Stages of Gender discrimination in India: Through Mortality rates and Sex ratios

Kshipra Jain*[1] and Malavika Belavangala[2]

Abstract

This paper seeks to identify turning points in gender discrimination, and consequently stages of patriarchy experienced by the Indian woman. In order to do so, the study argues for moving beyond the life expectancy approach to sex-ratio that captures extreme form of gender discrimination through differentials in survival rates estimated by rate of change of Mortality rates. The study based on the latest Census (2001, 2011) data and Statistical Registration system report, 2013 calculated Age-specific-sex-ratios and rate of change of Age specific- death-rate to identify the turning points. The empirically derived turning points leading to understanding of dynamics of patriarchy are further developed into identification of the seven stages of patriarchy. These stages beginning with the stage of missing daughter; neglected daughters, reproductive wives, neglected wives, venerated mothers, ignored grandmothers and natural survivors are then developed deriving from the gender literature to outline the specific features of gender discrimination in each stage. This examination of her survival helps us understand that gender inequalities are not random but regular and patterned, are deeply linked with other gendered evils.

Key words: Life expectancy, Age-specific-sex-ratios, Age-specific-death-rate, Gender discrimination, Patriarchy, Indian women.

Introduction

The phenomenon of missing daughters in India has been widely explored both conceptually and empirically. It was first recognized by Amartya Sen in 1992 by equating the sex ratio of 927 to around 37 million females missing from India's population structure. While accounting for almost half of global missing female births, India is witnessing an increase from 3.5 million missing female births in 1987-96 to 5.5 million in 2007-2016 (Saikia et al. 2021). Implicit in this conceptualization is recognition not just of gender discrimination but also of the specific form it can take before the birth. Several aspects of this discrimination, such as use of ultrasound technology as an instrument of gender discrimination, are not necessarily shared with the forms of discrimination that a woman experiences after she is born. This brings to the fore the possibility of the nature of gender discrimination changing across different stages of a woman's life. This paper seeks to identify these turning points in the nature of gender discrimination, and consequently the stages of discrimination experienced by the Indian woman. In order to do so, it first builds on the centrality of life expectancy in the human development literature to make a case for treating sex ratios as a comprehensive indicator of gender discrimination. It goes on to outline what an average sex ratio for a diverse country like India tells us about gender discrimination and what it does not. The third section presents the empirically derived turning points in sex ratios, leading to identification of the seven stages of patriarchy. The paper then goes back to the literature on gender relations in India to outline the specific features of gender discrimination in each stage of patriarchy.

*Corresponding Author

[1] Assistant Professor, Department of Economics, University of Rajasthan, Jaipur. Email id: kshipraaa@gmail.com. ORCID ID: 0000-0002-0502-5173.

[2] Researcher, National Institute of Advanced Studies, Bangalore. Email id: malavika.belavangala@gmail.com

Gender discrimination through the lens of stages: Theoretical understanding

The vast body of evidence on gender relations in India does point to the qualitative differences in the forms of discrimination, from the bias against educating girl child to inadequate health facilities for older woman. While as a daughter, she receives inferior care, nutrition, education and health facilities than sons (Borah, 2021); the nature of discrimination changes for woman into reproductive phase. In the Indian social structure, while a daughter may be unwanted, a daughter-in-law is essential to upholding the family system (Bryant et al., 2001). Her ability to procreate provides woman with access to health care service; yet generating a new set of discrimination and this time a married woman faces subordination not only to men but also to the more senior women, especially her mother-in-law (Kandiyoti, 1988). Although, as a mother-in-law, a woman acquires control and authority over younger women in the household, it subsides with her descend into older age. With a higher life expectancy and a lower mortality rate, an older woman does get a longer life span but is most likely to be widowed and dependent on others; the consequent socio-psychological and financial insecurity makes her vulnerable not only in economic terms but also in social status within the family and community. It thus does not require substantial observation to recognize varying phases of discrimination that women at different age-groups experience. The nature of discrimination also suggests that the precise combination of discriminatory practices a woman faces would vary across different stages of her life which could give us insights into overall picture of gender discrimination. Tracking the overall levels of discrimination would ideally be based on a summary indicator of the extent of discrimination faced by Indian women. The direction of change of such an indicator would help us identify periods when the extent of discrimination against women is increasing, as distinguished from periods when overall discrimination is on decline.

