**Health Disparities: Building the Bridge between Theory and Research**

**Abstract**

The aim of this paper is to address the concern that public health studies in India which focus on empirical research do not use theoretical considerations. Adopting a qualitative lens, this study relies on content analysis as a methodological tool and attempts to explore the underlying use of theory in articles, listed in PubMed. Social Determinants such as poverty, income, social class, education, gender, socioeconomic status, socioeconomic position and wealth were both the primary and secondary measure outcomes as they were the keywords used to identify articles in the study. The paper has identified 91 articles and the authors have suggested potential theoretical frameworks for articles which had some pathways/recommendations/explanations that hinted at some form of theoretical approach. Additionally, the paper has also highlighted the unresolved health issue of tuberculosis in India and suggests how theoretical perspectives play a critical role in providing a holistic view of the major health challenges of the country. Finally, by emphasizing on the need to adopt a theoretical perspective in empirical research of public health studies in India, this study hopes to urge and motivate scholars and researchers to include a theory or theoretical paradigm in their future research.

**Keywords:** *Theory, social determinants qualitative, content analysis, India*

**Introduction**

Social disparities in health in the Indian context are receiving greater attention in the public health discourse over the last few years. By social disparities we mean the unjust inequalities in health outcomes such as tuberculosis, malaria, anemia, undernutrition, infant and child mortality, and so on, across varying levels of social factors such as poverty, income, gender, wealth, education, caste, and socioeconomic status (Sharma, 2003; Oxlade and Murray, 2012; Bhan, et al, 2016; Jungari and Chauhan, 2017). Notably, social disparities in health in India have been documented across a wide range of health outcomes such as mortality, communicable and non-communicable diseases, nutrition, mental health, risk factors of non-communicable diseases, and injuries (Bhan et al., 2016).

Given that societal determinants of health are likely contributing to the causation and distribution of several diseases in India, such a focus on social disparities is timely (Saikia and Kulkarni, 2016: 112). Several theoretical perspectives are recognized by social epidemiology, a field which seeks to identify societal characteristics that affect the pattern of disease and health distribution in a society and to understand its mechanisms (Honjo, 2004:194).Theory in social epidemiology essentially addresses both the impact of society, and of pathophysiology, on disease (Krieger, 2001: 669). In particular, theory aids to understand and explain the complex social and biological processes existing in populations' epidemiological profile. This is because theory helps in structuring ideas, so as to clarify causal connections between specified phenomena within and across specified domains by using interrelated sets of ideas whose plausibility can be tested by human action and thought (Fleck, 1935). Engaging with “notions of causation, in turn, raises not only complex philosophical issues but also, in the case of social epidemiology, issues of accountability and agency: simply invoking abstract notions of ‘society’ and disembodied ‘genes’ will not suffice” (Krieger, 2001). In particular, theory assists scholars of social epidemiology, to critically and systematically examine assimilate and intimate connections between social and biological existence (Krieger, 2001). The theoretical perspective employed by researchers plays an important role in the kind of questions that are investigated and the kind of policies that are formulated on the basis of such research.

“The word theory as a generic term is a supposition or a system of ideas intended to explain something, especially one based on general principles independent of the thing to be explained”(Babbie, 1998: 119). While not all schools of thought employed in the study of social disparities in health might qualify as full-fledged theories, it is helpful to identify which lens is being used, irrespective of it meeting the requirement of a theory or model. We use the word theory in a broad sense to refer to the set of ideas being invoked while understanding and explaining health inequities. Several theories and models are applied in the discipline of social epidemiology and they can be classified into two broad categories based on their characteristics. The first category includes theories that emphasize the attributes of individuals as causal factors while investigating health disparities in a population. For instance, the epidemiological triad, the biomedical model, the lifestyle model and the web of causation (See Krieger, 2011 for detailed descriptions of these models). The other category comprises of theories which underscore the importance of the social environment and other macro-level determinants of health. One such theory is the psychosocial approach which highlights the impact of the social environment and human interaction on disease distribution. Another theoretical framework in this category is the social production of disease which explicitly identifies economic and political institutions as the causal drivers of health inequalities. Since the study of social disparities marries the social with health, it behooves us to understand and theorize the social and the health when investigating social disparities in health (Krieger, 2011: 128-130). Keeping this classification in mind, we focus on identifying the broad theoretical approach (socio-contextual versus individual), instead of the individual theories, by performing a content analysis of articles focused on social disparities of health in India.

