016, p. 10). Moreover, the predictive value is not the same as accuracy.

It seems as if what is called as cancer at the cellular level is not cancer and what is found is not killing people. Also, with a spur in diagnostic technologies a case of false-positives, that is, screening tests show the presence of disease and false-negatives, that is, misdiagnosis, have emerged (Hatch 2016, p. 15). It is because both doctors and patients are bombarded with lots of information and researchers hardly get enough time to study the effectiveness of changing technologies.

Given this uncertainty, over-diagnosis or misdiagnosis becomes a reality, and one could witness its impact in the form of an epidemic of cancer, hypertension, etc. as aptly captured by mammography to hypertension management controversies. With the institutionalization of diagnostic technologies, reification of diagnosis happens, that is, pseudo-disease is treated as real, operated and medicated (Hatch 2016, p. 40). In the case of public health treatment centers, patient load further accentuates the reification. There are other impulses also that promote over-diagnosis like markets, Big-pharma, and insurance companies.

However, it does not mean technology is useless. What is crucial to understand here is that when technology is used on an otherwise healthy person, the relationship becomes complicated, unlike a person who feels a disease. Thus, by embracing uncertainty, it would recast clinical decision-making and likewise relationship on new organizing principle.

Conclusion

Over the years new development in medicine and other scientific enterprises and growth of technology has changed the social space of clinical encounter and more so of a relationship. The notion of body, self, disease, and health has diversified. So, has the idea of doctor and patient. Clinical encounter is no longer a dyadic relationship and

²⁶ Mortality graph of cancer in India has remained same but incidence constantly rising. It raises serious concern about diagnostics.

shifted beyond physical limits. It has become virtual and technology its indispensable element. Statistical cut-offs and images and tests have become the truth of body and diseases. Access to data abstracted out of the biology of a patient has morphed into categorical diagnosis. However, these numbers need to be interpreted and not accepted as answers. Further, as much of the medicine is practiced in the shades of grey and coming to terms with reality would create an open environment among doctors to discuss uncertainty and provide patients a better understanding of the clinical course of their malady. More importantly, it would protect people from the impact of pseudo-diseases. For that doctors need to be more honest and recognize uncertainty. Diagnosis as it has moved out of the clinical encounter and its agents proliferated, changes in diagnostic behavior has bred new relationships and subsequent consequences. In such a scenario it becomes the responsibility of the state to regulate the different impulses that effect such changes. Next chapter would elaborate on these macro-impulses that frame diagnosis both as category and process.

Chapter Third

The Political Economy²⁷ of Diagnosis: Emphasis on Pharmaceutical Industry

Introduction

In recently published research by the Lancet Diabetes and Endocrinology had a reassessment of far simplistic categorization of diabetes, an autoimmune condition, into type 1 and type 2. The research suggested categorization of diabetes into five-sub categories. Interestingly, it was found that novel sub-groups are genetically distinct. The expansion is supposed to offer individualized treatment and identify the high-risk patients to enhance the quality of life (Davis 2018). Prima facia, it seems that such an expansion would respond to the differential response to treatment and resolve overmedication problem. Also, such research represents the shift towards precision medicine where diagnosis and treatment are tailored to the unique genetic make-up of an individual.

However, it could be inferred that such an expansion in diagnostic categories may amount to more people diagnosed as diabetic as the research links diabetes to genetics. It raises an important question that either the diagnostic advancements effectively capture the unheard as more people are diagnosed ill, or there is a need to critically evaluate the diagnostic categories and the process itself.

In the 10th edition of the international classification of diseases, diagnostic classification standard for clinical and another medical purpose, the number of disease categories have relatively doubled and the reason being addition and alteration to the terms that describe disease and health conditions. ICD as a diagnostic system defines the universe of disease, disorders and other health-related conditions to assess prevalence and incidence of diseases globally. It guides and tracks the surveillance of the risk factors and provides a detailed description of symptoms based on evidence medicine (WHO 2015).

²⁷ It refers to the mechanisms that societies devise to choose policies given the conflict of interests and achieve a specific economic outcome. In simple terms it's about the power relations that mutually frame production, distribution and consumption of resources.

Another compendium, the diagnostic and statistical manual of mental disorders 5th edition, by American Psychiatric Association, also provides the standard language informed by neuroscience and clinical advancements to diagnose mental disorders and acts as an instrument of communication among practitioners. Further, DSM-V extended its cooperation to harmonize its diagnostic criteria with ICD that also has separate diagnostic guidelines on mental disorders. Such collaboration was done to establish unified nosology and to homogenize diagnosis (Rieger et al. 2013, p. 59).

Apart from other factors, discussed in later sections, the advocates of “early diagnosis lead to better treatment and survival” also push for diagnostic revisions so that medicine can intervene aptly to prevent the occurrence of disease. In such a milieu more of us are diagnosed ill as most of us are considered ill (Rosenberg 2013, p. 1849). However, such (pseudo) urgency and prevalence discourse need to be deconstructed to understand the various forces that frame the diagnostics. Suppose, if diagnostic criteria are lowered what was considered normal earlier would be deemed pathological now. Thus, it becomes pertinent to explore the role of diagnosis in framing the notion of health and disease and evaluate how diagnostic categories are framed. More importantly, the diagnosis has not remained a clinical activity alone. Apparently, it seems disease is some variation of physiochemical state but as Rosenberg (1992, cited in Magner 1995, p. 326) puts it “a disease in some sense does not exist until we agree it exists by naming, perceiving and by responding to it”. They also argue since 19th-century naming has become central to both social and medical thought of framing disease. Consequently, the practice of medicine and clinical encounter take a new form.

The increase in a number of disorders from 106 in DSM-1 to 265 in DSM-V, and adding sub-types within the categories not only expands the category but also encompasses more people within its ambit. Redefining the criteria and lowering the threshold of diagnosis of the disorder is the new methodology of such compendiums as exemplified by the avoidant personality disorder, a form of shyness that constrains a person to socialize and merit to the diagnosis of such disorder (Magner1995, p. 326).

Certainly, it’s an attempt to quantify and homogenize the subjective feelings, thoughts, and actions where normal tribulations of life are diagnosed and are felt to be an expression of some disorder. Further, the shift to a revised diagnostic system greatly

impacts the relationship between patient characteristics and diagnosis they receive like homosexuality as a mental disorder was eliminated in DSM-III (Schulman and Hammer 1988, p. 543).

Generally, DSM applies a descriptive approach based on behavioral manifestations of the disorders. Moreover, to deliver an explicit differential diagnosis, diagnostic systems adopt a multi-axial approach to describe the relationship between various variables and disorders. DSM-II interpreted the significant relationship between social characteristics like income, education, minority status and mental disorders but their significant relationship disappeared with DSM-III explicitly framed on behavior criteria (Schulman and Hammer 1988, p.545).

Both ICD and DSM have adopted multi-axial and categorical²⁸ rather than a dimensional approach in formulating a diagnostic system. Such an approach is assumed to comprehensively describe illness complexities and capture a patient's whole clinical situation. Interestingly, in the evolution of ICD and DSM, one could observe different variables included or eliminated to establish standardized nosology that would enable the practitioner to assess the clinical condition of a patient and formulate treatment scheme. The whole clinical picture is drawn from the physical, psychosocial and social axes to formulate a diagnostic system which is always potentially improvable (Mezzich 1994, p. 61). Operationally, such diagnostic models ease the process of diagnosis as diagnostic categories assume disorders as static entities that are embodied invariably by patients (Wykes and Callard 2010, p. 301). Paradoxically, it seems that progressive medicine is falling back to classificatory spirit where knowledge of nosologies was fundamental to the practice of medicine.

Citing the Journal Psychotherapy and Psychosomatics, Murphy Paul (2006) alleged that more than half the experts who compiled the DSM -IV have ties with pharmaceutical industries. Its contributors received funds in the form of research funding, consultation fees or financial compensation from drug companies. It is also argued that

²⁸ Categorical approach is a way of classification of disorders into discrete categories that enable identification of symptoms of a patient on the basis of a category that encases the typical characteristics of the disorder. It helps in identifying the symptoms that merit to a disorder. Such an approach tries to establish universal validity of diagnosis. Dimensional approach classifies the disorders on the basis of quantification of symptoms and produces gradient scale rather categories of disorder. Dimensional diagnosis is not about whether a person is having disorder or not but a degree to which a particular symptom is present. It's also problematic as it blurs the boundaries of normal and pathological.

pharmaceutical interests in formulating the inclusion and exclusion criteria of mental disorders are pretexts to prescribe their profitable drugs (Paul 2006, para. 3). Such a counter-narrative prompts to ask the questions pertinent to diagnosis- how new disorders make way into or get eliminated from the diagnostic system? Who is taking the decision and how? These concerns demand to unpack the political economy of diagnosis and debunk simple perception of diagnosis as purely medical act.

Diagnostic Categories and Impact on Human Experiences

Diagnosis is simply an apparatus that distinguishes between normal and pathological experiences, mobilizes resources (treatment, etc.) and negotiates in a morally saturated situation (Pickersgill 2013, p. 1). It also shapes our understanding of health and disease. However, diagnosis is framed by various actors and institutions, and the same is the case with diagnostic texts. The advancement in the scientific enterprise, epidemiological needs, and other impulses keep diagnosis reinventing and to strive for comprehensive understanding of disorder democratize and in turn adopts various modulations. However, critics argue that it sets off a mechanism that shapes our perception to think of health and illness through the medical framework (Pickersgill 2013, p. 2).

Expansion of diagnostic categories or construction of new diagnosis encompass more number of people and prepares conditions suitable for pharmaceutical companies to market their drugs profitably. No doubt, in a great number of disorders medication does help in restoring the normal but the strategy of “off-label use²⁹” of medicants not only increases drug consumption but pushes towards institutionalization of diagnosis and subsequent medicalization. There are other factors also that push for expansion in diagnosis like want of instant gratification or to receive a name of suffering as comes as a sort of relief apart from entitlements. Further, there is a growing tendency among people to self-diagnose which reflects the impact of new diagnostic systems that reshape the ways in which individuals, as well as society, conceptualize health and disease (Wykes and Callard 2010, p. 302).

Wittingly or unwittingly, the diagnostic language adopted across the diagnostic system has co-produced the clinical encounter as through media and technology people get

²⁹ Use of drugs in a manner that is not approved for the condition. Like Prazosin which is used for nightmares though approved only for depression.

access to diagnosis and influence their diagnostic behavior and so on. The assimilation of medical terminology into the culture not only reframes the subjective experience but consolidate the reification of nosologies hardly resisted on the part of the practitioners (Banzato 2008, p. 155). Thus, it has become culturally acceptable to be diagnosed with some pathology like in case of baldness, infertility, etc. It's this reason that Grimes and Schulz (2013) claim that observational epidemiology creates false-alarms and pseudo-epidemics that spawn "chicken little syndrome" where everyone is apprehensive of being somehow ill and seek the help of medicine.

To provide a diagnosis to someone who would never experience the disorder in full scale transcend into what is called "false positives" not only inflicting biological and psychological harm but also social consequences like stigma etc. Further, the shift towards symptom-based assessment of a disorder blurs the distinction of ordinary deviation of human condition and disorder proper. More, importantly, the context and symptom relation have become irrelevant as meaning holds no place in diagnosis. Take an example of sadness and depression both are diagnosed as mental disorders in medical classification (Wykes and Callard 2010, p. 303).

To account a for such radical shift where medical establishment is a threat to health itself prompts to consider the sickening impact of diagnosis that Ivan Illich calls the rise of "iatrogenesis" and yields space for other forces to slide in (Illich 1975, p. 3). He describes iatrogenesis as the harm done by the doctor. Ivan Illich (1975) critical of technocentrism that projects a myth of enduring health, says technology has inflicted more harm on society through the creation of iatrogenic diseases, that is, diseases that would not have come about if the medical intervention had been proscribed. Paradoxically, medicine turns out to be its own antithesis or simply a sickening agent as progress in medicine has added more disease burden. No doubt medicine has effectively eliminated some diseases and treats many symptoms, but that does not mean modern medicine has become more beneficial to society. Moreover, improvement in health status is the outcome of different variables rather contemporary medical care as the natural history of diseases suggest (Illich 1975, p. 15) Thus, growing number of doctor-inflicted/iatrogenic diseases debunk the medical utopia where the disease would disappear and medicine as an institution wither away with medical progress.

