Glorifying Virchow: Current Debate on Neoliberal Policies and Health Inequalities in India

Abstract

This paper explores the theoretical basis and empirical evidence for understanding links between neo-liberal policies and health inequalities in Indian context. The pathways in which inequality generates particular population health outcomes remain a major source of dispute within social epidemiology and health economics. Virchow's philosophy undoubtedly galvanised thinking across the disciplines, with its emphasis on how political-economic ideologies and income inequality shape the distribution of health and social problems. In this paper, we argue that the focus on health inequality, whilst important, understates the role of neoliberal discourses and practises in making sense of contemporary debates on health inequality. Many quantitative studies have demonstrated that more neoliberal countries have poorer health compared to less neoliberal countries, but we hardly found a comprehensive documentation of evidence in Indian context. In light of the fast-changing political and social environment and policy priorities post-1990s in general and post-2014 in particular, this paper examines the impact of the rising share of private healthcare delivery on health inequalities. Using inequality in Under-Five Mortality Rate (U5MR) as a health outcome and per capita NSDP, per capita public health expenditure, share of private health care spending and poverty ratio as an indicator of neo-liberal policies, through robust econometric assessment, we found that economic growth without poverty reduction and public health care spending raises health inequalities. We conclude that integrating understandings of neoliberalism into theorising about health inequality enriches political economic and political demographic perspectives of health. India must implement "post-neoliberal" social and political-economic policies to counter neoliberal models that emerged in the 1990s and rising social and health inequalities. Ending poverty and austerity towards public health spending are two key steps for reducing health inequalities.

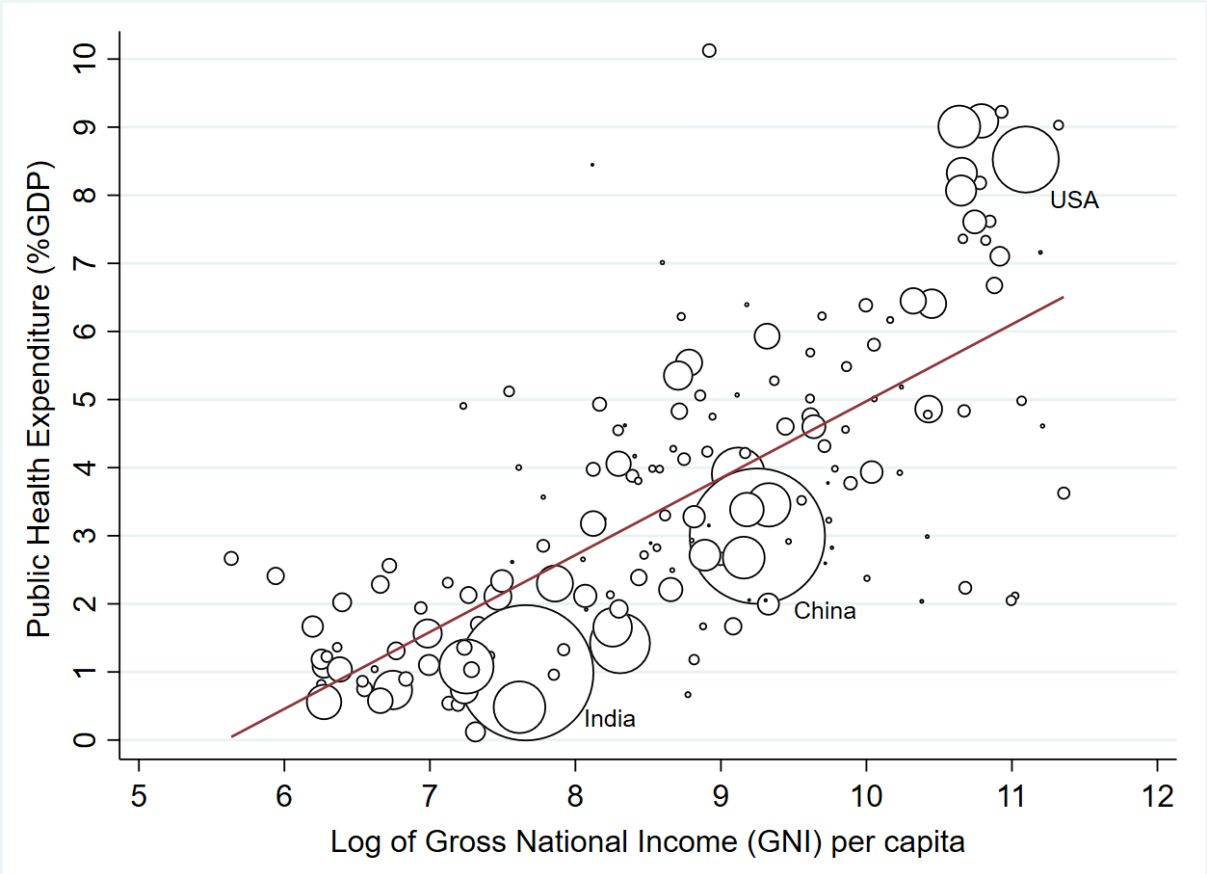
Keywords: Health Inequalities, Neoliberalism, Political Determinants of Health

1. Introduction

Medicine is a social science, and politics is nothing
else but medicine on a large scale (Virchow 1848, p.2.)

With the advent of technological and market evolutions and economic transitions, the dawn of the 21st century heralded an era of new threats and challenges. The principal among these is the unbridled pace of rising healthcare costs and inequalities. The cost of health care is increasing swiftly in both the developed and developing countries of the world. Even the people living in the richest countries of the world are worried about their ability to pay for critical health care. (Thomson, Cylus and Evetovits, 2019; Smith, Bambra and Hill, 2016). Yet, it is hard to guess what level of economic growth or Gross Domestic Product (GDP) is required for an effective sponsoring of health for all (Dreze' and Sen, 2012). Clarification of these crises are complex. Does the blame fall on greedy doctors, on the medicalisation of health care, willingness to pay from the people's side or, conversely on the failure of particular governments to provide adequate resources to pay for a proper health care system (Doyal and Pennell, 1985)? Several countries do not spend according to their economic size (Figure 1). These are simplistic understandings of what is, in reality, a very complex problem and one which is profoundly ingrained in the nature of capitalism as an economic and social system. A critical analysis of the social determinants of health using a political-economic framework is thus the need of the hour.

Figure 1. Gross National Income and Per capita public health expenditure (%GDP) in 2019



Source: Authors

Current economic cogitation is rife with discussions and debates surrounding the determinants of health outcomes and inequalities. Particularly, the mechanisms through which a political ideology generates particular population health outcomes and associated inequalities remain a major debate within health economics, social epidemiology and medical sociology. In this paper, we argue that the focus on socio-economic inequality and related political ideology, whilst important, understates the role of neoliberal discourses and practises in making sense of contemporary socio-economic inequality and its health-related consequences.

Globally, many quantitative studies have demonstrated that more neoliberal countries have poorer health compared to less neoliberal countries (Peacock, Bissell and Owen, 2014; Rotarou and Sakellariou, 2017; Gatwiri, Amboko, & Okolla, 2020), but only a modicum of studies in India have explored how neoliberal discourses shape health outcomes empirically (Dreze' and Sen, 2012). Some of them are theoretical in nature (Baru and Mohan, 2018). Although neoliberalism has long been relegated to the peripheries of health economic discourses, it poses vast consequences for the state of health outcomes and inequalities for individuals of a political economy. Peacock, Bissell and Owen (2014) argue that incorporating understanding of neoliberalism into theorising about inequality enhances social determinants of health perspectives in this area.

The acknowledgement of the political nature of health and a contemplation of the political determinants of health are unequivocally important to facilitate a better understanding of health inequality, as well as our shared accountability to safeguard the conditions under which people can relish health equity. There is a pressing need to build on the body of work that helps us understand and illustrate the importance of political activity and public policy as a determinant of health. Not only can it help us explain the different ways in which political power and ideology influence health equity, but it also reminds us of the need to justify the values and concepts that underpin them. This not only contributes towards more realistic and effective research on political determinants of health equity, but also underscores the need to embrace research programmes and political agendas that can design and implement policies that provide feasible and attractive alternatives to the prevailing convention of neo-liberal ideas. In this paper, we devote a substantial portion of the paper to theory, albeit interspersed with empirical evidence.

1.1 Glorifying Virchow: Political Determinants of Health

Rudolf L. C. Virchow, the father of modern pathology and the founder of social medicine, coined a well-known precept: "Medicine is a social science, and politics is nothing else but medicine on a large scale" (Virchow 1848, p.2.). Virchow's philosophy indisputably galvanised thinking across the disciplines, with his emphasis on how social inequality shapes the distribution of health and disease prevalence. His philosophy advocates "social inequality as the cause of diseases that requires political actions" (Taylor and Rieger, 1985). Many contemporary scholars carried his philosophy in the interpretation of modern-day social and economic inequalities in health status in diverse populations. As Kickbusch (2015) writes: "health is a political choice". Although the political determinants of health are less acknowledged within the framework of social determinants of health, the part

played by political choices in a nation's health is less surprising. In particular, neoliberal health care policies across the populations lead to highly privatized and compartmentalized health care delivery systems, pushing back the role of the state in health care delivery. Under highly privatized healthcare delivery systems, not everyone gets immediate access to the latest life-saving measures due to tremendous differences in purchasing power. Thus, with the introduction of every new healthcare technology and medicine, we are witnessing rising health inequalities (Deaton, 2013).