Summary indicator of Gender discrimination: The Need

The search for a summary indicator of gender discrimination would do well to build on the discussion that led to the development of the Human Development Index. Differences between men and women in the elements of the index would provide a sense of the extent of gender discrimination. The three elements that are used in this index – decent standard of living, long and healthy life, and being knowledgeable – are all domains of potential gender discrimination. It must, however, be noted that in terms of gender discrimination, severity of the effect of each element need not be the same. As the case of missing daughters makes painfully clear, gender discrimination in health is not just a matter of differences, but affects the very right of a woman to live. This aspect may be most evident in the case of missing daughters, but the impact of discrimination on health of woman is not confined to before they are born. Gender norms affect social and structural determinants of health, risky behaviours and access to quality health-care services (Heise et al., 2019). Such norms, values and expectations result in inequalities in health and wellbeing that extend across the life course and generations (Kennedy et al., 2020). Overall gender inequality in health can be serious enough to impact mortality rates, especially in developing societies, so much so that mortality has sometimes been associated with levels of development; "As society develops, mortality declines and, at

the same time, the excess female mortality characteristic of pre-transition societies shifts to higher male mortality" (Fix, 1991).

Life expectancy and Sex ratio: As indicators of Gender discrimination

The critical role of mortality in the process of gender discrimination leads us to the possibility of using life expectancy as a summary indicator of gender discrimination which is closely connected with health and mortality conditions. As it summarizes social, economic, behavioural and biological differences, life expectancy is accepted as an indicator of health while summarizing the human development index. Bilas, Franc and Bošnjak (2014) recognized it as an important synthetic indicator for assessing economic and social development of a country while Caselli & Drefahl (2017), revealed a strong correlation between life expectancy and the level of economic development for both the genders. There is a substantial literature that uses life expectancy at birth in the analysis and description of mortality levels, population health, wellbeing and longevity (Sharma, 2018). In fact, as it summarises mortality pattern that prevails across all the age-group, it is often used to reflect the integrated survivorship of the population across these ages (Missov, 2013). A comparison of life expectancy across genders would then provide an indicator of gender discrimination.

An empirical evaluation of gender differences in life expectancy brings us to an apparent paradox. The extensive evidence across the world of gender discrimination coexists with the fact that life expectancy of women is generally found to be higher than that of men. Several studies have pointed out that though men enjoy an advantage in various realms of society they continue to have a lower life expectancy at birth than women. This apparent contradiction, to some extent can, however, be traced to the way life expectancy is calculated: it assumes absence of any bias, including biological, when it takes the number of male and female births at par defined as radix of the life table. It thus ignores the widely prevalent practices of deliberately avoiding female births. This is a particularly serious gap in the Indian context considering the institutionalization of the initial bias against females as a well-documented phenomenon of missing daughters. This gap can be further widened if there is a greater challenge to the survival of women at later ages as well without undermining the impact of biological disadvantage to males. The limitations of life expectancy and the importance of identifying different phases of discrimination in the life of an Indian woman thus create a need for a more comprehensive indicator of gender differences in health. One such indicator is the sex-ratio: an important demographic parameter depicting the relative survival of women and men is often used to mirror the extent of prevailing equity between genders in a society (Shidhaye et al., 2012). As a powerful indicator of the social health of any society, it conveys a great deal about the state of gender relations. The daughter dispreference syndrome (Patel, 2004) can encourage human meddling in manipulating the sex-ratio at birth in favour of boys, and gets subsumed within mortality rates for the surviving women that continue to face discrimination in later stages of their lives. Early life discrimination against women is accentuated by conditions in the age group of 1-4 years. In contrast to rest of the world, India has excess female mortality in this age group (Kashyap, 2019). This pattern of female mortality levels being higher than biologically expected levels

relative to men is indeed a reflection of social discrimination (Krishnaji & James, 2002). Unlike life expectancy, the sex-ratio at each age takes into account the relative ability of women and men to survive earlier ages. In general, changes in sex-ratios are determined by mortality rates along with fertility and migration. Since the role of international migration in influencing the sex ratio for India is limited (Dyson, 2012); it is the fertility and mortality pattern that become critical.