To demonstrate the perils of not acknowledging or critically reviewing the theoretical perspectives guiding public health research, consider the history of pulmonary tuberculosis (henceforth referred to as “TB”) control in India. The first organized public health approach to TB control in independent India can be traced back to the recommendations of the Bhore Committee (1946) which “placed organized domiciliary service at the forefront of the programme. It recommended setting up of a clinic for each district and the use of mobile clinics for rural areas” (Ramachandran et al, 2002: 133). These statements imply that TB control as a public health issue was viewed as very similar to the diagnosis and treatment of TB in an individual patient; that control could be achieved by applying the biomedical lens to the community and treating as many individual cases as possible; that the population was a sum of all individuals in that population. Such an approach targets causal factors only at the individual level and ignores causal factors that may be operating at other levels such as poor housing conditions leading to repeated infections and sapping of immunity; and, poor distribution of agricultural produce leading to undernutrition among individuals (which increases their risk of developing pulmonary tuberculosis). India began mass vaccination with Bacille Calmette Guerin (BCG) in 1951 (Singh and Gupta, 2005: 108). The underlying theoretical argument might have been that BCG vaccination would target the immune system of the population and prevent the development of full-blown TB. Notably, this represents a shift to include prevention instead of focusing only on diagnosis and treatment. The first comprehensive program for TB control, the National Tuberculosis Programme (NTP) was pilot-tested in 1961 and by 1978 covered most of the country. The mainstay of the NTP was the use of BCG vaccinations for the prevention of TB, the use of chest radiographs and sputum microscopy for case detection, and out-patient treatment (TB India, 2015: 107). Clearly, the conceptual understanding of the problem of TB control in the population remained the same as earlier—the focus continued to be vaccination plus diagnosis and treatment, thereby suggesting a continued influence of the biomedical model.

Reviews of the NTP identified several issues related to funding, management of the program, a tendency to rely excessively on chest X-ray, lack of use of standard treatment regimens, low rates of treatment completion, and lack of data on treatment outcomes. The review did not challenge the underlying theoretical model of the NTP. The Government of India worked with international agencies to identify the weaknesses of the existing program and relaunched it as the Revised National Tuberculosis Control Program in 1993. The revised program set targets for detection rates and cure rates (Sarfaraj et al, 2012: 483). The mainstay of RNTCP was the Directly Observed Treatment, Short Course: a continuation of emphasis on curative treatment for *individual* cases as an approach towards *population* control of TB in India. According to the 2015 Annual TB report of the Indian Ministry of Health and Family welfare, RNTCP has lowered TB death rates from 29% to 4% between 1993 and 2014. This is a commendable achievement. However, India continues to struggle with the scourge of TB.

Since 2006, the WHO has launched the Stop TB strategy and in India, this strategy encompasses the following major approaches: including private sector physicians in delivery of standard TB treatment; upgrading laboratories to enable sophisticated drug susceptibility testing; improving the drug supply chain; improving monitoring and evaluation of the program; a focus on information, education and communication (IEC); plans to treat multiple drug resistant TB and TB among individuals with HIV (TB India, 2015).This was the first time that social mobilization and health communication received this level of attention and funding in TB control in India. This suggests that the social context of TB had received some attention and that individuals were being viewed as active participants in the care of their own health (and not just as passive cases that need to be cured). Arguably, the emphasis was on more proximal social factors such as an individual’s awareness, intention, and self-efficacy and not on upstream factors such as policies related to poverty, housing, or distribution of foodstuff. Moreover, a reliance on IEC could have led to widening of social inequalities (Jayachandran, 2018). However, it still suggests a broadening in the conceptual model driving TB control efforts in India.

All of this raises questions such as: Would the success of RNTCP have been greater if its theoretical model was acknowledged and critically reviewed? Would such a review have led to a discussion of potential approaches that do not rely solely on the biomedical model? Could this have led to greater attention and funding to IEC activities and inclusion of the private sector much earlier in time? And might efforts targeting causal factors at multiple levels and across multiple sectors have led to better TB control outcomes? These questions need to be asked in order to design effective programs in the future. Tuberculosis continues to be a huge public health concern even today. Therefore we deliberately chose the Stop TB Program to highlight how absence of attention to theory may result in a focus on micro issues while ignoring the macro picture. The Stop TB program barely considered any social determinants even though it was repeatedly revised. We are unable to identify any national health program in India that has acknowledged its theoretical underpinnings.

Similarly, research on social disparities in health in India has been criticized as not paying sufficient attention to theory (Malhotra, 2012; Krishnan, 2016). However, the extent to which theoretical perspectives are applied or even explicitly/implicitly acknowledged in such work has not been empirically investigated. Therefore, the goal of this study is to highlight the significance of theory in social epidemiological studies in India and through this exercise, we intend to encourage future scholars of social epidemiology and public health conducting quantitative studies in India to explicitly mention at least one theoretical framework in their research. In the remaining sections we describe our review of the use of theory in articles examining the impact of social determinants of health in India and our conclusions from such a review.