Here, simple modulation of what Ivan Illich (1975) calls clinical iatrogenesis, therapeutic side-effects, would be adopted to conceptualize diagnosis as stepping stone towards iatrogenesis. Before that, it's important to delineate his conceptualization of such a phenomenon and then reconfigure iatrogenesis around the diagnosis. He argues that clinical iatrogenesis breeds social and cultural iatrogenesis subsequently, where more people become consumers and perceive health as a commodity that can be bought at the market. And in turn develops holistic resistance to what medicine was aspired to be (Illich 1975, p. 15). This phenomenon of Self-reinforcing negative loop that modern medicine contains is what Ivan Illich calls medical nemesis. It means medicine as an institution per se offers a resistance to remedy of an illness (Illich 1975, p. 20).

Social iatrogenesis designates the causal mechanism that impinges on health due to socio-economic changes brought out by the medicine as an institution. It deprives an individual of a healing agency as the milieu that endows individuals such an agency dissipates and remains no longer conducive to maintain health (Illich 1975, p. 23). Consequently, medicine as a moral force standardizes health care so that it has a monopoly over who is sick and what constitutes deviance. Lowering of capacity to tolerance of pain etc., creating new disorders and special social organization like hospitals, etc not only abolishes other forms of care but also right to self-care (Illich 1975, p. 34). It's at this level the subjective experience of the disorder is impelled to come to terms with a bureaucratic form of patient or else be labeled as deviance.

The greater proportion of budget meant for health is spent on cure and care of patient rather than on public health services, and Ivan Illich (1975) rightly says that most of the spending goes on buying similar things across the different countries. The entire global healthcare seeks modern exotic technologies to exterminate diseases, and it necessitates the practitioners to measure and diagnose through technology blunting the clinical acumen. Health becomes a commodity because more a society spends on medicine to save society, more it appears that health is locked somewhere that could be bought at the market (Illich 1975, p. 35).

Unlike other commodities drugs have a distinct consumption character as it's the instrumental consumer (doctor) who prescribes them to the ultimate consumer. Thus, medicine creates a vacuum first by appropriating individual agency of self-care and

then induces dependency on practitioners only to become prey to pharmaceutical invasion (Illich 1975, p. 36).

The expansion of cosmopolitan medicine gradually displaces the culturally existent forms of remedies, placebos, and rituals and inflicts more harm and conceptualizes body as a mechanical entity (Illich 1975, p. 36). Ivan Illich (1975) argues that the trend to consume drugs whether palliative drug or as a part of the diet in an ever-increasing quantum is a result of the general shift towards consumer society. Such a situation resembles a hospital where most of the people are made to believe as deviant and are “at risk” throughout the life and eventually convinces them to concede some agency to medicine (Illich 1975, p. 37).

As a result, a new form of ritualization of life intensively medicalized has emerged where life has become a sort of span that is shaped and organized by the medicine through routine check-ups and screening (Illich 1975, p. 38). It is evident by growing focus towards the preventive care. It is reflective of social iatrogenesis that redefines normality and more importantly medicalizes prevention. Consequently, the responsibility for health shifts onto individual and delinks larger factors that determine health.

In current times it's the prevention discourse that predominantly frames health and disease concepts. To this end, screening and molecular technologies promise to diagnose disorders at risk level and promoters of early diagnosis enumerate its immense benefits. However, Ivan Illich quotes recent studies that indicate no positive relationship between life expectancy and early diagnosis as state-of-the-art in medicine has fostered unsubstantiated symptoms. The asymptomatic disorders diagnosed through molecular technologies rather unleash adverse social, economic and political consequences apart from biological ones (Illich 1975, p. 40).

As more people are diagnosed as deviant from some desired norm, society becomes potentially sick, and the result is more medicalization and expansion of medical surveillance that could recognize such potentialities (Illich 1975, p. 41). The acceptability of such pre-disorder diagnosis is characteristic of morbid society as people believe it's better to be diagnosed-ill rather than labeled negatively as diagnosis authorizes to be sick (Illich 1975, p. 42). Once the diagnosis is established, therapeutics

follow either in the form of bringing them closer to the established norm or in the form of some special arrangement like hospitals, etc built to cater to their deviance. Inferentially, the iatrogenic patient is, thus, different from the traditional patient as he is not secluded from the productivity but very much remains engaged and among supposedly healthy (Illich 1975, p. 43).

The third dimension of medical iatrogenesis is the ultimate decimation of cultural ways of healing and impairs the capacity of the individual to make sense of suffering that is part of reality (Illich 1975, p. 44). The cultural embeddedness of suffering that is, subjective experience of pain fades into the medical codes emanating from the guardians of health and deprecates the cultivated sense of self-care and suffering. The prolific cosmopolitan medicine (medicalization) replaces individual and collective capacities to organize and plan sufferings, and in turn, medicine progressively colonizes the social space and expunges all the cultural art of health (Illich 1975, p. 45). Ivan Illich (1975) sees in such colonization of culture by medicine, a transition to the mechanical understanding of disease and health devoid of any inherent meaning and incessant demand for drugs, hospitals and other health services.

Medicalization of culture deprives suffering of its social context and produces it as the quantifiable mechanical response of an organic body, and consequently, the symptoms are categorized into physical, psychological and imagined one. Such a predicament places the doctor as the legitimate person to validate the authentic form of patient-hood that reduces the suffering of a disorder to just physical discomfort. Medicine embraces it through a diagnosis that eclipses the truth behind disorders and reproduces disorders as organic or behavioral deviances which is more convincing to people. It also convinces people for a therapeutic solution and displaces rebellion against a system that produced it at first place (Illich 1975, p. 47).

Ivan Illich laments the scientific dogmatism that blunts medicine of its curing art where the doctor has become sort of a quack and patient a medical category (Illich 1975, p. 50). Ivan Illich (1975), nonetheless, overlooked the subtleties that underlie the understanding of the medicalization of society. His narrative of medicalization undermines the diagnosis as an apparatus central to medicalization as well as de-medicalization. Because diagnosis is a collective activity where from patient to pharma-industry all engage in power relations and shape medicalization process. It's the

diagnosis that creates conditions of its possibility and more importantly, it offers medicalization scientific credence. Because diagnosis as what Eliot Mishler (1984) calls the voice of medicine defines and establishes deviance, that is, diagnosis gives coherence and legitimacy to illness and right to be sick. Once the illness is given a name, diagnosis mobilizes resources and authorizes medicine to regulate people (Brown 1995, p. 34).

Phil Brown (1995) proposed a model that describes the medicalization process somewhat similar to Conrad and Schneider's sequential model that would be delineated later. He says it's the diagnosis that proceeds from the experience of symptoms by the people who are central to the discovery of the disorder or any condition (Brown 1995, p. 37). However, in the case of iatrogenic and contested disorders, it's either the state that discovers the diagnosis or lay people usually through social movements (Brown 1995, p. 38). However, the lay configuration of diagnosis is more likely to be discarded because of its lay origin. In case of contested conditions, it's the social movements that are central to diagnosis discovery. Social movements, once a sufficient number of affected come together to form organizations, seek state or medical recognition of their conceptualization or diagnosis of the disorder. Similarly, some movements seek to recognize etiological factors state is reluctant to recognize and some other movements contest the medicalized narrative of conditions like childbirth, etc. (Brown 1995, p. 40).

However, the intricate relationship between diagnosis and medicalization could be recognized in its diverse forms. In some cases, diagnosis is accepted without any contestation like the common cold, etc. while in certain cases despite considered as non-medical and not accepted as a disorder yet biomedical definitions are applied like social anxiety disorder (extreme shyness). Its reflective of social control and professional expansionism (Brown 1995, p. 42). In other cases, like chronic fatigue, chronic pain, etc. labeling is demanded by the patients and other interest groups to recognize their sufferings. Here one could observe the convergence of interests of state and people but does not suggest there is a process of social control in it (Brown 1995, p. 43). There are also certain conditions that are widely accepted as medical in nature, but the state is in denial to recognize such diagnostic categories like environmental and occupational contamination disorders. There are also other categories of conditions that emerge because of screening technology and represent potentially medicalized

categories. The conditions are not directly designated as pathological but considered as predispositions to disorder (Brown 1995, p. 47).

Thus, the matrix of agents in cosmopolitan medicine that enables the discovery of diagnosis is pharmaceutical-industrial complex, biotechnology industry, and consumers themselves. Nonetheless, diagnosis, central to medicine and subsequent medicalization or de-medicalization, is politically charged apparatus and it's the discretion of state to recognize the diagnosis or not. However, Kaushik Sunder Rajan (2017) quite brilliantly elucidates that global pharma industry can tinker with the will of the state and make way for their profitable enterprises.

Though diagnosis is central to expansion or constriction of medicalization, in many cases, it's the availability of treatment or "off-label use" and medical technology that advance medicalization even before diagnosis could be formulated. It is exemplified by the screening of fetal growth that has led to a diagnosis of fetal stress, and logically most of the normal births end up through the cesarean process. Same is the case with menopause where because of the availability of synthetic estrogens; menopause has become estrogen deficiency syndrome (Brown 1995, p. 47). Before further delineating the relationship between diagnosis and its role in medicalization or de-medicalization, it's necessary to understand medicalization as a process aided by diagnosis as a classificatory tool. But one caution needs to be entered here; medicalization process is a broader concept where the diagnosis as a process enables or constricts its expansion.

The Relevance of Conceptual Constructs to Understand Medicine as an Institution

Its intrinsic to societies to establish certain norms and label any aberration to it. Subsequently, societies formulate mechanisms to control that deviance. However, as the societies moved towards civilization, to label deviance as crime became savage. New mechanisms were formulated to redefine certain aspects of deviance. Thus, effective tools for controlling behavior of individuals and groups come into existence like a disease as a social construct to humanize social control. It simultaneously created conditions for its pervasiveness (Broom and Woodward 1996, p. 358).

Sociologists have constructed different concepts to understand such a dynamic nature of medicine as an institute and its role in contemporary society. Zola (1983, cited in

Ballard and Elston 2005, p. 230) coined the term medicalization as a process where more and more of the everydayness of life comes under medical supervision and influence. He identified four dimensions of expanding the jurisdiction of medicine to define aspects of life processes. The multi-causal approach to disease allows medical gaze to percolate many new spaces and integrate them under medical supervision. However, in cosmopolitan medicine among many causes, it is the molecular and genetic level that is more relevant to understand disease and health. The second dimension of medicalization is the seeking of more authority over specializations and expansive usage of medicaments to treat various sorts of aberrations. Third, medicine keeps devising tools that allow it to have greater access to certain areas considered to be taboo and lastly, medicine appropriates what is normal for the good practice of life (Ballard and Elston 2005, p. 234).

In simple terms, medicalization is a process that defines any life condition in terms of medical language and comprehends the condition within the medical framework to intervene medically (Conrad 2008, p. 3). For any condition to be medicalized, it must be defined medically. Medicalization as a process is embedded in the social construction of what is medical rather than something discovered. Medicalization process starts with “giving name” through diagnostic categories which have defining-character (Blaxter 1978, p. 4). Medicalization is a very complicated process facilitated or contested by various agents like social movements, individuals, and macrostructures. The process of medicalization is visible through progressive expansion of medical categories on one side and substantial shift in tolerance of mild symptoms among people that are being progressively medicalized. It could be aided by the medical profession too, and more importantly, medicalization need not be accompanied by medical treatment (Blaxter 1978, p. 5). Thus, medicalization has a consequence of depoliticising sufferings and suppress any other intervention possible (Busfield 2017, p.760). Because, Zola (1983) also argues, medicine as an institution has become a repository of truth that could replace any other explanation. However, it could be said that it is de-facto diagnoses in medicine that is a repository of truth.