With sex-ratios summarizing the effect of fertility bias and mortality pattern, they can act as a summary indicator of gender discrimination across age-groups. Like all summary indicators it pools together a variety of local forms of gender discrimination. It is thus not a substitute for a finely grained picture of gender discrimination. What it does provide is a picture of the additional dimension of the overall increase or decrease in levels of gender discrimination across age-groups.

The Research gap: Objective

The study of the patterns of sex-ratios at different stages in a woman's life is not entirely new. There have been age specific analyses of sex-ratios, which tend to be associated with social, biological, and economic aspects of a woman's life. There are studies that relate to social aspects of gender discrimination that occur at particular ages, such as discrimination before birth and accentuation of this problem at the stage of infant mortality (Singh, 2010). There are other studies that focus on the biological aspects, such as the analyses of sex-ratios in childhood, reproductive age, and post-reproductive ages. The ages associated with these stages also tend to be standardized at 0-15 years for childhood, 15-45 years for reproductive age and above 45 years for the post-reproductive phase (Anderson & Ray, 2012). And there are studies that focus primarily on the working-age population such as the one on the adult sex-ratio for a population aged 20-50 years (Schacht & Smith, 2017). These studies use sex ratios to point to very different aspects of gender discrimination. There is little doubt that their findings are all very relevant to understanding the working of gender discrimination in each of the age-groups that have been chosen for study. There is, however, no reason to believe that these are the only three phases of the experience of gender discrimination. There may well be other phases that do not fall easily into these pre-determined categories making a case to look for relevant phases in terms of what data has to tell us. Therefore, with this background the study is focussed on identifying the phases of gender discrimination, if exists, in the life of an Indian woman. Indeed, the objective underlies the need for having a life course approach which mandates time series data; however, given the availability of the data the study has tried to dig deeper into the phases of gender discrimination with the cross-sectional data.

Data source and methodology

The study aligned with its objectives has used a mix of secondary empirical data and literature to identify the stages and type of discrimination within those stages.

The empirical picture is generated by first using data from the latest available Census of India and mortality rates available from the Sample Registration System (SRS). The population data from the Census of India, 2011 and mortality data from SRS Statistical Report, 2013 were used to calculate age-specific-sex ratios (ASSR) and analyse the pattern of age-specific-death- rates (ASDR).

It must be emphasized that these changes in mortality rates are not just a matter of statistical detail. An increase in mortality rate of women reflects adverse conditions for which she pays the price of death. These conditions may be a part of a larger socio-economic crisis that affects both men and women. But where the changes in the mortality rates differ substantially between genders, they reflect a fundamental change in gender relations. Such an analysis would necessarily depend on the specific data that is used. It is quite possible, even likely, that different data sets would throw up different patterns. This necessitates an investigation into more than one dataset to rule out randomness. Therefore, the study used two rounds of Census of India conducted a decade apart i.e. Census 2001 and 2011.

The phases then identified were substantiated with existing literature to uncover each and every type of discrimination to the best possible extent that a woman is likely to experience. The study beginning with the conceptualization of patriarchy extend it to its changing forms and dynamics in the context of Indian woman.

Stages of gender discrimination: Through empirical lens

An analysis of ASDRs and ASSR in table 1 reveals that while ASDRs are higher for women than for men till the age group of 15-19 years, it is only after the age of 55 that the overall sex-ratio turns favourable to women. The mortality advantage of women, despite being evident in the age-group of 20-24 years and consistent thereafter, does not get simultaneously reflected in ASSR. This is primarily because of the extent of the adversity faced by women till the age of 20. The phenomenon of missing daughters as well as the higher mortality of girls until they pass their teenage years ensures an adverse sex ratio even when ASDR drop lower than men in later age-groups until the age of 55. This is not to suggest that there are only two phases in the gender experience of women: before and after the age of 20 years. The sex ratios do not suddenly change at the age of 55. The crossing of the threshold of an equal number of men and women is a part of a longer trend marked by changing ASSR. These changes are also not always uniform or even in a single direction. There are periods when ASDR is increasing more for women than for men, and periods when this is not the case. As Table 1 tells us, 15-19 years age-group in 2011 saw a more rapid increase in ASDR for females when compared to males, even as in -the next age group of 20-24 years, the rate of change in the ASDR for men was much more than for women. These differential rates of change in the ASDR of men and women may not be substantial enough to turn an adverse sex-ratio into a favourable one, but they do alter the extent of adversity in ASSR. The points where sex-ratios change direction thus reflect important changes in the mortality rates of women, and these changes in mortality rates are a statement of, among other things, gender relations. Even when ASSR is averse to women there can be phases when sex-ratios are improving and phases when they are moving in the opposite direction. In order to capture these phases, it is necessary to consider the points where sex-ratio changes direction and not just where it crosses the threshold.