Health inequalities are central to current health policy internationally and in many nations. Neoliberal reforms in less developed or developing economies have led to big changes in healthcare systems around the world on account of their emphasis on the free market rather than the right to health (Sakellariou and Rotarou, 2017). Under these economic policies, government spending and regulation were both greatly reduced, and taxes were cut for corporates. The policies had massive effects, allowing for the rise of the high-tech revolution years later but widening the gap between the rich and the poor (Schreker, 2016; Gatwiri, Amboko and Okolla, 2020).

In India, within the framework of social and political determinants of health, specifically, governance of health care received relatively less attention. In light of the fast-changing political and social environment and policy priorities post-1990s in general and post-2014 in particular, this paper examines the impact of the rising share of private healthcare delivery on health inequalities.

This study begins by describing the historical political roots of neoliberalism in health care, before moving on to consider the various ways in which ideas associated with neoliberalism have been implemented globally across different contexts of health care delivery. The second section draws on ideas on how and why neoliberalism is implicated in the rise in, and persistence of, health inequalities before reviewing key debates surrounding the pathways linking neoliberal policies and practices with poor health outcomes. Section three presents the empirical evidence from India on what extent neo-liberal policies have led to rise in health inequalities. The last section discusses the findings with a critical assessment of public health's failure to address the links between neoliberal policies and health inequalities, arguing that this has led to an unjustified focus on frameworks which have little prospect of explaining, or catalysing action to reduce health inequalities.

1.2 Historical Political Roots of Neoliberalism in Healthcare

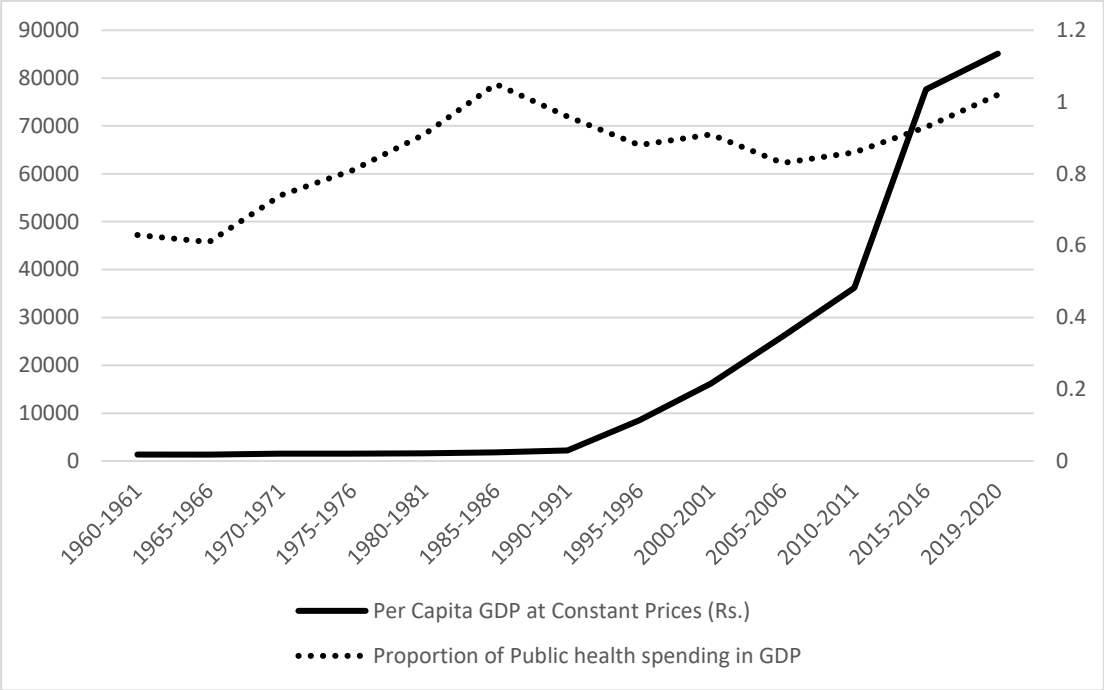
If one were to chart the trajectory of political systems and health inequalities, the first underpinnings of the failure of neoliberal ideas in achieving equity can be found in prehistoric times. Angus Deaton, in his work 'The Great Escape', posits that one of the virtues of sharing was greater equality as observed during prehistoric times. Hunter-gatherer societies were characterised by egalitarian hues and managed without a ruler. Consequently, although their mortality levels were high by pervading standards, they were quite reminiscent of the distant past in the West and of the living memory of poor countries of today and, more importantly, uniform across people (Deaton, 2013).

The advent of divergence from extant mortality levels coincided with the genesis of civilisation. Deaton aptly terms inequality as a gift of civilisation. High child mortality coupled with increasing population resulted in a Malthusian equilibrium that persisted for years to come. Contrary to popular belief, the discovery of agriculture increased mortality levels and the inequalities therein. Subsequently, one of the most unanticipated proliferations in health inequalities was witnessed during the Industrial Revolution. It was instrumental in observing and proliferating the unjust distribution of the benefits of innovation.

This trend seems to have carried on into the 21st century and is evidenced by the mass propensity to settle for trade-offs. For example, the US healthcare system is accustomed to rapid bouts of innovation, both effective ones and those of dubious values. Irrespective of their supposed efficiency, a burgeoning trend in inequality among the education and income groups has been observed with the introduction of innovation. The rich, educated and often healthier individuals are quicker to adopt new innovations (Deaton, 2013).

This leads us towards the realisation that the politics of health are immersed in an ideological battle. In fact, the key contention in the politics of public health is the debate between primacies of economic profits over the greater good. The primacy accorded is always in tandem with the ideological leanings of a political economy (Kickbusch, 2015). India serves as an excellent manifestation of this realisation. The post-liberalisation era in India has been characterised by persistently low levels of public expenditure on health, which hovered around 1% of GDP since the Liberalisation, Privatisation and Globalisation reforms. Furthermore, although the National Common Minimum Programme aimed to raise public health expenditure to 2-3% of the country's GDP, India's public health expenditure dropped to 0.8 % of the GDP in 2005 (Figure 2). The subsequent rise in public health expenditure was largely attributed to salary increases in the public sector and not direct political interventions in the health sector. A related symptom of the tendency to relegate public health spending to the peripheries of the political agenda is the low share of public health expenditure in the total health expenditure of India. As a result, India is plagued by an inefficient public health sector coupled with a largely unregulated private sector, which has served to proliferate health inequalities in the country (Dreze and Sen, 2012). Thus, health inequalities in India are a visible manifestation of the ideological lacunae embedded within the political system of our country (Rao, 2016).

Figure 2: Trends in Per Capita GDP versus Public Health Expenditure (in % of GDP)



1.3 Contemporary Debates Linking Neoliberalism and Health Inequalities

That politics of health is the major determinant of health status and inequality in a political economy is a notion that enjoys broad consensus in current literature (Kickbusch, 2015; Tiwari et al., 2023). Makenbach (2014) goes on to articulate that an increase in public health efficiency can be achieved with a greater understanding of the consequences of politics on population health. However, the author inversely cautions against the perils of fostering romantic illusions regarding the efficacy of political action. Subtle effects of political agenda are less likely to be observed in the short run. This inability arises from the issues associated with observational and experimental studies, both of which are plagued with their particular biases. For example, social democratic governments are associated with better population health. However, studies that have observed this relation have been unable to account for potentially confounding variables such as people's voting patterns and health-seeking behaviour (Makenbach, 2014).

Schrecker (2016) puts forth the notion that health effects are a response variable to the multitude of neoliberal epidemics. He defines neoliberalism through principal elements – markets are the natural and preferable alternative to organising human interactions; the function of the state is to ensure the smooth functioning of these markets, and justification for redistributive policies must trump the theoretical ideals of markets. In such a scenario, there are multiple channels of interaction between health outcomes and neoliberalism. Conventional typology divides these channels into two primary streams material wellbeing and psychosocial dynamics. Material well-being is one of the most pronounced channels that connect health inequality and neoliberalism, as is evidenced by low food security in the US. Official surveys estimated close to 6.9 million US households experiencing extremely low levels of food security (Schrecker, 2016).

In terms of psychosocial dynamics, Wilkinson's and Pickett's (2010) work 'The Sprit Level' demonstrates that neoliberal policies shape agencies and resistance to the increased inequalities and stress of everyday life. The psychosocial ideal accounts for an individual's self-worth as driven by social inequalities and subsequent effects on health-seeking behaviour. Inequality in income extends beyond its monetary facade. Greater inequality also perpetuates the evaluation of people's worth in terms of their monetary and social standing, thereby imbuing a sense of anxiety tied to lower social standing (Peacock, Bissell and Owen, 2014). It is instrumental in understanding the veiled epistemological character of the health sector in a neoliberal setting.

Perhaps the most conspicuous manifestation of the linkages between health outcomes and neoliberal politics is the changing landscape of trade relations. The axiomatic preferences of neoliberalism are corroborated by its affinity for free trade and patent rights (example: TRIPS agreement). The most obvious outcome of this aspect of neoliberalism has been decreased access to medicines among the lower-income countries. Studies have also portrayed that the increased volume of international trade has contributed to the growing obesity levels among the Low and lower-middle-income countries (Schrecker, 2016).

Another aspect of the health sector in a neoliberal setup is the burgeoning private health insurance sector. Private health insurance arises in the face of failures of market and state authorities (Mudge, 2008). However, in India's case, private health insurance companies have exacerbated inequalities in four principal ways – exclusion, screening (to avoid moral hazards), obstacles faced by the poor and a largely unsubsidised health sector (Dreze and Sen, 2012).