Here, one must differentiate between medicalization and medical colonization as later is enforced. It's this reason Conrad (2007) criticises Ivan Illich (1975) for considering medicalization as expropriation of problems through medical expansionism, that is, medicalization as doctor articulated process or what medical Illich calls medical

imperialism. Peter Conrad and Joseph Schneider (1998) suggested a sequential model to elucidate the medicalization process where a condition is first seen as a deviance from the norm. Second, it's defined in terms of medical perspective and some evidence might be offered. Third, various interest groups elaborate the severity and prevalence of deviance and push for a medical perspective to have gains of respective sorts. Fourth, legitimacy is sought on the part of the state to recognize already accepted deviance. Lastly, deviance is institutionalized and becomes a fact, and medical conceptualization hegemonizes the discourse.

But in contemporary times, the sequential progression is problematic as various forces like what Conrad (2007) calls as "engines of medicalization" create diagnostic categories that legitimize condition. Similarly, phenomena of "off-labelling" problematize the sequential model. Summarily, it's the pharmaceutical industry, potential patients (consumers of new pharma products) and modern technology that are driving the medicalization process (Conrad and Schneider 1992, p. 14). Thus, medicalization is a collective action where lay people are proactively participating in the medicalization process along with other forces.

Conrad (2007) argues that medicalization need not be absolute as some condition cannot be medicalized presently and some have been medicalized partially and some contested. So, there is no specific pathway that determines the degree of medicalization, but various agents ranging from individual to larger institutions converge to shape medicalization of a condition. Diagnosis is only one dimension of progressive medicalization process as Conrad (2007) argues, but it's the elasticity of diagnostic categories that reinforces medicalization effectively. In some case, de-medicalization also occurs as the condition is no longer defined in medical terms and need of medical intervention is obsolete. More importantly, some events are being re-medicalized even after de-medicalized like childbirth event, and it's this reason that few cases of de-medicalization are found as comparatively (Conrad 2007, p. 40).

On the question of gender, medicalization process is much visible among women as compared to men who are also now increasingly medicalized (Conrad 2007, p. 43). In some cases, like chronic fatigue syndrome, medicalization is in fact helpful to the patients as it recognizes and organizes their illness and in turn legitimizes their

suffering. Thus, medicalization is “two-edged sword” capable of improving the well-being as well as inflicting harm (Conrad 2007, p. 50).

Similarly, Complementary and alternative medicine (CAM), as the systems move towards professionalization, they possess certain aspects that support medicalization while some other aspects like use of minimal technology orient towards de-medicalization (Conrad and Schneider 1992, p. 15).

The shift towards medicalization, in general, could be attributed to the substantial changes that medical organization underwent since liberalization policies. The patronizing form of medicine has given way to a buyer-driven system where the patient is treated as consumer and doctors have conceded much authority to the management. Also, as the diagnosis expands beyond a clinical encounter, there is a race towards specialization, and the burgeoning medical division of labor apart from the invasion of pharmaceutical and insurance companies reproduce the entire medical institution. The assimilation of cutting-edge technology like genomics etc. with a hope to revolutionize health care also recast both the medical organization and clinical practice.

The position pharma and biotechnology industry has achieved because of their sheer economic and political power give them a free hand to advertise and sell their products both to doctors and consumers. Given the corporatized health care system, where medical products and health services are touted as the panacea to all sufferings spawn medical markets that promote consumer culture (Conrad 2007, p. 54). Pharmaceutical companies through media and practitioners are selling (pseudo) diseases and then offer drugs as a remedy. It's this paradoxical ability of such industrial complex that reframes and medicalizes normal human experiences (Conrad 2007, p. 60).

In recent decades, some disorders like binge eating, anorexia, skin picking, attention deficit hyperactivity disorder (ADHD) etc. have been recognized because of diagnosis either promoted by the individuals and advocacy groups or diagnostic systems themselves. That is, in part it is the symptom of self-medication and proactive demand by patients to medicalize life experiences and unwittingly, alter medical practices in very nuanced ways and helping “engines of medicalization” to harness potential market. Here, it needs to be mentioned that at scientific level diagnosis changes as the scientific paradigm shifts but at the society level, there are other factors to effect

change. That is, theoretically one can distinguish between diagnosis as process and category but not in practice.

Conrad (2007) illustrates the fluid character of diagnosis by highlighting the case of ADHD that has included adults now earlier considered largely as childhood related problem. Once a diagnostic category is established, its threshold is gradually expanded to become more inclusive and operates as one of the means of medicalization. In case of ADHD, an inclusion of inattention to existent hyperactivity criteria apart from stretching the age factor, advocacy groups and pharmaceutical company, work hand in glove as well as independently to define and market it as a life-long disorder and finally established by the DSM-IV (Conrad 2007, p. 70).

Medicalization process is also advanced by diagnosis seeking behavior like self-diagnosis informed by the information diffusion and self-labeling that bring a person to doctor to acknowledge diagnosis. However, the medicalization process need not necessarily involve only those disorders that are clinical in nature as exemplified by ADHD. Further, genetics as a new paradigm of diagnosis links disorders to genes, with ascending public and medical acceptability, immensely expands medicalization. Similarly, biomedical enhancements like human growth hormone to augment or enhance performance and cosmetic purposes broaden the scope of medicalization as enhancement transcends normal (Conrad and Potter 2004, p. 186).

However, enhancement is a culturally fraught notion. Biomedical enhancements can have a purpose to restore what is deemed normal socially and medically or as an improvement to a previous condition. While some enhancements are meant to restore the previous condition what Conrad categorizes as repair and some forms of it expand medicalization (Conrad and Potter, 2004). It is against this context case of organ replacement won't merit to enhancement. On the same principle, realigning body to one's identity is some form of repair (like gender change) although not same as the body's previous position. Similarly, enrichment in the form of meditation or nutritional supplements could lead to medicalization but not a medicalization process per se (Conrad and Potter 2004, p. 187). So, it implies that the medicalization process must strictly refer to the expansion of the medical framework and be distinguished from other phenomena.

Conrad and Potter (2004) illustrate medicalization process by examining the Human growth hormone synthesized by pharmaceutical companies, and the way it seeps into the life of children who are of short stature as being short is stigmatized in our societies. Moreover, it's also used as an anti-aging agent and as an enhancement of performance among athletes. In the future, it could be used as a prevention of short stature. If an enhancement reaches mass adoption, then intervention appears to be a necessity and such conditions offers a lucrative market for profit.

Medical intervention on the body in case of cosmetic surgeries, obesity, etc. has become possible because the obese body is presented as pathological and masking the inner self and to bring oneself closer to authentic, proper self; the body needs to be transformed (Conrad and Potter 2004, p. 188). Conrad and Potter (2004) define enhancement as a double temptation as both the purpose (say the increase in height, aesthetics, etc.) and medical intervention are supposed to be effective and rapid.

Thus, it's the collective work of Science, medicine, culture and other forces to first target sick people and then embraces non-sick people as substantiated by Prozac drug case. First, it was introduced to heal depression, but later it was touted as an elixir of wellbeing. Same could be the case with memory loss treatment like Alzheimer's that could be extended as a memory booster. It could be inferred then all medical interventions tend to be potential enhancements (Conrad and Potter 2004, p. 190). Thus, it reflects when the pharmaceutical industry makes a great deal of drugs available and exchanges information through media; life condition becomes a disease. Critics, however, see in this shift a change in the practice of biomedicine from healing bodies to the enhancement of bodies (Conrad and Potter 2004, p. 192).

Take an example of blood pressure and its conceptualization in medicine in Indian context. Practitioners in India follow mostly Joint National Committee guidelines, and some follow Indian guidelines on Hypertension (Hiremath et al. 2016). Conrad (2007) argues that blood pressure has been medicalized since the 20th century. The elevated blood pressure and its medicalization gradually progressed from its conceptualization as hypertension to screening at the organizational level and finally at diagnostic level by practitioner treating hypertension as a risk factor that needs pharmaceutical intervention (Conrad and Potter 2004, p. 193). The blood pressure reading 140/90 or above is considered as hypertension which is a risk factor for cardiovascular disease.

However, the pharmaceutical companies pushed for pre-hypertensive category-120/80 to increase the potential market for the hypertensive drug. In case of adults in India, a survey conducted by Hiermath and associates (2016) found that in practice follow lower levels as compared to the recommended. NFHS -4 data shows that with age the number of people with normal (120/80) level of blood pressure decrease while as pre-hypertensive (120-139/80-89) group shows a progressive increase. The number of people with normal blood pressure and are taking anti-hypertensive drugs have increased (GoI 2016). It shows how diagnostic expansion, serves the interest of pharma companies, undermine the underlying socio-economic risk factors and shift blame on an individual.

Medical diagnosis has some positive consequences as well. It defines the problem through the medical framework and entitles access to resources, reduces social stigma and can have many more benefits. But the real problem arises when human differences are pathologized. It's the logical outcome of a culture where health is a high-value asset, and it's this reason medicalization is not medical imperialism but an intricate process (Conrad 2007, p. 45).

Since neoliberal times medicine has seen paradigmatic changes. It is becoming more of a corporatized medicine and doctors conceding medical authority to rising managed care where cost matters and patients behave more like a consumer, be it health-seeking behavior or health insurance. New and developed areas of knowledge began to influence medicine apart from other dominant forces (Conrad 2007, p, 46). Among dominant forces pharmaceutical companies not only define norm but influence what is expected and acceptable to society directly through media. The serious implications of cutting-edge technology in medicine like genetics etc. is the individualization of problems, that is, technology disparages disease of its social underpinnings and locates the causal mechanism within the body.

The changes in the organization and practice of medicine since 1985 according to Clarke et al. (2003) have been the outcome of integration of science and technology. The techno-scientific³⁰ changes have intensified medicalization and have become

³⁰ Technoscience, term coined by Gilbert Hottois, suggests that science and technology are co-constructive and relational rather two separate fields. It also signifies that it's impossible to develop knowledge without technology and technology is embedded in science, that is, they are in compound unity.

complex, multidirectional and multisite. Clarke et al. (2003) conceptualized this transformation as bio-medicalization. The biomedicine³¹ because of biotechnology, molecular biology and other medical technologies, that is, techno-science innovations has reorganized medicine substantially (Clarke et al. 2003, p. 164). The techno-scientific innovations apart from the clinical innovations like new diagnostics, treatments, digital visualization, and genomics and other procedures and more importantly telemedicine are at the heart of expanding bio-medicalization. The extension of medical gaze into the realms of health itself apart from disease, injury, etc. and subsequent commodification of health is a defining feature of bio-medicalization (Clarke et al. 2003, p. 166).

The moral responsibility of health and management of illness through prevention, access to knowledge and consumption of appropriate medical goods and services has come upon an individual itself. The standards of embodiment no longer remain culture-bound as techno-science has unleashed the potentialities of the corporeal body beyond conventions. Consequently, techno-science has spawned new individual and collective identities like a high-risk individual, etc. Clarke and colleagues (2003) argue that the expanding bio-medicalization processes are emergent of dynamic politico-economic and sociocultural-biomedical sector. Reciprocally, incorporation of techno-science has recast the biomedicine sector itself. This historically situated sector has acquired a new social form, “Biomedical Techno-Service Complex, Inc³².” (Clarke et al. 2003, p. 170).

Biomedicine as a distinct culture conditions our pattern of interpreting, understanding and the ways to transform corporeality and lived experiences. Conceptually, one could situate changes in the sociocultural realm and politico-economic sector and then discern dimensions of bio-medicalizations but what informs their concept of bio-medicalization is co-constitution and simultaneity. Thus, conceptually bio-medicalization coproduces technosciences and new social forms within biomedicine and is reciprocally reconstituted. Clarke et al. (2003) theoretically, defines bio-medicalization as a historical process emergent of five interactive processes that operate at different levels to accomplish bio-medicalization and these processes are also reciprocally reproduced

³¹ Biomedicine signifies that techno-scientific practices of biological science are part of the clinical practice now.

³² It's a portmanteau of industrial complex coined by HealthPAC and “New world order, Inc.” coined by Haraway meaning the traditional notion of nature and culture has imploded.

over time. The shift from medicalization to bio-medicalization reflects the harnessing of potentialities of biological processes both human and non-human apart from the control over the external world (Clarke et al. 2003, p. 176).