Charting the ASSR from two rounds of Censuses (2001 and 2011) throws up a pattern with distinct changes in direction across age-groups, but the argument of randomness loses much of its conviction with the same turning points (see figure 1). The ASSR in the two censuses are not very

different in 0–4-year age-group, and they both continue to fall till 15 -19 age-group. Both censuses then reveal an improvement in ASSR till the age-group of 25-29 years. The next turning point is in the age-group of 30-34 years revealing an adverse pressure on ASSR. This pressure led to an immediate decline in the ASSR in 2001 Census. In 2011 Census, this pressure serves to immediately flatten the curve of rising ASSR recorded in the previous age-group, before following the downward trend of the 2001 Census in succeeding age-groups. This generally downward trend continues, in both censuses, with some fluctuations, all the way to the age-group of 50-54 years. The two censuses then record a consistent improvement till the age-group of 65-69 years. The age-group of 70-74 years provides the next turning point, with both censuses recording a worsening of the ASSR. In the age groups of 75 years+ there is a consistent improvement in the ASSR favouring women.

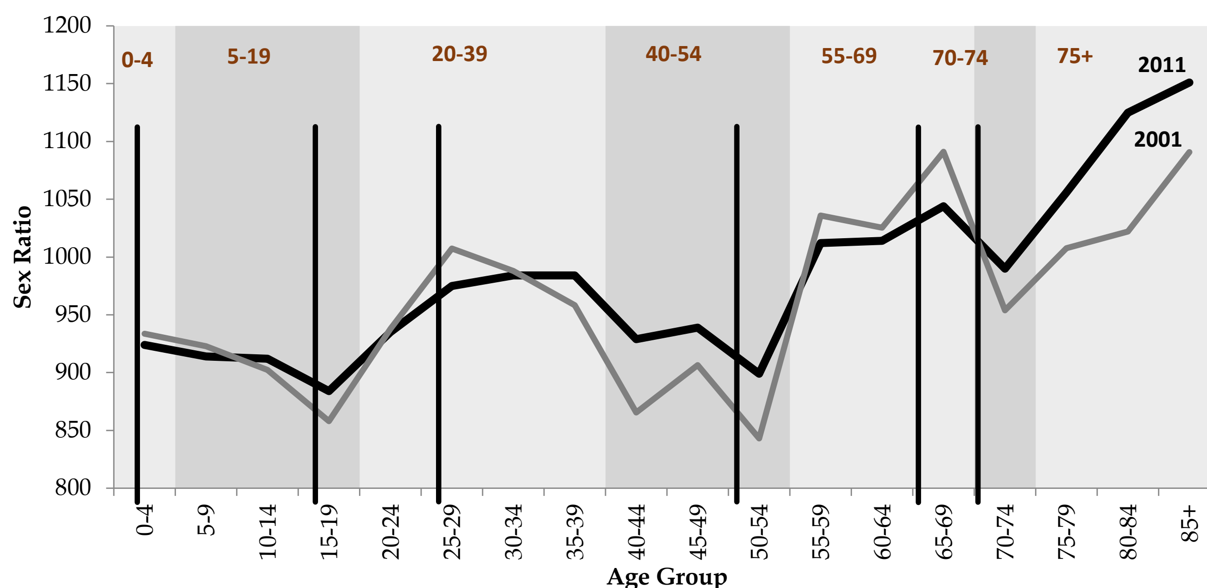
The consistent pattern of changes in ASSR over two censuses a decade apart points to seven distinct phases in the life of an Indian woman: the phase till birth and infancy; that between the years 5-19, the phase between 20-29 years, the period between 30-54 years, the phase between 55-69 years, relatively short phase between 70-74 years, followed by the elderly phase after the age of 75 years. The suggestion that these phases tell us more about the changing condition of the Indian woman during the course of her life is more persuasive when the pattern is seen in the context of the nature of patriarchy.