Inequality pervades all societies. Not all people progress at the same rate and at the same time. The problem worsens when there are epistemological barriers to escaping the inequality trap in order to preserve the extant social structure. The wide consensus amongst current health economics literature is that a political society organised along the lines of neoliberal ideas serves to exacerbate these inequalities and, in turn, works towards sustaining them.

In this study, we take the case of India to empirically demonstrate how neo-liberal policies helped to increase the average incomes and health status of the country and its states but also raised inequalities in even basic health indicators such as child survival.

2. Theoretical Framework: Mechanism of Neoliberal Policies' Influence on Health

There are many ways in which the term neoliberalism has been used for analysing its influence on the use of health systems, healthcare and health outcomes. For a more meaningful analysis, we need to conceptualise neoliberalism in broader terms. It is essential to go beyond the economic aspects and encompass its effects on political, cultural and social processes. Figure 3 presents a theoretical framework outlining the influence of neoliberalism on these aspects. From an operational point of view, neoliberalism operates

primarily functions through structural adjustment programmes and austerity measures. Both fronts are a response to financial crises, which have come to be part and parcel of the neoliberal set-up with adverse effects on health outcomes. The structural adjustment programme, which became the hallmark of the IMF and World Bank towards the end of the 20th century, is characterised by the principles of liberalisation, privatisation and globalisation. Liberalisation forms the basis of an open market economy that functions in an unfettered environment with unbridled prices. Accompanied by privatisation, the general atmosphere of soaring price levels is fuelled by consumerism and the alleged competitiveness of an open market economy. Further fillip is provided to the private sector by imposing corporate tax cuts. With respect to globalisation, foreign aid is directly tied to the enabling environment for a greater penetration of the private sector. Additional aspects relating to deregulation and de-politicisation are also involved, which advance an underlying loss of political morality that is intent on relegating welfare to the peripheries.
A culmination of these factors leads to the commodification of health and healthcare. Health as an intangible aspiration and state of being is markedly different from the regular goods and services traded in a market economy. However, the presence of an open market economy coupled with a strong private sector leads health to become a tradeable commodity that is available for those who can afford it. Morals dictate that good health should be a right for all as it has significant bearing on the functioning and capability of individuals. However, the implementation of a structural adjustment program strips health of its essential character and markets it as a commodity based on price instead of a service governed by need.

Austerity measures concomitantly work towards reducing government spending on public welfare. The espousal of austerity measures during times of crisis presents yet other paradoxes of the neoliberal setup. Crises are known to accentuate inequalities by their disproportionate effects on the poor. Receding government spending in this event exacerbates the widening gap, leaving the poor even further behind. Austerity measures in the aftermath of the Great Recession had a devastating impact on health and health inequalities, particularly in the UK (Viens, 2019). As a policy response in times of crises, austerity measures reveal the tendency of governments to shift the risk of healthcare towards the individual. Health, thus becomes an individual's responsibility. The individualisation of health relays the true extent of moral perversion that grips a neoliberal politico-economic set-up. When health is relegated to an individual's responsibility, the implicit assumption underlying the risk shift is that a citizen possesses the adequate means to ensure quality healthcare for oneself. However, the assumption withers away in the face of the poverty trap created by neoliberalism.

This poverty trap is created by the decline in government spending on public welfare, which affects health outcomes through reduced social welfare funding and healthcare funding. With receding government presence in social welfare, citizens do not possess a social security net to fall back upon in times of crisis. Austerity measures, against this backdrop, worsen their condition. Furthermore, an unfettered market economy, functioning majorly through supply and demand dynamics, fails to account for the deprived, especially in terms of healthcare.

Additionally, reduced social welfare funding falters in terms of addressing poverty and social inequalities and lessens social cohesion, which aggravates the psychosocial stress associated with the inability to secure routine functioning and capability during times of crises.

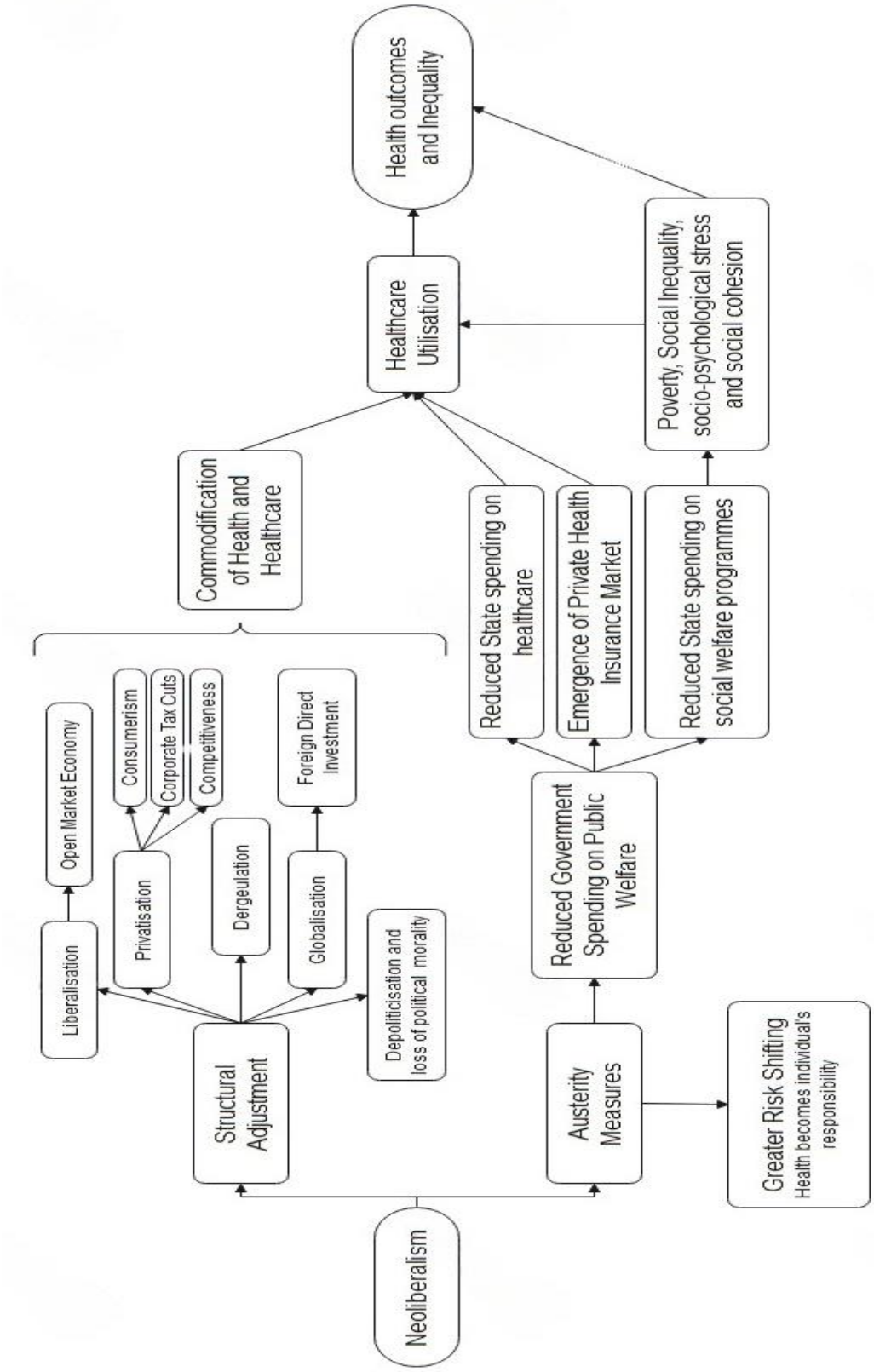
Coburn argued that neoliberalism:

> *produces both higher income inequality and lower social cohesion and…. either lowered health status or a health status which is not as high as it might otherwise have been (*Peacock, Bissell and Owen, 2014*)*

When society is divided into markedly different social groups, not only in terms of income and wealth but also avenues and opportunities available, health status produces a widely polarising spectrum with the scales tipping in favour of the rich and wealthy. Reduced social cohesion resulting from such blaring gaps further hinders the larger community from working towards better health outcomes.

In this event, along with the commodification of health and reduced spending on healthcare, rising poverty and social inequalities significantly impact the health-seeking behaviour of an individual. Entrenched inequalities and poverty are also reflected in the health outcomes of a political economy. Similarly, healthcare utilisation relays the extent of health inequalities present in a political economy.

Figure 3: Linkages between Neoliberalism and Health Inequality



Source: Authors

3. Empirical Evidence from India

3.1. Data

For its empirical segment, the study used multiple data sources: health data is obtained from successive rounds of National Family Health Surveys (NFHS) from 1992-93 to 2019-21 (IIPS, 1995; IIPS and Macro Internationals, 2001; IIPS and ICF, 2007, 2017; IIPS and MoHFW, 2021). Following Coburn (2000) and Dreze and Sen (2012) who used child survival as an illustrator to explain the impact of neo-liberal policies, in this study health outcomes are measured in terms of under-five mortality rates (U5MR), which captures both mortality levels observed amongst infants and children aged 1-5. The rise in per capita Net State Domestic Product (NSDP) and private health care share are treated as a proxy indicators of neoliberal health care policies. NSDP, share of public health expenditure in GDP and workforce participation rate is collected for successive rounds of Central Statistical Organization (CSO), Ministry of Statistics and Programme Implementation (MoSPI), Government of India (Government of India, various years). Male and female literacy rates and level of urbanization were compiled from successive Censuses of India (Office of RGI and Census Commissioner, 1991, 2001 and 2011).