While a simple count of published articles that mention theory would provide a comprehensive examination, going beyond a simple count and using qualitative methods to analyze how and to what extent theory has been applied is more informative. Such a qualitative analysis may shed light on the extent of current use of theory and begin a conversation about the implications of theory based research for policy and programs.

We hypothesize that a majority of India-focused social epidemiological research does not explicitly identify its theoretical influence. In case of studies in India which use and acknowledge theory, we expect them to be primarily authored by researchers based outside India. Furthermore, we expect that every article will still have underpinnings of theory whether explicitly stated or not. We aim to examine the practice of acknowledging the theoretical perspectives used in public health research which is focused on studying the impact of social factors on health in the Indian context. Inclusion criteria for the articles analyzed were as follows: quantitative studies of social disparities in health and studies published in the 1990-2019 period, to present a contemporary picture. Articles on sexually transmitted diseases and mental health outcomes were excluded as these studies have a history of drawing on social and psychological theories. We also excluded qualitative studies because that approach inherently emphasizes the acknowledgement of the lens used. Finally, studies with no implicit or explicit theoretical statements (pathways/policy recommendations/explanations) were also not considered for analysis for this study.

**Materials & Methods**

The methodology adopted had two steps: first was a literature search and quantification, and the second a qualitative content analysis.

**Literature search:** The search was conducted using several keywords denoting social determinants of health (in “Title OR Abstract”) and the word “India” (in “Title OR Abstract”). The following social factors were employed in the search: poverty, income, gender, wealth, education, caste, social class, religion, immigration status, socioeconomic position and socioeconomic status. The selected social determinants are some of the major factors which have an impact on the health of individuals as suggested by the World Health Organization (2008). However, we did not include race or ethnicity as these terms are not relevant when conceptualizing social determinants of health in the Indian context. The concept of ethnicity is invoked as a way to indicate historical and geographic connection of a person to a place in India, and not as a social determinants of health. Additionally, we did include “religion” as a key search word, but did not find any articles that met our inclusion criteria. While there may be a few that compare specific religions with each other, we hesitate to include those because the religious labels might be proxies for several sociocultural factors.

To maintain the focus on those articles which primarily examined the association of a social factor with health, we expected that these keywords would be considered important enough to be included in the title or abstract of the article. We also searched for articles with either disparity/disparities or inequality/inequalities in the title or abstract, in combination with “India” (in “Tile OR Abstract”). Articles on sexually transmitted diseases, mental disorders and qualitative studies were excluded and the year of publication was restricted to 1990-2019. Only empirical studies where the social determinants were of primary interest were included (reviews were excluded). Articles which fulfilled the search criteria were reviewed and the number that explicitly mentioned a theoretical perspective was counted.

**Analysis**: In order to speculate on the underlying theory that might have been used in the studies which did not explicitly name the theoretical perspective employed by them, we used content analysis as a qualitative methodological tool. According to Babbie (2001: 158), content analysis can be defined as “the study of recorded human communications.”It is “essentially a coding operation, with coding being the process of transforming raw data into a standardized form” (Babbie, 2001: 159).In content analysis the identified words or texts are analyzed systematically and divided into content analytical units (Kohlbacher, 2006: 33-42). The aspects of text interpretation are allocated into categories, which are scrutinized and revised meticulously. Within the method of content analysis there are three approaches which are most widely used: conventional, directed, and summative. The conventional content analysis approach derives coding categories directly from the text data. The directed approach begins with a theory as guidance for initial codes. Finally the summative approach involves comparisons of keywords to interpret the text (Hseih and Shannon, 2005: 1276-1278). We chose summative content analysis to examine how the use of certain keywords could be interpreted to determine the theoretical tone. We used summative content analysis because it goes beyond the frequency of the words and fleshes out the inner meaning or content of the words (Hseih and Shannon, 2005: 1279). In summative content analysis, the data analysis begins by identifying the frequency of the keywords. Following which, the context in which the word is used is explored and interpreted. The social determinants listed above acted as the keywords and the contextualization of these social factors in the statements related to explanations, pathways, or policy recommendations in the selected articles were analyzed. Following the identification of these statements, we next classified the studies into either individual or socio-contextual approach to further explain the theoretical basis of the study.

Since all the articles included only implicit theoretical postulations and no explicit statements, we performed summative content analysis to speculatively identify the theories which could be most relevant for each of the articles. Among the articles which were selected for content analysis, thirty three studies suggested individual level explanations and forty studies suggested socio-contextual explanations for health disparities. The other six studies suggested both individual and societal level explanations for health inequalities. These were identified based on statements in the form of explanations, pathways or policy recommendations. The specific approaches speculatively identified by us are presented in the detailed table (Supplementary Table). (Attached as a separate file).