Table 1 Age-specific-death-rates, Rate of Change and Sex-ratio, India, 2011

Age-Group (years)	Age-Specific-Death-Rate		Rate of change of ASDR		Sex Ratio
	Male	Female	Male	Female	
< 1	43.55	44.93			
1-4	1.88	2.86			
0-4	10.57	11.49	0.00	0.00	924
5-9	0.82	0.80	-0.92	-0.93	914
10-14	0.56	0.57	-0.32	-0.29	912
15-19	0.97	1.11	0.74	0.96	884
20-24	1.72	1.47	0.78	0.32	935
25-29	2.09	1.60	0.21	0.09	975
30-34	2.51	1.65	0.20	0.03	984
35-39	3.66	2.27	0.46	0.38	984
40-44	4.94	2.84	0.35	0.25	929
45-49	7.53	3.93	0.52	0.38	939
50-54	10.35	6.41	0.37	0.63	899
55-59	15.52	9.07	0.50	0.41	1012
60-64	20.69	16.13	0.33	0.78	1014
65-69	32.71	26.80	0.58	0.66	1044
70-74	54.91	43.22	0.68	0.61	990
75-79	81.68	61.20	0.49	0.42	1056
80-84	129.91	102.01	0.59	0.67	1125
85+	226.11	202.41	0.74	0.98	1151
$r^{@}$	0.849***	0.828***	0.379	0.434*	NA

Note: @: Pearson's correlation
*** 1% level of significance
* 10% level of significance
Source: Author's calculation based on Census of India, 2011 and SRS, 2013

Figure 1 Turning Points in ASSR: 2001 & 2011



Stages of Gender discrimination: Through Dynamics of Patriarchy

The widespread prevalence of patriarchal norms in every walk of life has made them so ubiquitous that they appear natural. Empirically evident phases in the life of an Indian woman – between succeeding turning points in sex ratio – could well mark changing forms of patriarchy a woman faces with its seven distinct stages.

Stage 1: Missing Daughter

The phenomenon of missing daughters has brought to the fore the extent of son preference in India as well as the ability to transform this bias into an effective means of preventing the birth of girls. The extent of this phenomenon does vary across the country when compared with that of the German sex ratios (94.8 girls per 100 boys) which is closest to the natural sex ratio of 95.2 (Sen, 2003). Using the German child sex ratios as a benchmark, Sen (2003) could split the country into nearly two halves: with all states in north and west falling much below the benchmark, while states in south and east tend to equate or exceed the benchmark. Yet the extent of the bias is, taken as a whole, very substantial. Some of this bias has been understood in economic terms, with lower earning capacity of women making them less economically valuable to their families. According to the Labour Bureau Survey, the female labour force participation rate has fallen from what it was in 2013-14 at 31.1 to 26.9 in 2016-17 (GoI, 2022). Not only in terms of their labour force participation, women experience wage differentials even after accounting for differences in skills and educational qualifications. A wide range of empirical studies have highlighted the role of discrimination in explaining the observed wage differentials between genders in labour market (Chakraborty & Mukherjee, 2014). There are also situations where scarce household economic resources are sought to be conserved by limiting the birth of daughters (Croll, 2001).

The burden of paying a dowry at the time of marriage is one of the major disincentives for having daughters. As pointed out by Srinivasan (2005), while capturing the cost–benefit calculations of being a girl, "bringing up a daughter is like watering a neighbour's plant." In societies where marriage is

universal, daughters are born and raised with the belief of being *parayadhan* (Uberoi, 2005), whereas sons tend to be the investment for old age security.