We also use successive rounds of National Sample Survey Organization (NSSO) on social consumption data (MoSPI, 2004, 2004, 2014 and 2017/18) for estimating out of pocket expenditure on Institutional Deliveries. Public health expenditure across the states has been collected from reports of the Ministry of Health and Family Welfare (MoHFW), While, public health spending across the countries has been collected from the World Health Organization Global Health Expenditure database (World Health Organization, 2022). The descriptive statistics of all study variables presented in Appendix Table 1. A detailed description of variables used has also been provided in appendix table 2.

The total literacy rate, female literacy rate, male literacy rate, workforce participation rate and level of urbanisation have been employed as control variables to distinguish the sole effect of neoliberalism on health inequalities. Additionally, robustness checks have been carried out to corroborate the findings of our main model. Subsequently, poverty ratio, per capita public health expenditure, utilisation of private health care services and governance index have been used as alternate variables.

3.2 Econometric Approach

Health inequality measurement:

Health inequality is measured using two measures: Poor-Rich ratio and Wagstaff's concentration index (CI) (Wagstaff et al., 2007). The concentration index is twice the area between the concentration curve and the 45^0-line, indicating no relationship between the two variables. Mathematical proof of Wagstaff's corrected concentration index is as follows:

$$C = \frac{2cov\,(h_i, R_i)}{h} \quad (1)$$

Where h_i is the health variable. Specifically, we measured health inequality in U5MR.

R_i is the rank variable. We used wealth quintile as a rank (socio-economic gradient) variable.

C ranges from (1-n)/n, maximal pro-poor inequality (that is, all health is concentrated on the poorest individual), to (n-1), maximal pro-rich inequality.

Although, CI for our health variable (U5MR) is negative that is pro-poor, for plotting purpose we have used absolute value of CI *i.e.* ABS(CI).

Partial correlations:
We plotted partial correlations between per capita NSDP and CI in U5MR adjusting to averages of U5MR. Partial correlation per capita NSDP (a), CI in U5MR (b) and averages of U5MR (c) can be written as:

$$r^{abc} = \frac{r^{ab} - r^{ac} r^{bc}}{\sqrt{(1-r_{ac}^2)}\,(1-r_{bc}^2)} \quad (2)$$

Panel data regression:
By constructing a panel of 15 states over five-time points (n=75), the study employed fixed and random effects regression models to assess the impact of the rise in per capita NSDP and private health care share on health inequalities. We used multiple robustness checks where we employed alternative predictors (e.g. poverty rates) and alternative models (linear regression estimates for different time points) to see the consistency of the evidence that emerged from the main analysis.

Fixed effects regression model:

$$Y_{it} = \alpha_i + \beta_1 X_{it} + \delta_i + \mu_{it} + e_{it} \quad (3)$$
$$I = 1 \ldots n;\ t = 1 \ldots T$$

Where Y_{it} is concentration index of U5MR, α_i is the unknown intercept for each entity. $\beta_1 X_{it}$ is the coefficient of the explanatory variable log of NSDP per capita and time dummy; β_k is the coefficient of each of the explanatory variables viz., female and male literacy rate, workforce participation rate and level of urbanization; δ_i is the state dummy, *i* is the unit of observation and t is the period of time. μ_{it} is within entity error term and e_{it} is overall error terms.

Random effects regression model:

$$Y_{it} = \alpha_{it} + \beta_1 X_{it} + \delta_i + e_{it} \quad (4)$$
$$I = 1 \ldots n;\ t = 1 \ldots T$$

Where Y_{it} is the concentration index of U5MR; α_{it} is the unknown intercept for each entity; $\beta_1 X_{it}$ is coefficient of explanatory variable that is the interaction term of log of NSDP per capita and time dummy; β_k is the coefficient of each explanatory variables female and male literacy rate, workforce participation rate and level of urbanization, δ_i is the state dummy. *i* is the unit of observation t is the period of time. e_{it} is overall error terms.

4. Results

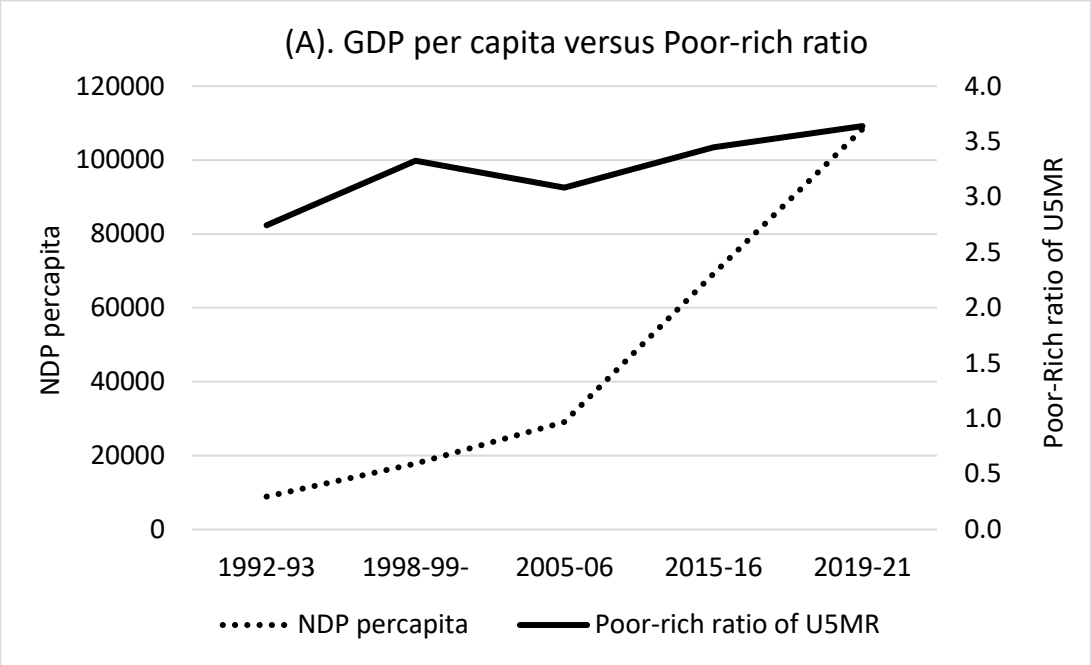
4.1 Trends in Economic Growth versus Health Inequalities

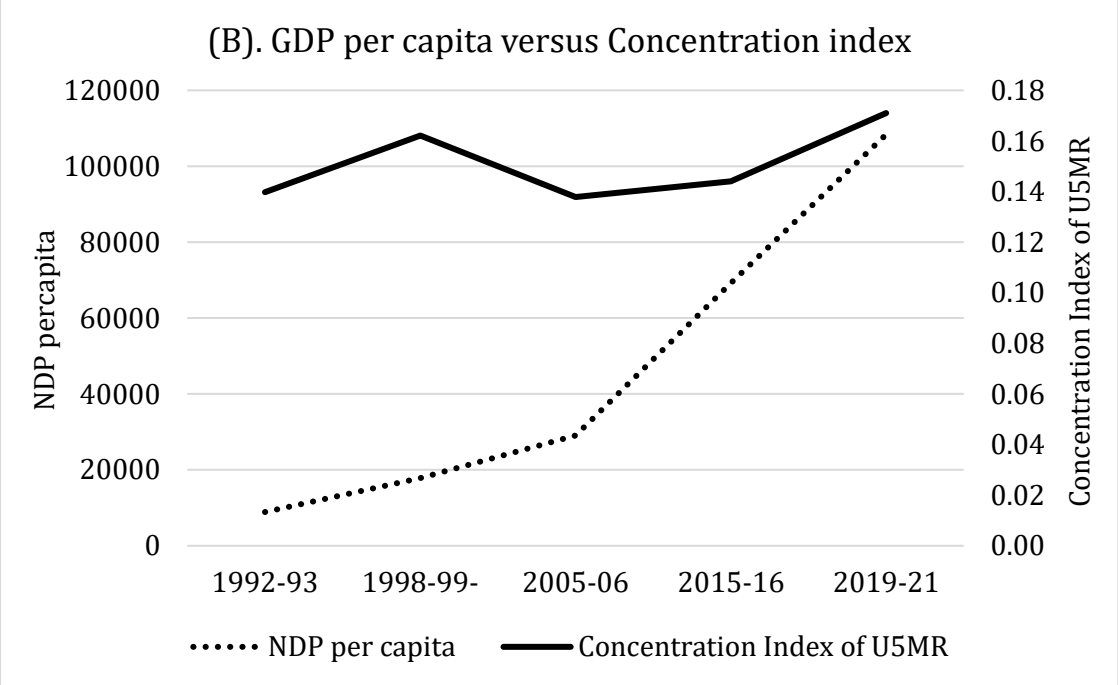
The nonlinearity argument for income and health outcomes is common among almost all literature in economics, demography and public health (Deaton, 2003). In particular, Preston argued that income is only a part of mortality reduction and health outcomes success story (1975). In Figure 4, we plot trends in per capita GDP (an indicator of economic growth) and the poorest-richest ratio in U5MR (an indicator of health inequality). Trends in per capita GDP during 1992 to 2021 reveal that it was growing at a slower rate until mid-2000s, thereafter witnessing an accelerated rise. In general, when economic growth is distributed uniformly across the population, a country is likely to experience a decline in health inequalities. However, India presented a typical case where we didn't observe a consistent declining trend in health inequalities (measured through both the poorest-richest ratio and CI in U5MR) with the rise in per capita GDP. While health inequalities experienced an increasing trend during 1992-93 to 1998-99, followed by a decline between 1998-99 & 2005-06, a steady rise can be observed in the years thereafter. In particular, this worsening of health inequalities was accentuated post-2015, which coincides with a new political regime that espoused aggressive new liberal policies of health care delivery where the role of publicly sponsored insurance-based private sector health care occupies centre stage instead of building public health infrastructure (Government of India, 2017).