Taken together, we found support for our hypotheses: no studies explicitly identified the theory adopted, and an overwhelming majority included statements that implicitly drew on one or more theoretical approaches. However, four of these studies did have references which drew from theoretical frameworks, nonetheless, an explicit mention of the theory was missing from the article.

**Results:**

The total number of articles that met the inclusion criteria was 91. Seventy nine of these articles included statements in the form of explanation, pathway, or policy recommendations that suggested the theoretical approach applied (Table 1). Based on these statements, the authors identified approaches for each of the articles.

**Discussion**

This paper began with the underlying research hypothesis that studies of social disparities in health in India do not draw from theoretical frameworks. Our content analysis of published literature found support for this hypothesis. Additionally, we had hypothesized that while the studies may not state the theoretical lens, these studies will still advocate a policy perspective. Most of the studies we analyzed concluded with a policy recommendation. Finally, we had also postulated that most of the studies will include statements which will enable us to suggest potential theoretical paradigms for these studies. This hypothesis was also supported as most of the articles included such statements.

By performing summative content analysis, we found that none of the articles that met our inclusion criteria had an explicit mention of any theoretical framework that may have guided the studies they described. However, a majority of the articles focusing on socioeconomic determinants of health in the Indian context did have statements that allowed us to make an educated guess about the theoretical approach applied in those studies. This suggests that social epidemiological studies in India are not atheoretical and are conceptualized based on one or more theoretical approaches. However, the importance of acknowledging the underlying theoretical lens has not been recognized by the authors of these studies.

Health disparities research typically focuses on questions regarding the extent of disparities, the trends in disparities, the causes of disparities, and ways to narrow or eliminate disparities. However, decisions related to how disparities are conceptualized and measured, which disparities are studied and which are not, which causes of disparities are investigated and which are not—all of these choices are determined by the theoretical perspective adopted by researchers. We argue that a critical review of the underlying theory could lead, at the very least, to a more comprehensive understanding of the issue, which is imperative for designing programs and policies that are more likely to be effective and impactful.

We hope that our analysis sparks debates about the importance of theoretical perspectives in health disparities research, and public health research, in the Indian context. Analyzing and applying theory may help in avoiding errors, inspiring new ideas, and critically conceptualizing the methods used in different studies and programs.

**Conclusion**

In conclusion, we submit that theoretical frameworks enhance studies examining health outcomes in India by guiding the type of research questions focused on and thus the policy/program implications of the findings of such studies. In particular, the use of theory in social epidemiology could prompt an examination of the role of social determinants as causal factors impacting health, and bridge the gap between an individual- and population-level focus on disease prevention (Krieger, 2014). An implication for strengthening local research capability is that including theory in research will aid social epidemiologists in constructing research designs which cover both micro and macro issues of health outcomes, since theoretical frameworks cover a range of propositions from genetics to environment (Krieger, 2014). Ignoring theory has great implications for public health practice as well. For instance, the numerous revisions of the TB prevention program did not differ extensively in the theoretical perspective guiding the program, thus missing an opportunity to address underlying social determinants of TB in India. Additionally, given India’s diversity and regional specificities, adopting theoretical models that acknowledge the importance of the social environment, in addition to “traditional” risk factors, is likely to lead to a better understanding of social disparities in health. Furthermore, context-appropriate theory building might facilitate the global exchange of ideas to understand why different populations show different kinds of disease profiles (Rose, 1985).

Such a practice may help in lowering the chance of harming individuals and increasing the chance of formulating policies that prevent diseases, promote health equity and improve the public’s health.

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**Table 1: Distribution of articles on social determinants of health and their acknowledgment of theoretical perspective**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Social Factor** | **Number of articles that PubMed listed for each search** | **Number of articles that met the inclusion criteria** | **Number of articles that explicitly identified a theoretical perspective** | **Number of articles with explanation/pathway/policy recommendation** |
| **Poverty** | 114 | 7 | 0 | 7 |
| **Income** | 333 | 8 | 0 | 5 |
| **Wealth** | 32 | 4 | 0 | 3 |
| **Gender** | 347 | 18 | 0 | 13 |
| **Caste** | 106 | 12 | 0 | 12 |
| **Education** | 598 | 2 | 0 | 1 |
| **Social Class** | 24 | 16 | 0 | 16 |
| **Socioeconomic Position** | 3 | 1 | 0 | 1 |
| **Socioeconomic Status** | 59 | 10 | 0 | 8 |
| **Religion** | 0 | 0 | 0 | 0 |
| **Immigration Status** | 8 | 8 | 0 | 8 |
| **Disparity/Disparities** | 3 | 3 | 0 | 3 |
| **Inequality/Inequalities** | 2 | 2 | 0 | 2 |
| **Total** | 1629 | 91 | 0 | 79 |