These patterns of discrimination against women are further consolidated by advances in medical science and technology. The advent of technology such as ultrasound and amniocentesis permitting sex determination in 1970s has strengthened process of shifting post-natal discrimination to prenatal. There has been an increase in prenatal sex selection by ensuring selective abortions of female foetuses from female infanticide and postnatal withholding of care (Guilmoto, 2009). In fact, taking away the right to life from a female foetus appeared much more convenient and cost effective than subjecting her to neglect and discrimination later in life. This was in fact categorically displayed in advertisements such as "Pay 50 Rupees now to save 50,000 Rupees later" (Basu, 1999). This led to an increased prevalence of mobile private sex determination clinics with ultrasound technology which often also provided abortion services (George, 1997). Further, with increasing cost of living and smaller family size as a norm without much change in preferences; misuse of technology with increasing access, has worsened sex-ratios. Bhalotra and Cochrane (2010) estimated that diffusion of these technologies led to selective abortion of 480,000 girls per year between 1995 and 2005. It has enabled couples to resort to sex-selective abortions in order to meet their desire for at least one son and a small family size (Kshyap & Villavicencio, 2016).

The official response to this misuse of technology has been primarily through legal measures. The government of India enacted the Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994 which came into force in 1996, making it illegal to determine the sex of the foetus. The act was later amended in 2003, which essentially banned the practice of trying to influence the sex of the child before conception by using techniques such as sperm sorting. These legal responses, while worth appreciating; are, however, not very successful in meeting the targets they set out. Their relative ineffectiveness has contributed to technology playing the role of an accelerator and enabler of pre-existing patriarchal norms.

Stage 2: Neglected Daughter

Escaping prenatal discrimination by being born, a girl gets exposed to pro-longed phase of discrimination during her infancy and childhood. This is the phase wherein she is systematically introduced to the prevailing patriarchal social order through various norms, cultures, and practices aligned with values attached to a girl. These differential values get manifested through various gender discriminatory practices such as access to preventive care, nutrition, educational opportunities, mobility, etc. There is substantial evidence that points out more resources such as immunizations, medical treatment, nutrition are invested in sons than daughters in India which leads to poorer health status of a girl and hence, higher mortality (Das Gupta 1987). The extent of parental neglect outweighs biological advantage of females; consequently, female infants have lower chance of survival. This discrimination to varying degrees, continued to be practised in other domains of life. It first becomes evident in the form of smaller rations of food and nutrition (especially for higher-order females) relative to boys. In fact, this discrimination in nutrition could act as a tool to reduce inherent mortality advantage of

females. As argued by Das Gupta (1987) depriving female children of food was an explicit strategy used by parents to achieve a small family size and desired composition. While the discrimination in nutrition can have serious repercussions on health, it gets aggravated by unequal access to treatment in case of ill-health. Subject to discriminatory practices in both preventive and curative health care; access, availability and quality of healthcare provided to females is disparately poor with low, traditional or no treatment for ill health (Iyer et al., 2007). Putting these practices together explains the reason for India's having the most anomalous levels of excess female mortality in the world, particularly in the age group of 1-4 years (Kashyap 2019). While such practices influence mortality pattern of females, the discrimination continues in other spheres of life which may not directly influence the mortality but provides ground for rationalizing her subordinate status.

While son, as an inheritor of family resources, carrier of patrilineal line, and support for parents in old age, internalises his right to preferential treatment; daughters in patrilocal marriage institutions are considered not only as a burden on household resources, but as soon as they enter into adolescence, they must be protected. Her mobility and social interactions beyond the confines of household - factors which can threaten the very basis of sexual and ideological control by their families – needs to be controlled (Malhotra et al., 1995). As it is, girls have fewer schooling opportunities relative to boys (Sharma et al. 2015), with the need to "protect" them, they experience truncated schooling and also get married at a young age. The practice of child marriage is so widely prevalent that India alone accounts for one-third of child brides worldwide (UNCF, 2014). Getting married during adolescence not only robs a girl of various opportunities, it has its own serious health implications. Child marriage leads to early child-bearing, which increases adverse reproductive and sexual health outcomes, resulting in higher levels of maternal and child morbidity and mortality and HIV infection (Pettifor et al., 2008). In the context of education, while it does not have a direct influence on mortality pattern, it does have long-term implications that even extend to the next generation. Several studies have shown positive relationship between education of mothers, household autonomy, and nutritional status of their children (Borooah, 2004). Conversely, truncated schooling is associated with lower earning potential and access to financial resources, lower use of health services, higher fertility and lower agency and decision power within households (Svanemyr et al. 2015).