The failure of growth in per capita income to translate into reduced inequalities in health is a symptom of uneven distribution of income, a hallmark of the neoliberal setup. In fact, Wilkinson (1999) points towards smaller status differences, essaying an important role in the impressive health performance of many centrally planned economies in the initial years. Similarly, in India rise in health inequality can be directly attributed to the widening status difference.

Figure 5 reveals another facet of the status of health inequalities in the country over time. Although the trends in U5MR across the income quintiles appear to be converging, a closer look would reveal that this convergence is largely a result of deceleration in improvement of U5MR amongst the higher income groups instead of marked progress in the lower income group. This insight can be further corroborated by looking at the level of U5MR in the richest income group in 1992-93 which hovered around 50 per thousand children aged 0-5 as compared to approximately 20 per thousand children aged 0-5 in 2019-21. The slope of the trend in U5MR among the richest income group was stagnant in the period between 2015-16 and 2019-21. Convergence in health inequalities cannot be considered as a reflection of improvement in health outcomes if it is driven by a retrogressing trend in the better-off groups.

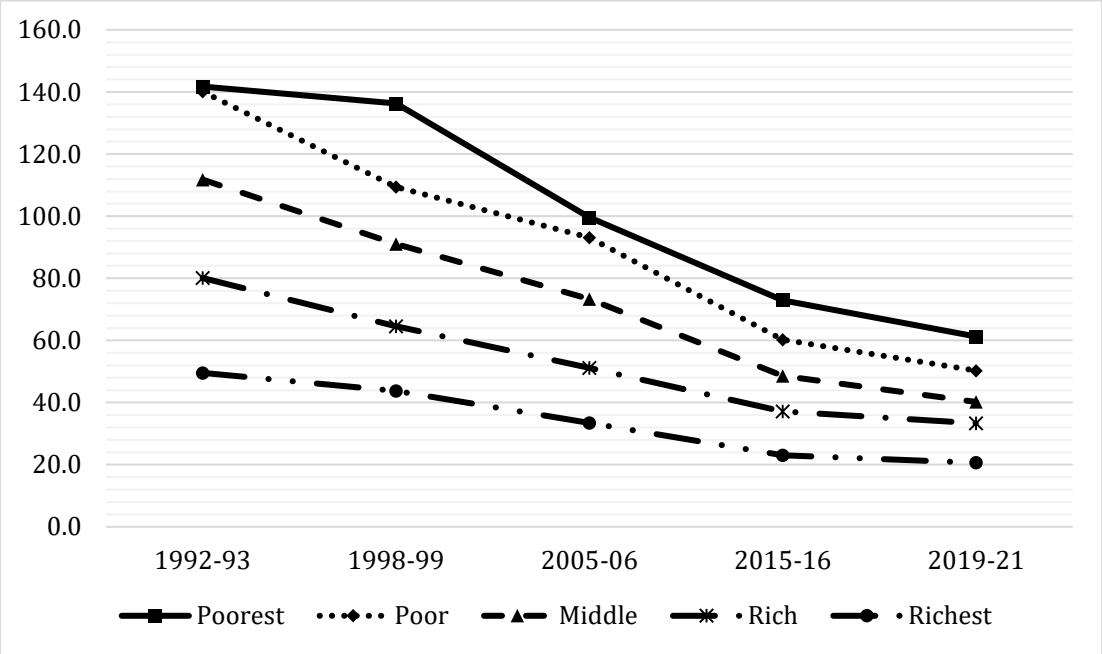
Figure 4. Trends of GDP per capita and Health Inequality in U5MR from 1992 to 2021





Note: The concentration index value was minus, implying pro-poor in U5MR; however, for plotting purposes, we took the absolute value: ABS(CI).

Figure 5: Trends in U5MR by Economic status



Correlation and Partial correlation

Figure 5 depicts the association between U5MR and Per Capita NSDP, suggesting a non-linear relationship, implying that economic growth does not necessarily result in better and equitable health outcomes. This association belies the notion of the trickle-down theory, which forms the pedestal of the neoliberal setup. Assumptions regarding the linear relationship between economic growth and better health outcomes, along with the trickle-down theory, have prevented targeted actions towards addressing unequal health outcomes. For economic growth to translate into equalized health outcomes there need to be concerted efforts towards bridging not only the income wealth but also fissures within the healthcare provisions of an economy.

The relationship between the Under-5 mortality rate and NSDP per capita has been plotted in Figure 6. Similarly, the partial correlation between Per Capita NSDP and CI were estimated adjusting for the average U5MR and share of private health care (Figure 7). In both cases, we find a positive relationship between per Capita NSDP and CI. This implies that the rise in economic growth failed to reduce health inequalities and instead accentuated them. Such an increase in health inequalities is taking place despite the rise in health averages. A similar finding was observed by Goli and Arokiasamy (2014). They reported that from the late 1990s, convergence in the decline of health inequalities has been replaced by emerging divergence. The coinciding of divergent trends in health inequality post-economic reforms signals the impact of neo-liberal policies.

Figure 6. Relationship between U5MR and Per Capita NSDP, 1992 to 2021.

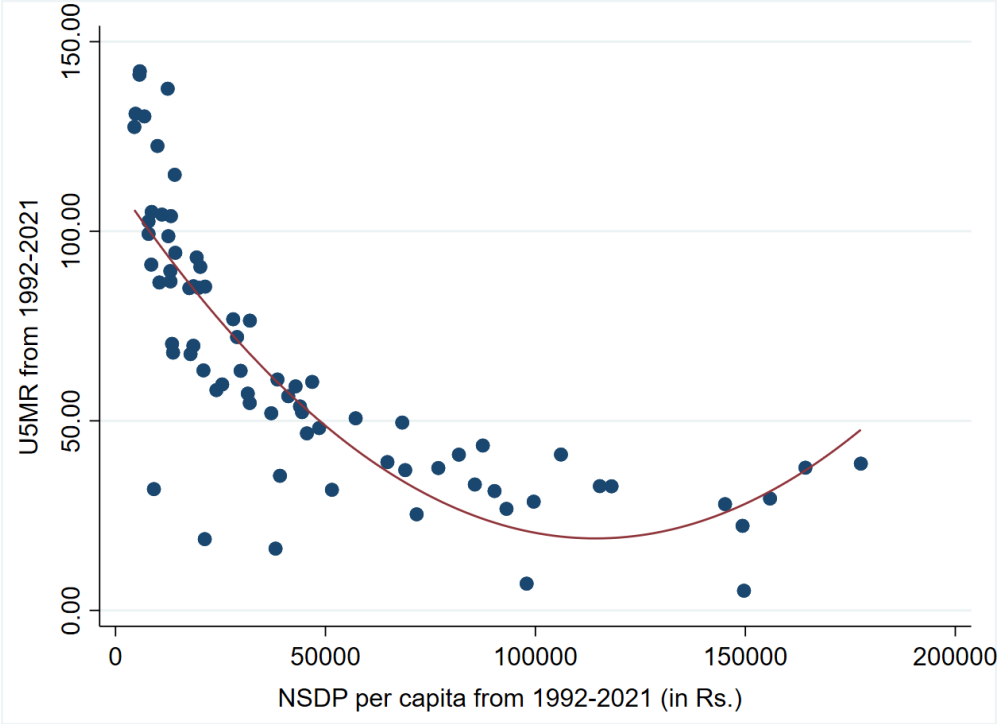
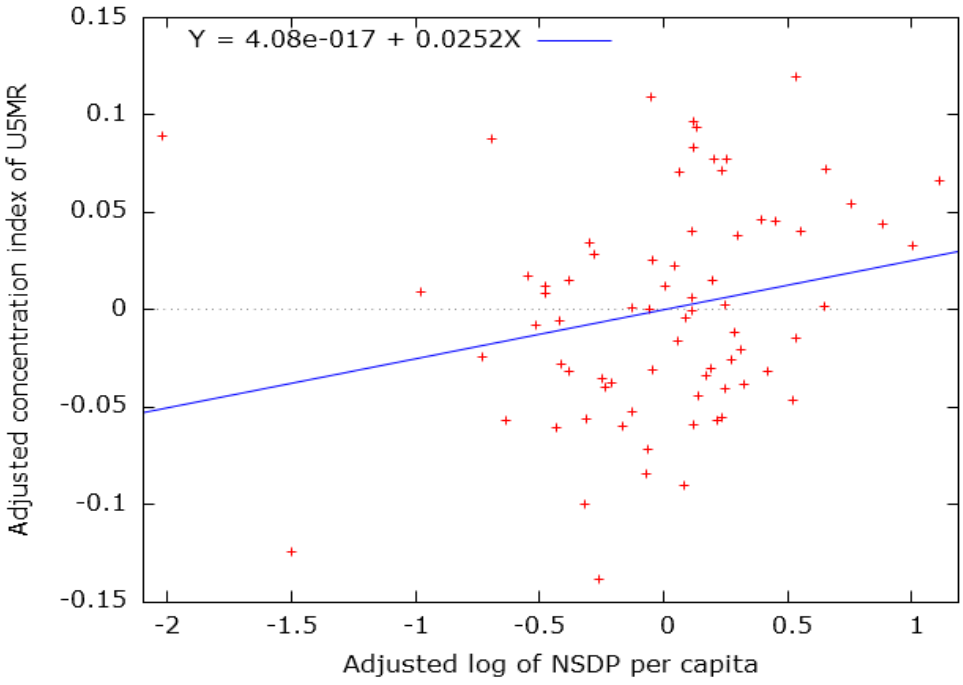
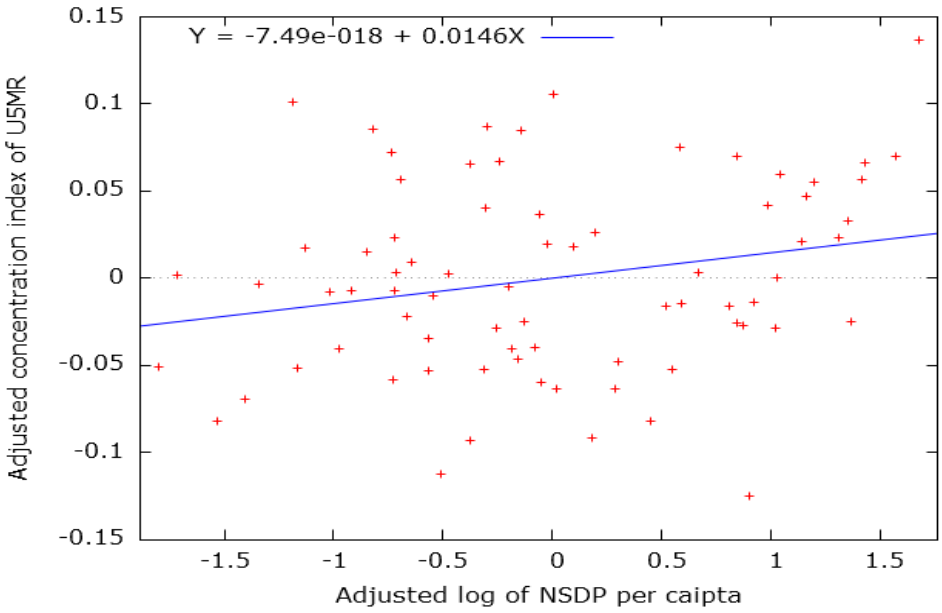