Bio-medicalization process expands medicine as a social, cultural and scientific enterprise but its dominant sociocultural conceptualizations of medicine that frame people's conception of health and disease and draw them actively in its organization. Techno-scientific innovations normalize the medical intervention like in case of obesity, cosmetic surgeries to improve aesthetics, etc. and hence, expand the social and cultural aspects of medicalization (Clarke et al. 2003, p. 180). Bio-medicalization through new diagnostics, surveillance, elaboration of risk, and treatment procedures shape concepts of health and disease and moreover sets off clinical expansion. In turn, medical labor elaborates, and new social forms emerge. Consequently, differentiated "assemblages" in the form of spaces, persons, and techniques are required to provide healthcare to "risk groups" (Clarke et al. 2003, p. 184).

The inside-out transformation by bio-medicalization as against the expansion and control of medicalization draws individuals to administer themselves the innovations and interventions what Foucault calls "technologies of the self" (Clarke et al. 2003, p. 182). Bio-medicalization as it pervades more and more aspects of lived experience and shapes the experience of health and disease, new biomedicalised subjects and new identities emerge. It gives birth to biosociality, that is regrouping and interaction based on bio-identities (Clarke et al. 2003, p. 182).

The shift that marks bio-medicalization is the transformation of life and body itself be it genetically modified species, assisted reproductive technologies or organ transplant. The medical diagnosis as it has shifted to molecular and genetic order, risk and surveillance concerns precede health and disease concerns. Once risk is institutionalized, it becomes no longer necessary to have symptoms to be at risk as it redefines the "normal" and virtually everyone is assumed to be ill (Clarke et al. 2003, p. 189). Health no longer remains default state, but something to be achieved as different terms like health maintenance, healthy living or promotion, etc. imply. In such a situation, risk and surveillance reinforce each other as more screening means more risk management and correspondingly more demand for surveillance. The search for risk factors and related knowledge production becomes essential to medicine, and

active consumption of such knowledge by both consumers and producers expands bio-medicalization and contributes to the genesis of surveillance medicine (Armstrong 1995, p. 396).

The devolution to molecular level like proteins or to genetic level to understand disease and health has also coproduced pharmacogenomics, and it reflects a shift away from the search for healing properties of natural entities to computer-generated molecular and genetic properties (Clarke et al. 2003, p. 183). It has become possible because of mutual co-production of molecularization and computerization as reflected by the genesis of bioinformatics. Thus, biotechnological manipulations of genes or be it the quantification of biology by bioinformatics reflect the expansion of bio-medicalization.

Biomedicine as an organization of knowledge and technology producing domain apart from clinical application expands and transforms medicalization processes. However, bio-medicalization process to which techno-science is defining character does not imply techno-scientific determinism as social, cultural, other organizational forms and technoscience co-produce each other (Clarke et al. 2003, p. 184). It means social dynamics is intrinsic to techno-scientific innovations and materiality of techno-science is contingent on social as evident in different settings where there are constant negotiations between the people and bio-medicalization process to meet their needs. Thus, bio-medicalization process is furthered, contested and transformed at each level of organization of biomedicine (Clarke et al. 2003, p. 186).

The corporatized and privatized medical research (clinical trials), services and goods, and because of techno-scientific innovations not only further bio-medicalization but conditions our thinking and action about life and body in biomedical terms (Clarke et al. 2003, p. 187). Clarke et al. (2003) argue that theoretical construct “medical-industrial complex” could be replaced by the new theoretical concept “Biomedical Techno-Service complex, Inc. representing the corporatized and privatized (rather than state-sponsored) research, products, and services. Because of their enormous economic power, these transnational corporates appropriate more areas of health and provide private care and management.

The drastic consequences of it are the porous and blurred demarcation between what constitutes public and private, profit and non-profit. Its exemplified by the case of RSBY, state-run health insurance programme, that offers health insurance for poor

people. Over the time the recipients have been moved out of the public/non-profit hospitals to private health facilities and thus, effectively privatizing social health programmes. Paradoxically, under the pressure of biomedical conglomerates, the state is socializing the costs on medical research by offering the start-ups and simultaneously, allowing them to sell their commodified good and services for profit.

India's healthcare sector is contributing to 6% of the country's GDP, and according to NASSCOM Start-up ecosystem report 2015, India is a leading start-up base worldwide and of about 6-8% are in health sector only (HEALS report, 2016). Drug discovery and medical device inventions are major areas of foreign investment. Pharmaceutical and drug sector followed by diagnostic sector has attracted much of the foreign direct investment. Interestingly, the Indian state has launched initiatives like start-up India and digital- India to promote start-ups and boost health care sector apart from providing infrastructure and other exemptions. Further, the recent Pfizer and IIT Delhi incubation accelerator innovation suggest the industry-academy collaboration is also taking roots in India (HEAL report 2016). The industry-academy collaboration is in part undertaken to supplant the fund- cut by the state and such collaboration, in turn, mandates the academic institutes to carry on extensive field trials for new drugs.

Its argued that the interpretive categories like medicalization and bio-medicalization are insufficient to explain the character of medicine in current times. As the role of pharmaceuticals has increased in the life of people, it's the process of "pharmaceuticalisation" that is claimed to describe the contemporary position of medicine properly (Abraham 2010, p. 603). Such an argument frames drug industry as an engine of medical research. Apart from this, through media, the pharmaceutical industry directly advances their products to the public or indirectly through gatekeepers of medicine.

Abraham and other scholars like William and Gabe defined pharmaceuticalisation as a process of deeming social, physical or behavioral conditions as pharmaceutical matters and such conditions need treatment in the form of drugs (Abraham 2010, p. 726). It implies that drugs have life-saving properties and projects them as divine entities.

Abraham (2010) argues that pharmaceuticalisation should not be treated as a subset of medicalization as pharmaceuticalisation can take place without the medicalization process as exemplified by the lifestyle drugs. Because it undermines the authority of

the doctor, the de-medicalization process does not necessarily inhibit pharmaceutical expansion. He further argues that whether its bio-medicalization or medicalization, teleological understanding in the form of expansion and increased use of pharmaceuticals inform their theoretical constructs (Abraham 2010, p. 600). Such an expansionist argument conceptualizes the patient as a consumer craving for pharmaceuticals motivated by sufferings and under the influence of drug marketing practices. However, Abraham (2010) conflates diagnosis to medicalization and assumes pharmaceuticalisation as opting for drugs instead of other therapeutics.

Pharmaceuticalisation is not merely a growing presence of drugs in society as would bio-medicalism thesis present. The bio-medicalism thesis claims that the pervasive progress of biomedicine is because of its capacity to treat new and established illnesses through drugs (Abraham 2010, p. 601). It has a scientific consistency that gives it a unique character to fulfill health needs. However, it's a weak explanatory factor because the significant expansion of pharmaceuticalisation is the outcome of many drivers rather than the therapeutic advantage of biomedicine. Abraham (2010) argues that pharmaceuticalisation should be described by reference to five biosociological explanatory factors. These driving factors compete and interact with each other. Theoretically, the competing factors: biomedicalism, medicalization, drug industry promotion and marketing, consumerism and ideology of state contribute in growth or decline of pharmaceuticalisation (Abraham 2010, p. 608).

Each factor because of their competing nature determines the character of pharmaceuticalisation. Suppose if the biomedicalism thesis is more plausible, it means therapeutic diffusion has been a result of medical drugs satisfying health needs. Similarly, if other factors are more plausible than a biomedicalism thesis, one could relate expansion of pharmaceuticalisation to commercial interests, pseudo-expectations and other reasons rather than health needs (Abraham 2010, p. 615). Pharmaceuticalisation can also present itself in the form of enhancements, but for theoretical purposes, it should be drugs produced by the pharma companies that it must limit to. Otherwise, it would be expansive and include addictive substances too (Abraham 2010, p. 620).

It could be argued that all the conceptual frameworks employed so far, its the influence of pharmaceutical companies, alongside the emergence of active consumers, that has

become significant in defining the notion of health and disease. It has become a deep-seated conviction that medicine because of techno-science has the cosmic capacity to diagnose and deliver health needs unmet earlier. Abraham (2010) offers empirical evidence that problematizes the biomedicalism thesis by examining the pharmaceutical innovations that lie at the heart of expanding pharma-industry. The new molecular entities, patented, brought in the market have no significant therapeutic efficiency than the replaced ones and the efficacy of new drugs is on the decline. More importantly what has accelerated the expansions of drugs is the change in regulation policies of the state that has dropped the threshold of standards (Light and Lexchin, 2012). It's nowhere more evident than in the field of antibiotics where the growing number of infectious diseases resistant to antibiotics has remained pharmaceutically deprived reads the WHO report (WHO 2004).

When pharmaceutical companies advance their drugs under the garb of satisfying health needs of people assumed to be competent consumers is antithetical to public health ethos as health needs are dislocated and poorly expressed in the market model (Abraham 2010, p. 620).

Joan Busfield (2017) reassesses the concept of medicalization and challenges the analytical significance of bio-medicalization and pharmaceuticalisation concepts. He argues that Clarke et al. (2003) sees the substantial transformation in medicine around 1985 but such outright claim is disputable as different labels used to characterize the changing eras are not justifiable (Busfield 2017, p. 760). Similarly, pharmaceuticalisation does emphasize the growing interest of pharmaceutical industries in defining the normativity, but it does not necessitate a parallel term.

Busfield (2017) contends that analytical value of the term medicalization is still valid as a medical intervention is percolating into all aspects of life. It still emphasizes the multi-causality of interests and it is the network of actors that effect medicalization process. Therefore, it casts wide range of consequences in the form of transformation of subjectivity and behavior (Busfield 2017, p. 764).

Rose (2007) criticised the concept of medicalization arguing it has no analytical value as it suggests that the expansion of medicine is illegitimate and medicine annexes illegitimately partly or completely the processes of life. Medicine is more than the diagnosis and treatment of an illness, that is, it has reproduced us into a creature we are.

Medicine has blurred the distinction between natural and cultural and we are becoming more and more hybrids. The passivity of consumers that medicalization implies is problematic because modern marketing strategies consider consumer a person to be known in detail and formulate products in consonance to desires rather than create pseudo-needs (Rose 2007, pp. 100-110).

However, medicalization can occur only when subjects have been interpellated through various pedagogies or convinced through diffusion of diagnosis and technology. More importantly, medicine actively shapes our identity, our relationship with others and thus individuals play a greater role in spreading the diagnosis itself. So, the concept of medicalization does not answer the larger heterogeneous developments that reshape our habitus and makes conditions suitable for such mutations. No doubt, the defined conceptual framework is still relevant to articulate complex medical form of life, but given the global forces like pharmaceutical capital is emerging to be a dominant force that defines our culture of health.

The Notion of Health and Disease: Role of Pharma-Industry

Modern societies seem to live in a manner where risk is the factor we organize around our relationships. It's this reason there is the emergence of new sort of notion of health, that is, to be normal is to be aware of symptoms and health "risk-factors" that are always already there. Dumit argues in the same vein that to be normal is to be insecure, that is, subjectively one could feel healthy and normal, but it's the immanent "risk" that one must worry about (Dumit 2012, p. 12). He argues that in contemporary society particularly America, health is dogged by the double insecurity, that is, the risk is always already there, and we never know enough what to do (Dumit 2012, p. 14). It implies a paradoxical situation where more screening to prevent risk factors leads to more apprehensions of risk factors.

Perhaps, it echoes like Ulrich Beck's theory of risk society where risk immanent to contemporary society is created by the development of science and technology (Beck 1992). So, it's the notion of risk that informs the concept of health in contemporary times and makes conditions possible for ever-increasing expansion of screening, treatment, and consumption of drugs.