There is an official response through policy and legal measures to curb the neglect and aversion towards daughters. The government through its various schemes, such as *Beti Bacho, Beti Padhao*, CBSE *Udhan* Scheme, *Sukanaya Samridhi Yojana*, is trying to channelize resources towards empowering girls. Simultaneously such acts and laws have been passed that strike at the factors that make girls unwanted; specifically, the Hindu Succession Act, 2005; the Prohibition of Child Marriage Act, 2006; the Dowry Prohibition Act, 1961.

Stage 3: Reproductive Wives

As a woman moves into marriage and child-bearing ages, there is a fundamental change in the nature of patriarchy. The patriarchy's need to continue families' lineage redefines itself with a male-centric purpose with women of child-bearing age as well-cared-for investments that hold special value and

status in society and within the family. Essentially, it is preparing women for future pregnancy that requires early screening and treatment of morbidities (Stephenson et al., 2018); she receives access to better healthcare facilities. Corroborated by Rural Health Survey data, Dandekar recognized as early as 1975, connection between child-bearing and provision of healthcare facilities at marriageable age. Concomitantly, increasing costs of living have prompted families to opt for smaller family size but with an almost negligible compromise on deep-rooted son preference. This results in woman being put under tremendous pressure to conceive and abort as many times required until a boy is conceived, during which patriarchy must 'provide' conditions conducive to her wellbeing. As women bear sons, they have greater agency and more bargaining power within the household (Hindin, 2000) and can also offset the subordination they endure as they can eventually exert control and authority over their subservient daughters-in-law (Kandiyoti, 1988). Recognizing reproduction as a way to acquire new sources of care, power and authority (Kabeer, 1999) a woman thus internalizes paramount importance of marriage and reproduction institutions.

It is also the age for men to show off their power and aggression as an expression of 'masculinity'. This dimension of patriarchy encourages men to seek security, status, and rewards by gaining control over people and situations around them. Fearing the ability of other men to control them, and as a defence against loss and humiliation, men exert overt control over their immediate environments, often engaging in risky behaviour, violence and crime at these ages (Wizemann & Pardue, 2001). The percentage of male criminals is highest in 18–30-year age-group compared to any other age-group (NCRB, 2013). Androcentric beliefs surrounding gender roles reinforce women's subordination to men through purdah system and other similar status markers, while their economic dependence pushes men to fulfil the role of breadwinner in the family. Eagerness to prove their strength and increased responsibility to provide for their needs puts pressure on their physical and mental health, increasing susceptibility to various morbidities and thus a higher risk of mortality.

In the complex intersectionality of India's social structure and modernization have created newer domains of patriarchy (Khurana, 2018). This ideology of paternalism when applied to gender relations and accepted by deference on the part of women masks and obscures unconscionable inequalities behind the facade of 'care'. Paradoxically, by redefining motherhood as shaping future generations in the patriarchal mould in-turn support patriarchy further.

Stage 4: Neglected Wives

On completion of the role of a woman as child-bearer, her primary responsibility gets redefined with respect to shaping future generation within the patriarchal mould and existing social structure. While she seeks to find purpose in the lives of others, the prioritized treatment she received during childbearing years does not seems to be rationalized within the patriarchal framework with the completion of her reproductive role. Her position once again reduced to that of the neglect which has far-reaching implications on her mental as well as physical health which could further get aggravated with the onset of menopausal symptoms.

As an important age-specific health issue, menopause and related changes to women's health fail to receive due attention and remain taboo in India (Jejeebhoy, 1995). While a few women consider it a liberation, have fewer complaints and report positive attitudes, it remains medically associated with higher risks of osteoporosis, heart diseases, diabetes, hypertension and breast cancer (Pathak & Parashar, 2010). In addition, health consequences of multiple pregnancies and denial of health care services throughout her childhood, increases her susceptibility to various morbidities. The risk of cardiovascular and metabolic diseases particularly increases amongst women with a history of pregnancy-related complications and adverse pregnancy outcomes (Neiger, 2017). These risks however remain unaddressed as patriarchy limitedly identifies woman's health needs only with adolescence and reproduction (Bruce, 2003). Consequently, she herself fails to recognize health issues and remains reluctant to seek professional healthcare leading to lower rates of medical consultation resorting to home remedies (Hafiz et al., 2007). Among women who do recognize it as a healthcare need, additional barriers usually social are faced to receive medical treatment in the form of limited access to physicians and focus on diseases related to producing progeny that is considered significant enough to warrant concern (Kaur & Talwar, 2009).