Figure 7. Partial correlation plot of NSDP per capita and Health inequality in U5MR.

(A) . Adjusted for Average U5MR



(B) Adjusted for share of rise in private health care



4.2 The Effect of Economic Growth on Health Inequality

The random effects model estimates in Table 1 suggest that throughout the period considered for the study, per capita NSDP consistently shows a positive association with health inequality, net of other control variables. A rise of almost twelve times in per capita NSDP did not translate into reduced health inequality and instead exacerbated it further. The results in model 5, which controls for male and female literacy, workforce participation rate, level of urbanization and state of residence, suggest that there was hardly any decline registered in the level of positive association between per capita NSDP and health inequality. In 1992-93, a unit change in per capita NSDP increased health inequality by 0.12 times which remains at 0.10 for 2019-21. This not only points to a continued positive relationship between NSDP and health inequality but also reveals that this positive relationship has not weakened over time. These findings are in line with Deaton's (2003) observation in the context of both developed and developing countries.

Table 1: Random effect estimates: Dependent variable-U5MR

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Interaction of log of NSDP Per capita and time					
log of NSDP pc and 1992	0.0753***	0.117*	0.130*	0.124*	0.125*
	(0.0166)	(0.0700)	(0.0714)	(0.0728)	(0.0762)
log of NSDP pc and 1998	0.0721***	0.110*	0.122*	0.116*	0.117*
	(0.0154)	(0.0648)	(0.0660)	(0.0674)	(0.0709)
log of NSDP pc and 2005	0.0664***	0.102*	0.115*	0.109*	0.110
	(0.0147)	(0.0616)	(0.0630)	(0.0642)	(0.0682)
log of NSDP pc and 2015	0.0617***	0.0940*	0.106*	0.101*	0.102
	(0.0136)	(0.0567)	(0.0581)	(0.0591)	(0.0634)
log of NSDP pc and 2019	0.0619***	0.0925*	0.105*	0.101*	0.102*
	(0.0131)	(0.0545)	(0.0560)	(0.0569)	(0.0616)
Female literacy rate		✓	✓	✓	✓
Male literacy rate			✓	✓	✓
Work force participation rate				✓	✓
Level of urbanisation					✓
State dummy		✓	✓	✓	✓
Constant	-0.540***	-0.972*	-1.376*	-1.367*	-1.370*
	(0.150)	(0.652)	(0.773)	(0.778)	(0.789)
Observations	75	75	75	75	75
Wald chi2	26.54	35.82	36.73	36.56	35.86
Number of states	15	15	15	15	15

Standard errors in parentheses

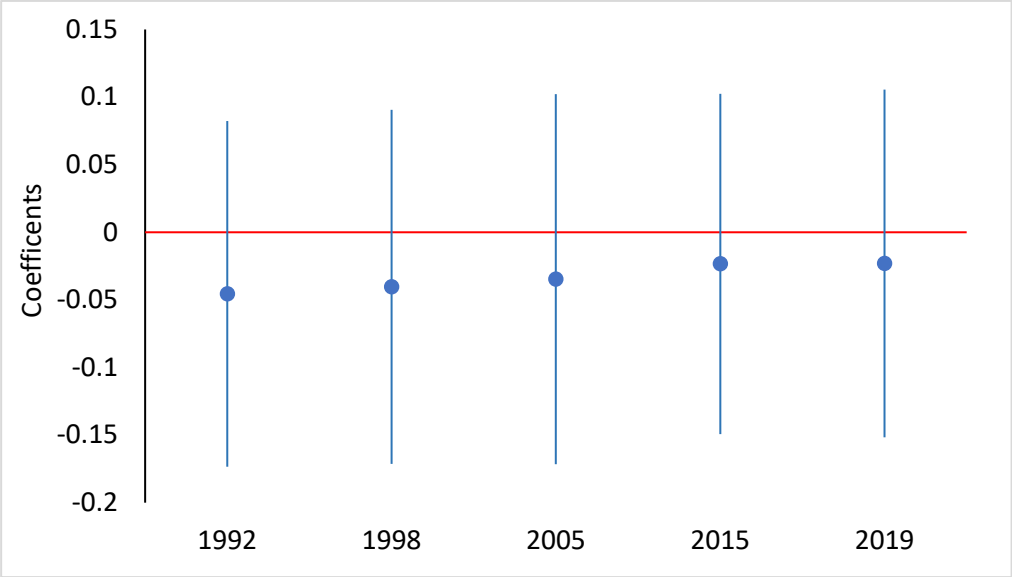
*** p<0.01, ** p<0.05, * p<0.1

Note: The concentration index value was minus, implying pro-poor in U5MR; however, for regression purposes, we took the absolute value: ABS(CI).

5. Robustness checks

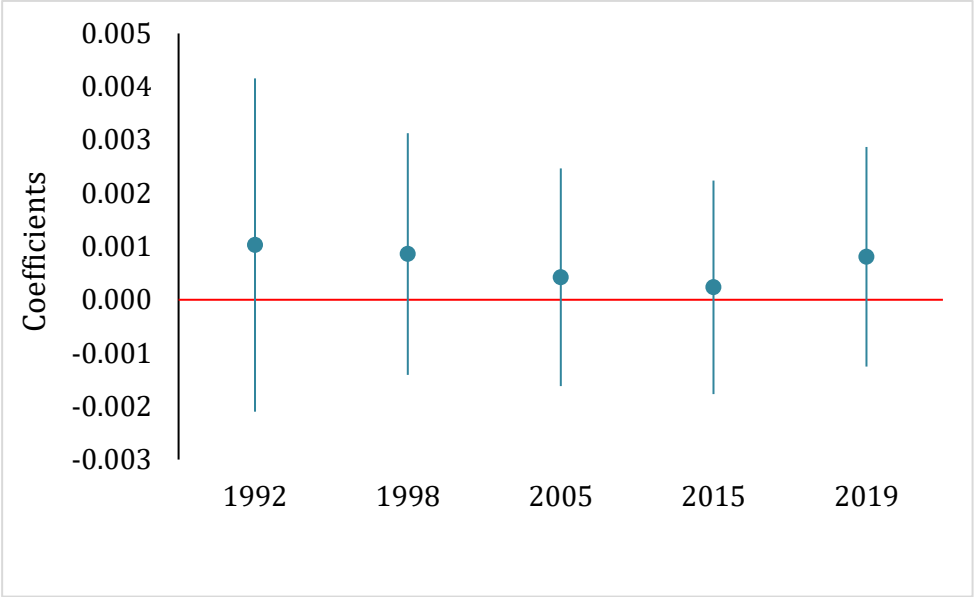
To affirm the main findings of the study, we carried out multiple robustness checks. First, we used per capita Public Health Expenditure (PCPHE) as an alternative indicator for neo-liberal policies. The rationale behind the choice of this alternative stems from the fact that austerity in public health spending is considered as a key political determinant of health and an indicator of neo-liberal policies (Viens, 2019). The fixed effects model plots depicting the interaction effects of PCPHE and time on health inequality suggest that public health spending consistently showed a negative association with health inequality (Figure 8). However, the period impact of PCPHE on the reduction of health inequality is declining. This can be attributed to the stagnant trend in PCPHE, which has been unable to keep at par with the rising out-of-pocket health expenditure.