In the case of India, pharmaceutical consumption per capita is still low. It is around 8-12 times lower than the United States of America and Japan. The domestic pharmaceutical market is growing slowly at the pace of 5-7 %, but by 2030 it would be among the top three pharma markets (FICCI report, 2017). Dumit (2012) says we live in such a helpless situation where new information constantly invalidates the earlier findings and tells us we are at high risk now. The drugs available have such and such side effects, and the worst is we are being told the food we like now could be carcinogenic. Uncertainty and ambiguity are all that we have the more we unravel the complexities of the universe with astonishing technology. Dumit (2012) argues that fifty years ago, cholesterol was never considered to be a risk factor but as the concept of “risk factor” emerged and large-scale prospective clinical researches, severed the notion of healthy and normal along with other factors.

The shift to statistically informed notion of health and disease since 1950’s produced a notion of the population at risk as exemplified by the evidence-based research on smoking, lung cancer and mortality nexus (Dumit 2012, p. 18). what it did effectively was the shift from prevention based mechanism to risk-based intervention. It was the time when biomarkers like cholesterol, blood pressure became indicators of normal and pathological conditions (Dumit 2012, p. 20). It was also the time when a new form of research, randomized control trial emerged and achieved swiftly a position of an objective test.

With many advantages to it, like measuring the efficacy of drugs, randomized trials inaugurated statistical medicine where it’s the results of trials rather the experience of doctor and patient that would determine efficacy (Dumit 2012, p. 20). The pharmaceutical industry and randomized trial nexus aptly capture the capitalization on the discourse of “risk factor” and production of potential market by prescribing drugs for preventing risk factors prior to the conditions. It could be said then the pharmaceutical industry found a diagnosis that would expand its market (Dumit 2012, p. 21).

Dumit argues that trials and pharma companies are in a mutually inclusive relationship to expand the market for drugs (Dumit 2012, p. 22). Clinical trials extend pharma products a legal dimension necessary for marketing, and it’s the reason pharma companies come up with a range of drugs to maintain their market base. Pharma

industries invest hugely in medical trials particularly in chronic disease categories as they are sustained markets than an acute one. So, risk factors, clinical trials, and pharmaceutical industries interact in such a way that it seems body is inherently ill and to be healthy or normal which is a transitory state, one requires medical intervention constantly (Dumit 2012, p. 28).

The enormous economic and political power that pharma-industries have accumulated and control over information production through clinical-trials influence the state policy to allow, to lesser or greater extent, pharmaceutical drugs space in domestic drug market (Dumit 2012, p. 30). It helps drug companies to make profit, and in turn, the State shifts economic burden of research on them. It's the predominant reason that number of diseases are now considered as chronic, and risk factors elevated to a status of the disease.

Such a predicament implies a paradigm shift where people are essentially ill, unlike earlier times when it was considered that people are healthy and illness is a transitory condition (Dumit 2012, p. 32). In part, this sort of popular perception is shaped through direct advertisement, and awareness campaigns vigorously carried out by the pharmaceutical companies. Suppose, if the magnitude of some property of a body increases and is considered as "risk factor" amounts to sickness and to manage physiochemistry of the body within the permissible limits gives a sense of one health (Dumit 2012, p. 38). Such a quandary homogenizes the plural experience of health and disease. Moreover, the risk is being treated as a disease for which lifelong drugs are prescribed to reduce risk.

Dumit (2012) remarks that there is a transition in the notion of health from earlier clinical understanding where individual symptoms were diagnosed and treated to restore normal to mass health mode (risk factor paradigm). With this shift, the presence of risk factors detected through diagnostic technology and without clinical manifestation allows doctors to prescribe medicine to reduce impact.

Thus, a person unlike typical classical patient is neither ill nor healthy but only at risk. That is, health and disease have become a variation of risk where treatment is essential to minimize risk and well-being defined on the information collected through clinical trials (Dumit 2012, p. 39). Thus, health and illness no longer remain a state to be felt but as relative categories, that is, one should take as a responsible person drugs to

prevent the onset of disease. Thus, a reinvented form of prevention dominates the discourse of health and disease and therefore, diagnosis of the doctor becomes secondary as its pharmaceutical researchers through the clinical trials that define well-being (Dumit 2012, p. 40). It's in this situation of ever-increasing diagnosis and consumption of drugs; one could observe the rise of ambiguous and uncertain notion of health and illness.

However, as disease and health become epistemic in nature, clinical trials constantly revise them both and offers a new treatment that consumer must remain informed about. The conflation of risk with disease/symptom incessantly advances medication to reduce the level of risk. Dumit calls this surplus health where health is an outcome of medication (Dumit 2012, p. 42). Dumit defines surplus health as the capacity to add medication to our life by lowering the level of risk required to be at risk. In another way, health is an accumulation brought out by biomedical experimentation and consumption of drugs (Dumit 2012, p. 43). However, pharmaceutical companies influence the biomedical threshold of risk and constantly lowered to encompass more people. Thus, health becomes a potential value created by pharmaceutical labor (clinical trials and drugs) and appropriated by capital and thus alienated from the body Dumit 2012, p. 44).

The pharmaceutical approach applied by Dumit (2012) to understand the changing contours of medicine does not imply any imposition or some sort of conspiracy as the scientific idea becomes established, it generates the way the world is perceived. It becomes a force of conviction. However, as most of the drugs are produced for profit first, and health is only incidental, such a predicament prompts to consider the fundamental contradictions systemic to medicine now (Dumit 2012, p. 50). Further, pharmaceutical companies are indisputable major stakeholders in investing in medical research and developing new drugs but simultaneously benefit from the intellectual property rights on the molecules they developed. Moreover, the numbers of drugs that are entering the market, only a few of them present real therapeutic benefits. All these issues have only lead to an upsurge in the price of medicines. The persistent rise in prices of medicines and diagnostic technology is one such area that is jeopardizing the priorities of public health and its role in fulfilling the health needs of people.

Conclusion

Traditionally, the clinical encounter would be considered as visiting doctor and seek diagnosis once a person feels ill or have symptoms beyond experienced normal. However, since the past half century with the rise of risk-factor epidemiology and molecular or more recent genetic concept of life and associated phenomena, we have witnessed new images of health and illness is promoted in public space. We are being said that we are all at risk and differing only in degrees. One could say we healthy-ill all the time, such a paradoxical situation. And this has resulted in a constant demand for health and people as chronic-consumers of drugs. The expansion of drugs finds its truth in clinical-trial results and other social forces that convince people to take medicine as a sort of health per se. However, how the local and global impulse work in tandem with each other offers a rich insight into whether it is expansion of medical authority or drugs. The way people themselves are contributing to expansion of pharmaceutical intervention needs to be analysed also.

In the next chapter, the genesis and expansion of diagnostics and related consequences in India context would be delineated. Indian case is peculiar because it is considered as the hub of the generic drug industry, the source of affordable drugs and homes one of the world's poorest population.

Fourth Chapter

Diagnosis in Medicine: A case of India

Introduction

In India, cosmopolitan medicine was introduced by the colonial administration and European individuals and is commonly known as allopathy. Over the years it dominated the healthcare practices in part because of immediate curative and preventive capabilities and other reason being the support provided by state to it. However, as Bhattacharyya mentions, it was never monolithic in practice (Bhattacharyya, n.d.). Different systems of medicine like Ayurveda, Unani etc influenced its practice. The existence of these systems and their influence, however, changed over the time.

Kaushik sunder Rajan (2017) traces these changes to legislative amendments that harmonised pharmaceutical laws of India with global pharma Industries. Post- TRIPS (Trade- Related International Property Rights Agreement) era, Indian state allowed amendments to its pharmaceutical statutes with the intent to bring its pharmaceutical industry on par with World Health Organisation patent laws. He showed that it's the local and nationally located small pharmaceutical companies that influence state regulations and convince public to their advantage (Rajan 2017, p. 18). More importantly, the way pharmaceutical industries in India appropriate embodied and subjective state of well-being and transform and grow it into a value, lays conditions suitable for macro-forces to operate. However, to appropriate health and to constitute it in relation to one's advantage there are mechanisms that touch down deep and materialise it. The essential instrument to achieve such ends is diagnosis.

Diagnosis in cosmopolitan medicine is defined as an act of organizing subjective symptoms into a coherent pathophysiological condition- disease, with a predictable course of development. It's a pursuit of organisation and explanation, through external support, of what's wrong with my body. It's an act of separating imagined thoughts about subjective symptoms from the real (clinical) and psychological from the physical. Diagnosis plays an important role in understanding one's illness, health and gives professional distinction to doctor. However, to consider a condition as a disease, a

frame is constructed to fathom and distinguish it from other conditions. Take an example of dementia and Alzheimer's disorder, what distinguishes them is age factor.

Diagnosis as a prerequisite for treatment etc. gives legitimacy to an illness and an access to resources but it could stigmatise too. More importantly, it gives legitimacy (authority) to practitioner and medicine as an institution. In simple terms, diagnosis is what society considers as pathological and draws virtual boundaries between normal and pathological. Nonetheless, such a clinical picture of diagnosis hides the social context, that is, different interests that converge into the making of diagnosis. Diagnostic frames are the construct that embody social, political, cultural, biological and technological aspects and more importantly lived experiences together. So, they don't exist ontologically (Hunter, 1991). New technologies, commercial interests, lay people movements and will of state etc all identify, define and efface earlier diagnostic categories. A case of homosexuality substantiates this dynamic of diagnostic system.

In case of medically undiagnosed symptoms or illnesses where medical diagnosis is absent or is a contested diagnosis, reveals explicitly the inherent tension in the diagnostic process. Thus, a frame is not simply constructed out of medical vantage point but economic, political and social interests also shape an existence of the disease. Diagnosis being central to the practice of medicine is embedded within the public health as it's the epidemiological inquiry that in part informs diagnosis what Foucault (1963) calls tertiary spatialization.

Diagnostic categories are given existence outside medicine too what Peter Conrad (2005) calls as "engines" or non-medical forces that promote and produce diagnostic categories be it baldness or sexuality related issues. It is one of the reasons, sociology of diagnosis advances a critical claim that modern clinical diagnosis is more than the simple classification of our maladies. Diagnosis as a way of knowing, that is, diagnosis as an epistemology informs the conceptualization of this chapter.

Diagnostic categories, however, change across time and space and is reflected in the changing notions of diseases and health. So, as an archive of both present and past of a disease, provides an insight into the changing contours of medicine and conceptions of health and disease that society have had. Thus, this chapter sees diagnosis as a construct which is historically variable and contested.

Historically, it was believed that disease and health are dual categories and balance of humors determines the condition. Disease categories were not assumed as distinct and it was considered that diseases morph into one another. However, disease categories had heuristic purpose. It was one of the reasons that care shifted from hospital to family, apart from economic reasons, to maintain purity of disease. But, with the advent of clinical gaze the notion of disease descended from abstract nosologies to the very geometry and volumes of the living body, distinct disease categories emerged; aetiology and mechanical form of understanding became essential to practice of medicine. Such a diagnostic shift reorganised medicine in total.

Diagnosis became a way of understanding what is happening to the pathological body physiochemically. The normal and the pathological became embodied quantitative variations of each other and purpose of medicine was to restore the norm. Diagnosis evolved because of changing concepts, paradigm shifts and ontological turns, in life sciences etc since nineteenth century. The aetiology be it in the form of biotic organisms like bacteria etc. or the current genetic/molecular concepts became essential to concept of disease.

Though an aetiology, which is embedded in a diagnosis, produces a conceptualisation of disease in a particular way and as Tuchman (2011) aptly in her article “history of diabetes” shows a shift from having diabetes to becoming a diabetic. It could blame an individual or other structure (Tuchman, 2011pp24-33). So, it becomes evident that conceptualisation of disease is very much contingent. It’s this reason that disease regime anchored in culture, space and history frames an illness narrative.

This chapter conceptualises diagnosis as social, political and economic act having social, personal and political implications. In general diagnosis has transformative power and is contingent. It is more than simple explication of medical information, a symbolic act (Jutel 2011 pp 1-3). One must not get an impression that diagnosis labels conditions which are not real but what social genesis of diagnosis implies is the processes that precede before a disease is named. Take a case of obesity or farmer suicide. Before being considered as diseases, medicine and society must come to terms in identifying them as medical problems.

From visual technologies to biomarkers, technology identifies and establishes disease. So, diagnostic technologies prompt us to think about what it means to be healthy as the

categories of “pre-” where a person no longer needs to be symptomatic have emerged. Such diagnostic categories reconfigure the typical understanding of clinical encounter and doctor-patient relationship apart from notion of what constitutes disease. Treatment of risk factor has altered the notion of prevention. The elaborated division of medical labour has not only realigned clinical decision but reconfigured medical space too. The binary of clinic and laboratory has become problematic too. Such a contingency has remarkably changed the way practitioners diagnose.

Further, diagnostic processes vary from formal diagnostic systems as practitioners put forth their own understanding of disease too which could be informed by their experience (clinical acumen) and other systems of medicine. Torsten (2016) calls this diagnostic reasoning “local spectrum of normality” where practitioner incorporates local understanding of disease and negotiated information sources (Torsten, 2016 pp17). Such a practice is more pronounced in case of chronic illnesses. Thus, doctor in an actual clinical situation puts forth variety of strategies to arrive at a diagnosis.

Given the diverse cultural and socio-economic differentiation of Indian society, it would be interesting to understand the social framing of diagnosis and its relation to construction of disease, health and embodiment. How changing technologies and commercial interests, media-pharmaceutical-industrial complex, disseminate diagnostic information, sell their drugs and socialise people to self-diagnosis? What are consequences of such changes on doctor-patient relationship, lived experience of illness and purpose of clinical encounter? How medical decisions are taken in a clinical encounter because of emergence of informed patient in information society? How health movements and diagnostic contestations shape disease conceptualisation? Also, as Information and communication technologies are having much influence on everyday experience of people of sub-continent and is trusted with future of health care, how it is shaping diagnosis and clinical encounter and doctor-patient relationship would be another dimension. These are concerns that outline the purpose of this chapter.

Indian context offers an interesting case given its pluralistic system of medicine and hub of generic medicine. The multiple genres of medical knowledge within each system and among various forms of medicine that intersect both lay and expert practices, prompt to ask whether they give rise to different concept of disease and health. If yes, then whether pluralistic system offer better understanding than cosmopolitan. Thus,

sociology of diagnosis could offer an analytical understanding of what goes in making of Indian public health diagnostically and unpacking the play of various interests that influence the production of diagnosis and thereby priorities and goals of public health.

The Indian Scenario

No doubt remarkable progress has been achieved in economic development, improvement in nutritional status and access to advancing technology driven health care. But incidence and prevalence of both communicable and non-communicable diseases are on rise throughout world. As the underlying factors that directly or indirectly impact health proliferate, there is seen a transition in the health profile of countries.

In case of India, since independence substantial improvements in child and maternal mortality rates, reduction in quantum of absolute hunger and access to health care has significantly contributed in the reduction of disease burden. However, decline in communicable diseases has been accompanied by gradual rise in the prevalence and incidence of non-communicable diseases. The epidemiological transition to chronic non-communicable diseases like Cardiovascular diseases, diabetes and cancers and mental disorders account for more than half of the total mortality burden. The statistics provided by the national programme for prevention and control of cancer, diabetes, cardiovascular diseases and stroke show proportion of diagnosis of diabetes and hypertension as 8.52% and 10.91% out of the total patients who visited the point-of-care (GoI 2017, p. 79).

Further, its projected that the prevalence of associated metabolic risk factors like obesity, cholesterol, raised glucose and blood pressure levels both among men and women is likely to increase. In the years 2010-2014, the prevalence of obesity and cholesterol has increased by 22%, while the prevalence of raised blood pressure has increased by 10% in the same time span (WHO 2014). Behavioural risk factors and metabolic risk factors are assumed to be the significant causes of these diseases.

WHO's global status report on non-communicable diseases says that 80% of premature heart diseases, diabetes type-II and 40% of cancers are preventable if measures to reduce risk factors are undertaken. Apart from risk factorial measures, access to medical intervention could prevent disabilities and deaths as the report mentions (WHO 2010).

Another official annual, National Family Health Survey, in its fourth edition highlights key findings and one of the new risk factors included is hypertension and other related categories. The survey finds that 11% of women and 15% of men in the age group 15-49 have hypertension and 30% of women and 43% of men in the age group of 15-49 are pre-hypertensive. Further, it is mentioned that more than 1% of both men and women take anti-hypertensive medicine despite having normal blood pressure (GoI 2017, pp. 420-423).

The categorisation of normal, pre-hypertensive and three stages of hypertensive are in congruence to WHO guidelines. No doubt, the rise is statistically plausible and incessant sophistication in medical thought is attributed to effective estimation of prevalence and incidence of diseases or some would say the burgeoning burden is rooted in the medical over-diagnosis.

However, the explanation of such changes could be drawn from the changing concepts of pathology, physiology and aetiology and therapy, that is, the way in which disease is looked upon. The quest for ultimate concepts of disease is central to diagnosis and its diagnosis that informs medical practice and produces medical knowledge. Diagnosis organises illness, gives name to it, legitimises it and offers treatment apart from predicting outcomes. Diagnosis explains the clinical narrative of a disease entity, that is, history, prognosis and its mechanism and it's the purpose of diagnosis to locate or frame an individual along such a narrative (Rosenberg 2002, p. 245). More importantly, modern diagnosis which is technology driven has altered the classical form of medical encounter and relocated the spatial configuration of clinical encounter from home to laboratories etc and supplanted the subjective narrative with the clinical or molecular narrative.

Hence diagnostic technology has reconfigured diagnosis and medical practice itself. However, modern diagnosis has developed alongside much contestations, invalidations and disappointments besides unexplained categories. It has become a process of political negotiations among various stakeholders and hence, diagnosis at a micro-level, doctor-patient interaction level, is not purely a medical act but an outcome of complex of forces. So, sociology of diagnosis demands that we need to explore how diagnosis is rendered in a clinical encounter and how medical practices from historicity have changed drastically.

What is important to explore is the realignment of clinical encounter and medical practice as diagnosis is carried out at court rooms, laboratories, cyberspace and other sites. These explorations become pertinent because to receive diagnosis has an impact on well-being and health of the person and changing diagnostic process has impact on disease itself. Thus, if a diagnostic practice changes, simultaneously the notion of a disease undergoes change and disease could merit an epidemic and in this sense diagnosis is performative, that is, diagnosis changes the very phenomenon it describes (McGann and Hutson, 2011 pp xxv).

In the wake of epidemiological transition and rapidly increasing burden of diseases that India is witnessing, its epidemiological burden, economic burden and humanistic burden aspects of disease burden that are much highlighted (Zhao et al. 2013 pp 153). The estimation of prevalence, incidence, mortality and morbidity, although important they are, inform the decision making and other areas of significance like diagnostics remains under-represented.

Kamalakannan et al. (2017) did a systematic review of epidemiological studies on stroke and suggested that investment on population-based epidemiological studies would lead to better preventive measure (Kamalakannan et al. 2017). Similarly, Thakur et al. highlighted the economic and social impact of Non-communicable disease. From out-of-pocket expenditure to budgetary allocation, huge amount of resources are divested into health services. NCD's account for highest economic burden (5-10 % of GDP) and hamper economic development (Thakur et al. 2011).

However, one needs to look beyond prevalence and incidence phenomena to understand the diagnosis as process and category. It is the understanding of the concepts of health, disease and illness informed by diagnosis that offers rich insight and designates diagnosis more than mere clinical act. Hence, a concept of social diagnosis has emerged that considers larger social, political and temporal forces and combines social and medical uncertainties (Brown et al. 2011, p. 939).

Social diagnosis conceptualises diagnosis as collective act of social, economic, political and cultural factors and diagnosis as a process involves range of actors from practitioners to lay people. To gain an insight of the changing contours of diagnostic practices in India and its implications on public health, it would be gainful to review research studies published in scientific journals. The analysis would show how in Indian

context diagnosis is related to practice of medicine and what medical and non-medical factors shape diagnostic categories and processes.

Search Strategy and its Findings

To do that, a simple review-based study with an objective of exploring the published research on diagnosis in India was done. The exploring strategy involved search on electronic document retrieval systems like Google scholar, ScienceDirect, Global Health, JSTOR, PubMed and Springer Link. Journals like Sociological Bulletin, History of Psychiatry and Contribution to Indian sociology journals were also searched. Relevant research papers of some purposively selected ³³Indian medical sociologists were also searched.

Time frame of 1975-2017 was set and the articles retrieved were analysed. However, search of articles remained limited as after certain number of articles, almost one hundred articles on an average, only irrelevant articles started to fetch. The time frame was set with reference to Phil Brown's (1990) first call for sociology of diagnosis.

A Boolean and non-Boolean search of articles published across the mentioned electronic literature databases was carried out using certain key words like sociology, diagnosis, India, concepts, change, self-diagnosis, technology and dynamics to seek matches in the titles. The reference list of the retrieved and the academic works of the selected Indian medical sociologists were read and screened to identify a set of relevant articles. This was not a systematic review, in its strict sense, but a structured form of searching and review was done.

The Results of the Search were Revealing

Broadly, the fifty relevant articles retrieved were mostly related to diagnosis as a process and few reflected on genesis of diagnostic categories. Issues of Diagnostic behaviour and barriers to medical access were the major concerns that captured the research imagination. It was found that much of the research work emanated from the fields of public health, social demography and epidemiology.

³³ Indian sociologists like Prof V. Sujatha, Prof Purendra prasad, Prof Aneeta A. Minocha and Prof Harish Naraindas and Dr Amiya Das were identified based on the discussions with supervisor and screening of ICSSR published surveys in sociology and Anthropology.

Given the prevailing situation of public health services in India and disproportional influence of mechanistic conceptions of health and disease, much of research work focuses on either aetiology of diseases or barriers in the form of individual delays and health system delays to effective diagnosis (Ganesh et al. 2015). One article citing the national survey data on hypertension concluded that lack of effective diagnostics is the reason for not capturing the proper prevalence of hypertension and its consequences (Moser et al. 2014). Similarly, Mallath et al. (2014) argues that the growing burden of cancer in India is partly because of unequal access to health care, low rates of early detection and most importantly low socio-economic status.

However, it's the diagnosis as the construct that enables one to distinguish one condition from others and establish its existence. It acts as the heuristic tool to assess problems and guide public health policy. It is the existence of diagnosis that informs the state of any public health issue. However, diagnosis is a social, economic and political act per se. The way diagnosis is constituted frames the existence of a condition. Diagnosis is central to conception of disease is substantiated by study on fever epidemics in Kerala by Mathew George (2010).

The study shows that it's the establishment of diagnosis that transforms fever as a symptom to disease. He argued that two set of principles help in its institutionalisation. One is network of actors related to medicine including lay people and the other is the clinic. This study also shows diversity in practice of medicine within allopathic medicine and plural medical traditions impact practice of allopathic medicine (George 2011). Another study by George et al. (2015) explored that gambling is a wide spread phenomenon in India which existed since ancient times. Using DSM-V diagnostic criteria of gambling disorder, they found it is a severe public health problem.

Similarly, Kuppili et al. (2017) in a narrative review of research on ADHD in India found that all studies used international classification systems-ICD and DSM to assess its prevalence. The study compared the nature of studies done in India with west because India has a unique social cultural milieu and plural system of medicine. It found that there is a gap in the domain of biomarkers to have better insight of disorder. Another study on hypertension which is considered most important risk factor for CVD in India found that it is widely prevalent and endemic in India. Highlighting, its essential link to mortality burden of cardiovascular disease, attributes its prevalence to

lack of awareness, treatment and control status (Gupta and Xavier 2018). The study suggested that population level intervention and technological intervention is required to prevent mortality apart from strengthening health services system. No doubt, statistical character to diagnosis gives it more credibility and handy to differentiate normal from pathological but they are not etched on stone and universal.

Diagnosis shifts are as the equation of its constituent's change and thereby reframe the understanding of health, disease and more importantly body. Thus, contestation is inherent to diagnosis which is essentially uncertain. Examining the cultural validity of diagnostic categories Weiss et al. did a comparison of Diagnostic system (DSM III) and diagnostic categories that exist in south India. The study found there is discord between patient's narrative and professional theory of disease. The diagnostic systems as heuristic tools neglect the cultural and social aspects of illness that give meaning to it.