Figure 8. Fixed effects estimates: The effect of the interaction of PCPHE and time on health inequality



Second, we used the share of private healthcare utilization as an alternative indicator for neo-liberal policies. Random effects model plots that show the interaction effects of share of private health care utilisation and time on health inequality have resulted in private health care utilisation consistently showing a positive association with health inequality (Figure 9). Although we observed a slight reduction in health inequalities after the introduction of the National Rural Health Mission in 2005, a reversal in the improving trend was again witnessed from 2015 to 2021 with the emergence of a new political regime in 2014, which is pursuing a more aggressive neo-liberal health care policy.

Figure 9. Random effects estimate: The effect of the interaction of share of private health care expenditure and time on health inequality



Note: The model is controlled for male-female literacy, workforce participation rate, level of urbanization, per capita NSDP and State dummies.

In the third set of robustness checks, we used the poverty ratio as an alternative predictor variable. Neo-liberal policies not only increase economic inequality but also slow down the progress towards the reduction in the poverty ratio. On the other hand, evidence suggests that a reduction in the poverty ratio is associated with a reduction in health inequality (Wagstaff et al., 2007; Deaton, 2013). To test this hypothesis in Indian context, we ran a fixed effect regression model by taking the interaction of poverty ratio and time as a predictor and inequality in U5MR as the dependent variable (Table 2). Our findings suggest that a positive association exists between the poverty ratio and health inequality, meaning that a decline in the poverty ratio helps reduce health inequality. This suggests that if economic growth is accompanied with poverty reduction, it helps in reducing health inequality.

To corroborate this finding, in the fourth set of robustness checks, we regressed the concentration index of under-5 mortality on the governance index for the year 2019, controlling for other socioeconomic variables (Table 3). The negative coefficient of the governance index appends to this understanding by indicating that with an improvement in governance, health inequality is reduced. The rationale for including the governance index as an alternate predictor is based on the insight that poverty reduction is necessary for reducing health inequality. Effective governance forms are the cornerstone of targeted poverty reduction programmes.

Table 2: Fixed effect estimates: Dependent Variable- Inequality in U5MR

VARIABLES	β
Interaction of Poverty ratio and time	
log of poverty ratio and 1992-93	0.00310*
	(0.00248)
log of poverty ratio and 1998-99	0.00360*
	(0.00265)
log of poverty ratio and 2005-06	0.00604**
	(0.00267)
log of poverty ratio and 2015-16	0.00654**
	(0.00271)
log of poverty ratio and 2019-20	0.00640**
	(0.00250)
Female literacy rate	✓
Male literacy rate	✓
Work force participation rate	✓
Level of urbanisation	✓
Log of NSDP Per Capita	✓
Constant	0.0506
	(0.514)
Observations	75
Number of id	15
R-squared	0.178

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3: OLS Estimates: Effect of Governance Index on Health Inequality

VARIABLES	Model 1
Governance Index	-0.0692
	(0.269)
Under 5 Mortality	✓
Poverty Ratio	✓
Level of Urbanisation	✓
Workforce Participation Rate	✓
Literacy Rate	✓
Public Private Ratio	✓
Per Capita NSDP	✓
Constant	-0.714
	(0.586)
Observations	15
R-squared	0.801

Standard errors in parentheses

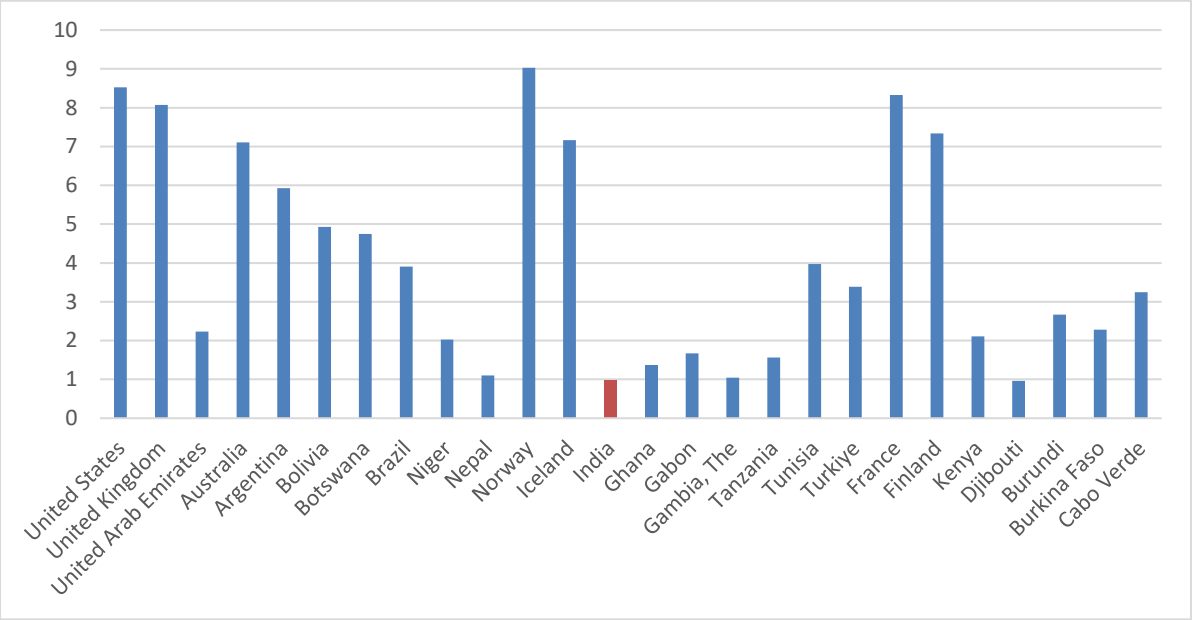
*** p<0.01, ** p<0.05, * p<0.1

Note: Since the governance index is not available for all time points, we carried out an OLS regression instead of panel data estimation.

5.1 How health inequalities in U5MR can be reduced?

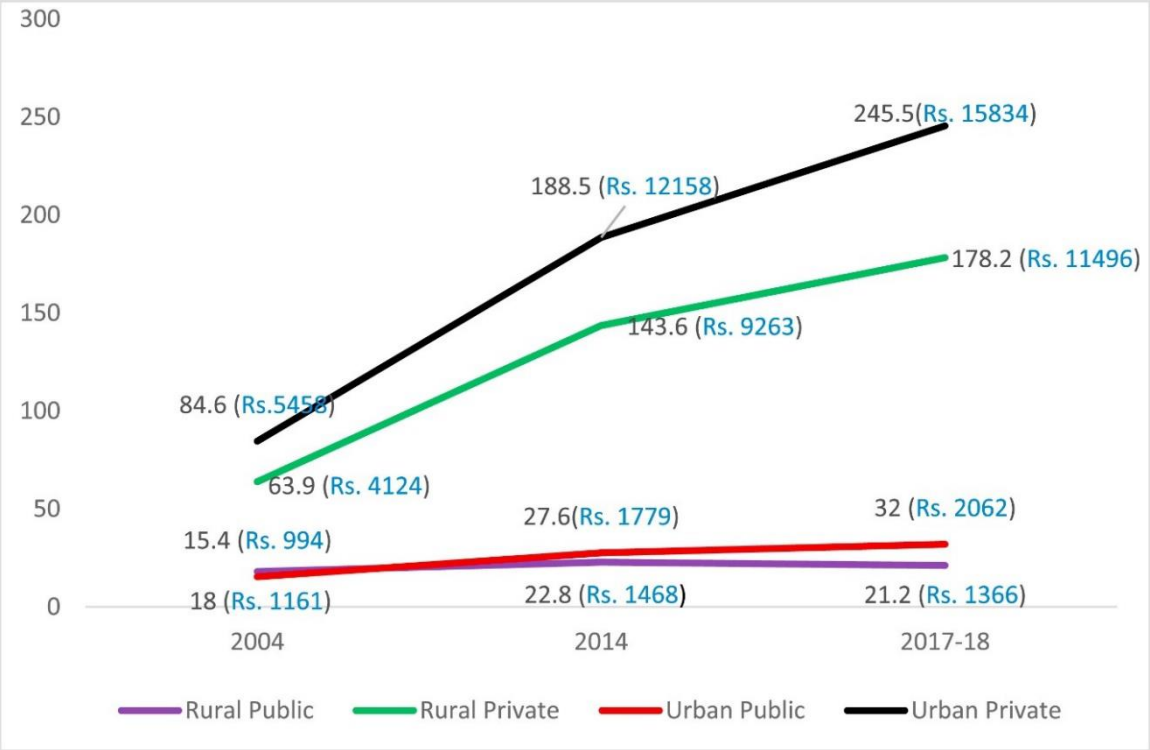
Following our empirical analysis, the effect of neoliberalism on increased health inequalities in U5MR can be clearly distinguished. This causation can be traced through the multiple pathways that have been outlined in the theoretical framework presented in this paper (Figure 3). Therefore, it becomes evident from the theory of the "Political Economy of Health" that alongside economic growth, poverty reduction and public health spending are two critical components (implying austerity and social cohesion domains of neo-liberal policies, respectively) for ensuring health for all in highly unequal societies like India. Indian health care delivery system in itself is highly hierarchal and compartmentalised (Dreze and Sen, 2012). The hierarchical nature of the healthcare delivery system in India hinders the accessibility of healthcare, thereby significantly impacting health inequalities. In addition to this, public health spending has been one of the lowest in the world, even lesser than many of the poorer economies of Sub-Saharan African countries (Figure 10). Figure 11 reveals the perils of inadequate health expenditure and its effects on health outcomes. Several countries are not spending on public health according to their economic size, thereby experiencing greater levels of U5MR. India serves as an example of this aberration. In this context, any efforts to reduce health inequalities must show a greater focus on poverty alleviation programmes and a rise in health care expenditure.