Being rooted in western experience, they assume universal cultural validity while empirical research contradicts such assumptions. It is exemplified by the case where patients narrate somatic experience while as practitioners emphasise depressive diagnosis. It was found that Explanatory Model Interview catalogue (EMIC) developed by National institute of mental health and Neurosciences is more sensitive to the patient's illness narrative unlike DSM model (Weiss et al.1995, p. 353).

Diagnosis as a process that takes place at the interface of doctor-patient encounter is an outcome of concepts and practices relevant to social context as presented by Bhattacharyya, who did a study on notion of mental illness among range of social actors in Bengal. He argues that psychiatric domain in Bengal is pluralistic both at structural level and in practice. Both the doctor and client are embedded in structural, cognitive and institutional pluralism that shape the clinical encounter and outcome of interaction (Bhattacharyya 1983).

However, plurality of diagnosis could have serious consequences too as highlighted by Purendra Prasad (2005) who studied malaria programme in India. He argued that because of different conceptualisation of illness, health and suffering from patients to policy makers it failed miserably apart from other factors like inaccessible health services.

Dhanasekaram et al. (2017) drawing from a case study of schizophrenic patient in India emphasized the importance of cultural considerations while formulating diagnosis to

deliver effective and acceptable treatment. It's because social and cultural factors shape diagnosis and treatment seeking behaviour in India. Mentioning a case of schizophrenic patient where patient and her family believed that her possession is a sign of divine wrath as she was considering converting to Christianity, it was found that patient's symptoms gradually improved once she followed treatment and allowed to visit temple. Thus, it was patient's cultural identity and illness narrative that helped in scheming effective treatment (Dhanasekaran et al. 2017).

This case highlights that as sociocultural factors influence clinical presentation, these constructs ought to be taken into consideration while framing diagnosis. From the above research papers, it is evident that diagnosis both as a category and process are plural for same condition that too within a specific sociocultural space. However, diagnostic regime shapes perception of common masses beyond their own understanding. In a study of symptomatology and diagnosis of Autism in India, Daley (2004) says that receiving diagnosis depends upon whether parents recognise unusual symptoms as deviant or not.

Despite having a clear diagnostic category of Autism provided by DSM and ICD, actual process of Autism diagnosis depends on whether symptom once perceived by doctor or parents is believed problematic or not. Further, the study says that delay in receiving diagnosis is not simply because of misinterpretation of symptoms but certain societies tolerate abnormality to some degree (Daley 2004, pp. 1323-1335). It is evident that culture plays an important role in diagnosis and symptom recognition.

Diagnosis, which is central to practice of medicine, is more than exchange of biomedical information and clinical encounter is not about seeking treatment of illness. Mathew George's (2010) ethnographic study of fever clinics in Kerala showed that diagnosis of fever is an outcome of doctors thought style and patient's embodied experience. However, the purpose of clinical encounter for doctors was to diagnose and prescribe medicines while for patients it was to seek relief from symptoms.

On the question of diagnostic technology and its impact on doctor-patient relationship and disease category, a wide range of opinions ranging from efficacy of novel diagnostic technology to ambiguity and uncertainty central to it could be found. Webb and Pereira evaluated clinical diagnosis of encephalitis and efficacy of molecular diagnostic technology and found that as technology innovates, it blurs the discrete

character of diseases. It becomes difficult to diagnose with minimal diagnostics (Webb and Pereira 1956). While as other study emphasised the effectiveness of genetic diagnosis of Haemophilia in India (Jayandharan et al. 2004, p. 553). New diagnostic technology like molecular diagnosis is posited to be effective in preventing diseases as technology is fetishized as infallible. It is evident by a study that highlighted, irrespective of recommendations of international diagnostic systems and cost-factor concern, serological tests were utilised by private practitioners for diagnosis of TB in India (Steingart 2012, p. 695).

It assumed that technology precisely surfaces pathologies but such assumption obscures the contingency and interpretation of technological gaze on category social. However, because of availability of different diagnostic technologies that could diagnose disease in early stages and prevent disease burden, a question of social relevance of technology becomes important. Saxena et al. (2012) remarks that given the low-income status of India, visual-inspection (clinical examination) is considered more sensitive and cost effective than pap-smear screening test to diagnose cervical cancer.

Further, as India is witnessing expansion of technology in every sphere of life, it has consequences on doctor-patient relationship and clinical encounter. Haenssgen and Arian (2017) describe that the use of mobile phones has resulted in diverse health seeking behaviour. It has also led to delayed access to public doctors and nurses and over utilisation of resources in India. The growing influence of the Big pharma on the practice of medicine in India is also visible and consequently, it could have severe implications for public health in India.

However, these multi-national pharma companies work in tandem with other forces like technology, local-pharmaceutical companies and actors, and more importantly media. This network of agents' craft medicalization and pharmaceuticalisation processes in society. Kapil (1988) examined the role of pharmaceutical industry in medicalization process through practitioner, where practitioner earns living out of drugs prescribed rather than consultation fee. The study shows that purpose of clinical encounter is to sell drugs and diagnosis is incidental to it.

Similarly, Malpani and Modi (2010) describe the use of preimplantation genetic diagnosis in sex selection in India. The purpose of prenatal diagnosis in India has been largely diverted to sex selective abortions. It highlights that technology could expand

beyond purpose and with the mediation of continuum of actors expand utilisation of diagnostic technologies. Once the utilisation expands, it institutionalises diagnosis. Thus, such a phenomenon reflects an expansion and consequences of diagnosis (Madan and Breuning 2013). There are non-medical factors also that shape diagnosis like the economic, social, historical and cultural (Saradama et al. 2000). Consequently, self-medication behaviour foments among common masses. Saradama and associates (2000) found that people from higher economic groups least follow self-medication. Usually, it's believed that self-medication is some common-mass phenomena but Nalini argues that it exists among doctors too. The study highlighted that medical representatives were the main source of medicines used in self-medication. Self-medication prevalent among doctors was attributed to number of reasons like ego, being a doctor (Nalini 2010, pp. 11-12).

The role of network of actors in selling drugs as panacea of all conditions of life is important to understand pharmaceutical-health nexus. From the lower end its pharmacy attendants and pharmacists as agents that are encouraging self-medication among masses. The pharmacist-client relationship fosters prescription practices in the form of self-medication and counter-pushing as an ethnographic study conducted in Mumbai demonstrated (Kamat and Nichter 1998, p. 779).

The study highlighted the reciprocal relationship that exists along drug sales continuum from industry itself to pharmacists. The study points towards those even low socio-economic conditions with different logic respond to global pharma through local medicine marketing and distribution system. Similarly, Kotwani et al. (2011) showed that it's the pharmacists that dispense medicines to people without prescription and in turn foster self-medication. Pharmacists, being readily available first health care contact, using their knowledge of drugs prescribe medicines to people for making profit and in turn change health seeking behaviour.

Greenhalgh (1987) through exploratory study in India also showed that it's the commercial pressures on doctors and pharmacists that prescribe drugs and supplements of dubious pharmacological value particularly in private sector. Analgesics, supplements and anti-infectives were prescribed and sold over the counter mostly. Most of the patients (60 %) bought drugs without prescription with the aid of pharmacists

(Greenhalgh 1987). Interestingly, Stefan Ecks's (2006) ethnographic work in Kolkata further shows how pharmaceuticals are prescribed to a group of people diagnosed as depressed and labelled as "marginals". The people without access to medicines and suffering from some ailment are assumed to be marginal and providing medicines is to bring patients back to society. The research showed that people are labelled as marginals first and then marketing of medicines takes place (Ecks 2006). However, the study shows that it's through media that bombards people with images and presents medicine as thing that would end all forms of depression and marginality. The imagery of happy family, living a standard life and riches is invoked to convince people to take medicine. Ecks (2006) argued that depression is not associated with marginal in India-like women, workers etc. but marginal could be anyone who does not visit the doctor and have medication.

Besides, a quick guide for self-diagnosis is also presented to people to diagnose condition as a disease. And it is this awareness tactics that conveys people that depression as a disease is widespread and largely undiagnosed. Thus, promise of demarginalization lies in receiving diagnosis and therapeutics. Here, one could say that once diagnosis is established, medicine takes character of fetish and eschew solving problems which are essentially social. So, it is through diagnosis that unequal relations between humans are transformed into relationships between humans and things (Ecks 2006).

New and emerging diagnostic technologies because of assumed infallibility and precision are demanded by individuals to policy level. Early diagnosis and clear differentiation of disease is the main concern of all. However, technology can bring precision but not confidence as novel technologies develop so much of data that diagnosis becomes uncertain. Impact of it reflects in practice of medicine as Prasad et al. (2003) analysed diagnostic practice for pulmonary tuberculosis among modern practitioners in India. It mentioned that doctors prefer chest x-ray over sputum microscopy which has resulted in prescribing TB drugs to non-TB conditions. The reason quoted for x-ray preference over sputum examination was pedagogical limitations and perception of doctors that microscopes are inefficient (Prasad et al. 2003). Thus, novel technologies because of precision unfold the fuzzy texture of body that blurs disease categories.

India is home to different systems of medicine whether indigenous or grafted forms of practice. The dwindling public health services in general and growth of private health care, push people to switch from one system to another and encounter bewildering array of health services. It is the reason that medical pluralism is one of the significant area of concern among researchers. The assumption of diagnostically homogenous allopathic medicine is problematised by V Sujatha's critical assessment of medical pluralism in India and its role in production of knowledge about health, disease and medicine. She examined complexity in practice of medicine by lay people and professionals and plurality within each system of medicine (Sujatha 2007). It's because of medical pluralism both lay person and doctors use concepts from different systems of medicine that inform their understanding of health and disease. Thus, in practice diagnosis would be different from formal category of diagnosis. It can have serious consequences for both patient and disease programmes (Minocha 1980).

Harish (1996) commenting on genesis of tropical medicine draws an alternate genealogy of advent of tropical medicine. He argues that it was the creation of rhetorical pathological atlas that laid foundation of the tropical medicine. That is, by the middle of 19th century a space was configured around the physical and moral meteorology. It was informed by climates that entail social and natural organisation (Harish, 1996). He aptly describes the social and political genesis of diagnosis in case of Malaria when climate was casted as new basis of aetiology of malaria. Despite knowing that climate like other factors hunger, fatigue etc. predisposes body to malaria but not a cause per se.

Discussion

Firstly, it must be acknowledged that sociology of diagnosis as a sub-field within medical sociology is in nascent stage and secondly, diagnosis and its role in medicine has generally remained subsumed within the studies of medicalisation, pharmaceuticalisation or history of medicine and theory of diseases (Jutel 2009). Thus, it has never developed in its own right, although it should. Indian context is no different to it. The studies of George Mathew (2010, 2011) on fever clinics, Modi and Malapani (2010) on expansion of diagnostic technology or pharmaceuticalisation of society by Kapil (1988), do deal with diagnosis as one of the element of explanation but not essential to the phenomena.

Diagnosis as a framework through which medicine operates, espouses its values and its occurrence at the interface of illness-disease and complain-explanation was not seen as central to foundation of medicine. It remained folded within the other explanatory factors like social, economic etc. Diagnosis is assumed as scientific truth and applied to assess prevalence and incidence. Study by Moser et al. (2014) confirms it. Without questioning the diagnosis in itself, studies invoke other factors as causes.

Thus, literature remains short of research on the social genesis of diagnostic categories and their influence on identification and measure of disease categories. However, it shows that influence of international classification systems is growing on research areas of health and disease. Consequentially, it would not only distort priorities of public health but establish (pseudo)diagnosis that would further harm health of people. The consequences of diagnosis, is an area that also remains unaddressed.

Novel diagnostic technologies are assessed on cost-effective factor and efficacy parameters. However, what remains beyond critical purview is impact of diagnostic technologies on otherwise healthy population. The reason being that uncertainty is embedded within diagnosis and given the diagnostic technologies advance day in day out, to sift normal from pathological takes great deal of confidence. Unfortunately, confidence in diagnosis is treated as precision which is purely a statistical term. Therefore, the concern is not whether technology is needed or not but what is the purpose technology wants to fulfil.

The network of actors that shape diagnosis and thereby, clinical encounter and doctor-patient relationship also remains rudimentary. However, research papers from medical anthropology in India do explicate on diagnostic process. The cultural contestations to diagnostic categories and plurality of notions about health and disease in India elaborated on social framing of diagnosis. The differential diagnostic understanding and practices across the network of actors highlights the complexities involved in diagnosis in India. Medical pluralism in India and influence on practice of medicine be it allopathic or other system of medicine, offers a thread that could potentially contribute to sociology of diagnosis. The role of technology and pharmaceutical companies and lay people in establishing diagnosis could be found misplaced as power equation within the social framing of diagnosis remained eclipsed.

Also, uncritically measuring the prevalence of a disease with reference to the diagnostic criteria set by the international classification systems and, once the studies validate diagnostic categories, it institutionalises diagnostic. Such a scholarship, knowingly or unknowingly, aids medicalization process and validates diagnostic criteria. However, sociology of diagnosis demands to unpack this interplay of various forces in its formulation. The changing diagnostics and its role in shaping the understanding of notions of disease, health and impact on doctor- patient relation remained poorly charted out. As diagnostic technologies like genetics not only blur discrete disease categories, essential to diagnosis, but alter social perception of disease, illness and health, its public health implications need to be delineated.

Conceptually, Indian scholarship misplaces the role of diagnosis while understanding changing notions of diseases, health and implications on clinical event. The implications in the form of medicalisation, self-medicalisation etc. are traced to individual actors rather diagnosis as a category and process. So, diagnosis which is central to practice of medicine didn't find any research space. However, empirical studies particularly from medical anthropology did reflect on diagnostic practices and behaviours. These studies prompt to reconceptualise diagnostic categories and offer critical stance to the international diagnostic systems.

More importantly, the role of informed lay people in establishing diagnosis and contestations to diagnostic categories is an area that needs to be researched. Also, the role of media and technologies in disseminating diagnostic information and shaping the collective response, identities etc is another area to be analysed. That is, as the sources of information have diversified, an implication for clinical event needs to be outlined. With the advent of diagnostic technologies that are elaborating medical organisation, clinical space and realignment of clinical decision; it would be interesting to understand how public health is dealing with it. As the diagnosis is moving beyond clinical space into the laboratories, digital space etc, its relevant to figure out implications on public health.

The growing concern towards the prevention of diseases through diagnostic technology and discourse of "risk factor", renewed focus on healthism and molecularization of health and disease also remains outside research purview. Information communication technology is ever more progressively diffusing in Indian society and in a situation of

decaying public health services, the way diagnostic behaviour is crystallising needs to be explored. More importantly, in a situation of diagnostic plurality in practice, how the vertical programmes which predominantly organise health care in India now, is another relevant area to search for. Further, how other systems of medicine are dealing with changing diagnostic discourse in Cosmopolitan medicine could be another dimension.

There is a growing demand in India for essential diagnostic list that be provided free like essential medicines. However, the role of pharma companies in conjunction with biotechnology industry in shaping the state's will demands to be critically evaluated. In brief, the way plurality of care is rendered redundant and public health reconfigured diagnostically, prompts to engage with diagnosis critically. Given such a significant role of diagnosis in determining public health, the gaps in Indian scholarship reflects lack of critical engagement with it.

Conclusion

Sociology of diagnosis and its relevance for understanding changing contours of medicine in India has remained neglected area of study. Diagnosis which is central to practice of medicine and significantly structures public health, despite such a relevance, it hasn't captured the attention of Indian scholarship, partly due to late genesis of sociology of diagnosis and no clear identity (field) of its own. However, changing diagnostic behaviours and diffusion of drugs besides appropriation of life condition does reflect in the literature but diagnosis as cornerstone to these range of processes remains underplayed. Much of the concern among medical sociologists is around medical pluralism and barriers to access of medical resources. Nonetheless, medical pluralism adds an interesting dimension to sociology of diagnosis. Public health policies whatever the budgetary allocation or organisation, if the area of diagnostics remains unaddressed, public health programmes are bound to fail as illustrated by Prasad (2003). The changing character of clinical encounter, doctor-patient relationship and changing notion of doctor, patient and body in response to diagnostic advancement remains unaddressed. The Indian scholarship needs to engage critically with diagnosis and given the condition of public health services in India, if changing diagnostic domain remains out of research horizon, it's goals and priorities would be severely distorted.

Thus, Indian scholarship needs to engage with both individual and public health diagnostically and evaluate range of relationship among different actors that coalesce to produce diagnostic practices and categories. However, Indian scholarship has added an important dimension of medical pluralism to sociology of diagnosis.

Discussion and Conclusion`

Cosmopolitan medicine has undergone number of transformation as its underlying epistemes advanced from morphological bases of disease and health to physiological and by 20th century molecular and genetic understanding firmly established its mode of knowing. However, the paradigmatic changes in medicine where notion of disease and health descended from abstract spatialisation into the concrete space of anatomy could be linked, theoretically, to changing concepts in life science. These concepts as Canguilhem (1991) says are like laboratory actors, once tied to instruments and other devices produce perception. In this sense, technology appears to be natural element of scientific enterprise.

The concepts of organ, tissue and cell spawned functional understanding of health and disease and abandoned the metaphysical perception. Disease and health acquired the logic of physio-chemical processes. The reductionist approach, though with different logic, predisposed to purge disease, all of its social character, restated nature of disease from whole of the body onto its processes. Thus, one could see the emergence of discourse of health and disease around molecule and gene. However, shifts in medicine must not be read as some access to absolute truth that has gradually surfaced. What has changed are the relationship between seeing and saying and subsequently new lexicology of normal and pathological emerge to communicate.

Each shift represents the changed relationship between visible and invisible and new ways of seeing but not the elimination of error. Consequently, concepts of medicalisation, pharmaceuticalisation, biomedicalization and molecularization abound the literature to comprehend the real processes of health, disease and healthcare emergent of global interactions. The concept of medicalisation captures the expanding discourse of health and disease as an ability of medicine to medicalise conditions of life, that is, reproduces life processes in terms of disease or some disorder and initiating medical intervention.

However, the interaction of medicine with science and technology and pharmaceutical industry demanded to shift discourse. New “izations” like biomedicalization emerged to overcome limitation of medicalisation. It attempted to capture the multisited,

multidirectional and complex interaction of medicine and technoscience. With the emergence of global pharmaceutical industries producing discourse on health and disease through clinical trials another term pharmaceuticalisation, that is, pharmaceutical solution to health and disease was proposed to capture role of drugs in everydayness of life. Molecularization-molecular base of disease and health followed in the concatenation as genes (molecules) or biomarkers became the dominant mode of knowing the processes of health and disease. These theoretical shifts were not mere epistemological in nature but result of global dynamics. Further, these “process constructs” did not emerged sequentially, as assumed usually, but as co-evolving processes present throughout the globe in varying degrees. Broadly, in context of these processes, medicine as an institution is being thoroughly reorganised. In response to the changing nature of medicine, the notion of health, illness, and disease is in perpetual influx reshaping doctor-patient relationship and more, importantly perception of body.

However, the major issue with all these processes is absence of diagnosis as stepping stone, whether be it appropriation of life condition by medicine or rendering more human conditions possible for pharmaceutical intervention. It is the diagnosis that convinces people to undergo through various scans and interventions. Expansion of disease categories to pharmaceutical drugs, it's the diagnosis that makes conditions possible rather pharmaceutical industries or techno-sciences. However, diagnosis as a category and process is itself a product of various impulses; social, economic, political, who for their respective interests coalesce together.

Therefore, from patients and civil society to big pharmaceutical industries and technoscience, all these actors collaborate to shape diagnosis as a category and process. More specifically, from tissue doctrine to genetic paradigm, it could be inferred that its primarily the gaze, aided by instrumental assemblage in its endeavour, that gives birth to concepts and in turn shapes diagnosis. Moreover, it is the diagnosis that extends authority to medicine and differentiates quack from the doctor rather technology or medicalisation process.

Diagnosis, because of its organising character transforms an illness or any condition (symptom) into disease, is performative and symbolic act besides medical act. It has a capacity to allocate resources, classify conditions and designate condition a normal or pathological label. Therefore, diagnosis is an effective tool of medicine and corner

stone to understanding of health and disease. Further, diagnosis has consequences too. It medicalises (baldness) as well as demedicalises (homosexuality). It could come as a relief as well as a disappointment and loss of sense of meaning.

More importantly, diagnosis as it changes with the changing relationship of its constituents essentially reconfigures notions of health, disease and body. It is this fundamental relationship between diagnosis and health and disease that could unleash severe consequences for public. With the expansion of diagnostic categories to pharmaceutical intervention, what become invariably redundant are cultural forms of care and more importantly, self-care. In response to growing diffusion of medical diagnosis, categories of disease and pre-disease collapse and embodied form of health appropriated as consumer good. It's the disease and risk factors that are permanent and health is a transitory condition. In such a predicament, one could witness the spur of diagnostic technologies to measure precisely amount of risk embodied and more so, drugs touted as life itself.

To consume drugs is to consume health, becomes defining norm of the day. Patient's, either sick or prospective, with the help of social movements demand institutionalisation of diagnosis and resources allocated. Further, as diagnostic expansion conflates risk factor and symptom to disease, prevention discourse would dominate the health services system. However, the problem is not with diagnostic technology itself but the way it is used on otherwise healthy population. In such a risk and prevention discourse, diagnosis pushes health policy investing much on diagnostic technologies and pharmaceutical solutions. Thus, one could say diagnosis as voice of medicine could potentially be antithesis of spirit of public health.

Further, disease and health is treated as a process at the molecular level rather than suffering and healthiness at organismic level. However, the impact of diagnostic technology is like a continuum. One the one side, it helps patients to understand their pathologies while as it can harm too. In case of false-positives and false alarms, a person can suffer time disorientation like a chronically ill person. Thus, diagnosis could be antithesis of itself what Evan Illich calls for medicine. Notion of self and body, patienthood has changed from the traditional standard as body is more like a hybrid now. New subjectivities and fluid-character of embodiment demands to revisit traditional notion of vanishing patient.

Technological diffusion has reinvented the notion of doctor and patient, so has the notion of self and body. Bioinformatics has reproduced digital body and its digital processes that could be assessed at distance supplanting the clinical encounter. However, to say diagnostic technology obscures patient behind disease is problematic as technology could make us conscious about our interior. Self-tracking devices can give control over body. Digital technology abstracts body as digital codes and would superimpose on pathological model without examining concrete body. Thus, reinvented form of classical medicine could be seen emerging.

In brief, diagnosis has serious implications for notion of health and disease but it could be rallying force to resist medicalisation and pharmaceuticalisation of life too. Moving to macro forces, it is the pharmaceutical-technoscience complex that shapes and diffuses, through and information and communication technology, diagnosis. Ranging from clinical trials to pharma-products, Big pharma plays an important role in defining diagnosis and consequently structuring health and disease. Therefore, diagnosis shapes understanding of health and disease from clinical encounter to collective level. One could say then critical engagement with diagnosis holds a significant importance for both clinical encounter and public health.

With each technological innovation, uncertainty in diagnosis grows as intense amount of information abound and to distinguish normal from pathological becomes quite intricate. In case of India as public health services are severely overburdened, switching to technology mediated diagnosis comes handy and it's this time constraint along with diagnostic uncertainty that more people would end up as patients.

Sociology of diagnosis is more inclined towards consequences of diagnosis. However, how interaction among people shapes diagnosis and whether cultural categories of diagnosis remain intact or vanish as more of the social space is rendered by cosmopolitan medicine is neglected area. Moreover, role of individuals and contribution in diagnosis is another area that needs to be focused on.

Another important area that sociology of diagnosis must research on is minimally conscious state and how diagnosis takes place in such clinical encounters. The consequences of diagnostic technology are well outlined but how applications diagnose needs to be explored very well.

Thus, one could ask, can diagnostic categories ever be value neutral? To answer this question one needs to trouble diagnosis.

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