Figure 10: Public Health Expenditure as Percentage of GDP across the select countries, 2019



Particularly, if we take the case of reducing U5MR and inequality in U5MR in India, it is important to lessen the burden of maternity care expenditure on the households. Our analyses of three successive rounds of NSSO data (2004, 2014 and 2017/18) suggest except at the rural public facilities, the average OOPE for institutional delivery has increased significantly in both rural and urban areas even after adjusting to inflation in the prices. Figure 11 shows that the increase is the highest for urban private facilities (US$ 84.6 in 2004 to US$ 245.4 in 2017/18, raised by 66%). It also rose considerably in urban public facilities (US$ 58 in 2004 to US$162 in 2017/18, raised by 64%) and in rural private facilities (US$ 63.9 in 2004 to US$ 178 in 2017/18, raised by 64%).

Figure 11. Trends in mean OOPE (in US$) by place of residence and the level of care from 2004 to 2017/18 in India.



Source: Goli et al. (2021).

Note: Data values outside the parenthesis are in US$, while inside the parenthesis are in Indian rupees. OOPE, out-of-pocket expenditure.

Our analyses assume importance in the context of prevailing political austerity towards funding for public health in general and maternal and child health care in particular in India. In the case of improving equity in child survival, the country needs evidence on mechanisms determining health inequalities for designing policy inputs for the schemes running under a recently launched Pradhan Mantri Matru Vandana Yojana (PMMVY), a maternity benefit programme run by the government of India introduced in 2016. It is deemed to be an enhanced Conditional Cash Transfer (CCT) scheme for pregnant and lactating women of 19 years of age or older for the first live birth. And also, the country introduced the Maternity (Amendment) Bill 2017, an amendment to the Maternity Benefit Act of 1961, which was passed by the Indian parliament in 2017 (Government of India, 2017).

Considering these new developments, it is important to report whether incentives provided under the aforementioned schemes are enough to cover catastrophic payments incurred by the households on institutional deliveries and reduce inequalities in child survival chances in the country. Our study put forward two key messages for contemplation under PMMVY to improve MCH care and reduce inequality in U5MR. Firstly, considering the previous evidence on catastrophic expenditure for households due to institutional delivery (Goli et al., 2016) and the evidence of a fall in real wages and consumption levels in the country (Srivastava & Padhi, 2020), the rise in the OOPE on institutional delivery can become more catastrophic for the households and rise inequality in U5MR. Second, there

is a need to bolster the central contribution to CCT of low-income states under JSY programme following better performing states such as Tamil Nadu, Andhra Pradesh, Kerala and Telangana. These states provide CCT equivalent to or more than the state's average OOPE even in the private facility (Goli et al., 2021). India pledged $100 billion to lower maternal and under-five deaths by 2030, and unfortunately, the budget outlays for the health continue to be just more than 1% of Gross Domestic Product (GDP) (Ministry of Finance, 2020).

6. Conclusion and Wider Implications

Many quantitative studies have demonstrated that more neoliberal countries have poorer health compared to less neoliberal countries (Mooney, 2012; Arestis and Sawyer, 2021), but we hardly find any comprehensive documentation of evidence in Indian context. Analysing inequality in Under-Five Mortality Rate (U5MR) as a health outcome and per capita NSPD, per capita public health expenditure, share of private health care spending and poverty ratio as an indicator of neo-liberal policies, through the use of robust econometric assessment, we found that economic growth without poverty reduction and public health care spending raises health inequalities. At the macro-level income poses a positive relationship with health inequalities. Interpreting empirical findings of our study in the context of existing literature (Coburn, 2000; Coburn and Coburn, 2007) shows that income inequality, diminishing social cohesion and political morality and privatisation of health care are the proximate key mechanisms through which Neo-liberal policies act on health outcomes and raise health inequalities.

In the context of above said findings, we would like to bring back Virchow's philosophy: 'medicine is social science' to study the various ways in which social inequality is a contributor to ill-health and health inequalities. With poverty and social inequality having a central impact on the ability of people and populations to be healthy, it is political action around these states of affairs that determines the extent of our success in the prevention and mitigation of ill-health. Thus, a neo-liberal political ideology and its use of economic policies such as austerity have had a devastating effect on health and health equity. But this relationship is not merely descriptive, it is also normative. The social environment, and not individual factors, creates poverty, poor living conditions and illness which makes it difficult to sustain healthy lifestyles. This makes collective action and adequate funding necessary to assure the social conditions (i.e. a shared responsibility across society) under which people can be healthy, and state must play a vital role in creating this environment. The issue of economic development and health outcomes in India have to be seen in the larger context of the demands of democracy and social justice. During the last thirty years, the Indian economy has done very well in terms of the growth of GDP (Dreze and Sen, 2012). However, high growth failed translate into equitable distribution of health outcomes. These normative considerations demonstrate that ill health and social inequalities are not merely matters for public health specialists, demographers and economists to map and measure—they are also of central concern to political theorists to understand why there is an imperative to address them and establish the means by which it would be justified to do so. Crucially, however, the state can also use its power and political action to adopt ideological and policy positions that promulgate ill health and

health inequality. Finally, we conclude that integrating understandings of neoliberalism into theorising about health inequality enriches political economic and political demographic perspectives of health. Additionally, taking cues from the success of the Latin American Social Medicine Model (Hartman, 2016), India must implement "post-neoliberal" social and political-economic policies to counter neoliberal models that emerged in the 1990s and rising health inequalities. Post-neoliberal ideologies present alternative avenues for tackling issues related to equity and redistribution. More importantly, they ameliorate the lacunae present within neoliberal ideas that have served to heighten inequalities in crucial sectors like healthcare.

Politics and healthcare are intricately connected, although their linkages operate in a largely conspicuous manner. For long, these linkages have been overlooked in favour of analysing health outcomes through the socio-economic lens. However, the socioeconomic profile of a country is largely determined by its political leanings. These deterministic pathways have been outlined in the theoretical framework presented in this paper. Fiscal prioritisation of healthcare can largely impact the state of affairs in the healthcare system of a nation. As India's case would have it, greater percolation of neoliberalism in the country's political scenario has resulted in increased health inequalities for the country, operation through various mechanisms. A clear inclination towards austerity can be observed in the government's approach towards the health sector by observing the share of public and private health expenditure (Figure 10 and Figure 11).

Exploring such linkages, this study attempts to foray into nuances of India's shift towards neoliberalism and its consequence on the country's health outcomes and inequalities. Our analysis highlights the necessity of good health and healthcare to be viewed as a right for all and not an expensive choice that takes into consideration the income quintile of an individual. When we shed the commodified nature of health, the responsibility for its provision rests on the shoulders of the political forces operating in a country. Political perspectives on health not only touch upon the provisioning of healthcare but also deal with normative aspects related to ethics, accountability and political representation in terms of healthcare. More importantly, the political lens of healthcare highlights the notion of shared responsibility that forms the essence of a well-functioning political setup. This paper contributes to health policy and planning by identifying areas where, India needs to work to achieve efficiency with equity in health status.

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Appendix

Appendix Table 1: Descriptive statistics of the study variables

Variable	Observations	Mean	Std. Dev.	Min	Max
Year	75	2005.80	10.18	1992	2021
Concentration index of U5MR	75	-0.15	0.06	-0.29	0.03
U5MR	75	65.33	34.13	5.19	142.20
Total literacy rate	75	70.20	10.99	42.25	95.00
Female literacy rate	75	61.17	14.02	27.56	93.60
Male literacy rate	75	79.18	8.56	55.53	96.70
log of NSDP pc	75	10.30	0.98	8.41	12.09
Poverty ratio	75	21.63	11.44	0.79	51.91
Share of private health care	75	52.98	20.22	11.00	84.80
Log PCPHE	75	10.74	0.56	9.47	11.77
Work force participation rate	75	39.66	5.23	22.23	48.77
Level of urbanization	75	30.07	10.85	11.99	58.57
Governance Index	75	0.50	0.08	0.37	0.67

Appendix Table 2. Definition of the variables

Variable	Definition
Concentration index of U5MR	The concentration index is twice the area between the concentration curve and the 45^0-line, indicating no relationship between the two variables.
U5MR	Number children died by the age of 5 years per 1000 live births.
Total literacy rate	The percentage of population aged 15 and above who can both read and write with understanding a short simple statement about their everyday life.
Female literacy rate	The percentage of female ages 15 and above who can both read and write with understanding a short simple statement about their everyday life.
NSDP per capita	NSDP per capita is Net state domestic product divided by midyear population. NSDP at purchaser's prices is the sum of all the goods and services produced in a geographical boundary of state minus depreciation.
Poverty ratio	The percentage of population belongs to lowest two wealth quintiles of NFHS. The wealth quintile in NFHS is calculated including number and kinds of consumer goods they own, ranging from a television to a bicycle or car, and housing characteristics such as source of drinking water, toilet facilities, and flooring materials by using Principal component analysis method.
Male literacy rate	The percentage of male ages 15 and above who can both read and write with understanding a short simple statement about their everyday life.
Work force participation rate	The percentage of population aged 15 and above who are employed
Level of urbanization	The percentage of population living in urban areas
Public health expenditure (% GDP)	Total Public expenditure on health from domestic sources as a share of the economy as measured by GDP. Estimates of Public health expenditures include healthcare goods and services consumed during each year. This indicator does not include capital health expenditures such as buildings, machinery, IT and stocks of vaccines for emergency or outbreaks.
Governance Index	The governance index has been created by taking the average of six dimensions of governance of World Bank Governance Indicators (WGI), namely, Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption.
PCPHE	Total Public expenditure on health from domestic sources divided by midyear population.