The shift in social attitudes and withdrawal of care post-reproduction adds to her psychosocial vulnerabilities as she feels a loss in the purpose of life, faces mental health issues and increased levels of stress and depression (Formanek, 2013). These conditions become major contributors to increased female mortality in 40-54 years age-group. The consequent decline in ASSR exposes another dimension of patriarchal hegemony which has been masked by computation of sex-ratios in broad age intervals, and overshadowed by heavily-reported mortality advantages of females.

Stage 5: Venerated Mother

In the process of rearing a child, while a woman experiences neglect; her keen desire and efforts to mother a male child are grounded in the anticipation of gaining social status, authority and decision-making power as the mother of head of the household. Kandiyoti (1988) recognizing cyclical nature of a woman's power in the household from being a daughter-in-law to becoming a mother-in-law, encourages woman towards thorough internalization of the patriarchal norms. The possibility of acquiring an opportunity for control in later years over younger female members that could probably offset her own loss of control to men; she becomes protector of the patriarchy and a symbol of the continuation of patriarchal norms through her sons and grandson. As a mother-in-law, to suppress conjugal bond of her son with his wife to keep it secondary and claim primary allegiance of her son become source of power and security. The constrained set of norms creates various interpersonal strategies and coping mechanisms that ground patriarchy in her social choices. However, these interpersonal strategies do not alter structural patriarchy rather she learns to bargain with patriarchy (Kandiyoti, 1988).
Transforming herself from neglected wife into repository of patriarchal conventions, she thus assumes moral and cultural role of 'Venerated Mother'. The motherhood is glorified and eulogized not only in society but in the wider constructs of literature, art and religion. Culture actively mediates patriarchal authority in restricting her behaviour and activities to sacred, chaste,

dutiful and resolute self-sacrificing qualities of an imposed morality. Institutions of family, religion, education, politics, media and society elevate mothers to deified positions within family and society, not allowing her to realize that they are instruments of male domination, and convincing her to actively want to essay these roles. Acting in accordance to patriarchal values, a woman's relative survival increases so that she outnumbers males in later age: her inherent mortality advantage becomes pronounced after age of 55 and lasts for the remainder of her life span.

Stage 6: Ignored Grandmothers

Institutionalized patriarchy takes away the status of venerated mother as soon as she descends into older age and tends to lose control and authority. Susceptible to greater health risks, likely widowed and having their power relinquished to junior women in the household, elderly women are disproportionately oppressed by newer patriarchal structures, registering another unpleasant experience.

Within the family, limited ability of an elderly woman to contribute to domestic chores and growing frailty increases dependency on others (Desetty & Patnam, 2005) while on the other hand, denial of educational opportunities and limited interaction with the outside world make it difficult for her to adapt to newer transformations, rendering them unwanted and ignored. Studies have highlighted poor treatment of elderly women within the home: subject to abandonment, neglected health, high levels of undernourishment and prominent risk of mortality (Vera-Sanso, 2005). Further, due to gender differences in life expectancy, practice of marrying older men and social restrictions on widows' right to remarry, incidence of widowhood is much higher among older women (Chen & Bhaduri, 2000) with implications for their mortality, health and economic wellbeing (Sudha et al., 2006).

The official response to addressing vulnerability of elderly women is through legal structure and policy formulations such as Maintenance and Welfare of Parents and Senior citizen act, 2007; Indira Gandhi National Old Age Pension scheme, 2007; the Protection of women from Domestic Violence Act, 2005; the National Policy for older persons, 1999. The realization of these policies and act within the realm of patriarchy is however difficult. An entire range of customary practices, emotional pressures and social sanctions prevent her from acquiring actual control over assets. This stage of 'ignored grandmothers' is a direct product of their subordinate status to men throughout their life-cycle– father during childhood, husband in adulthood, and son in old age.

Stage 7: Natural Survivors

In the deeply embedded patriarchal society of India, women enter the last stage of their lives overcoming institutionalized discrimination patterns as well as culturally imposed value systems to survive into very old age. After the age of 75, a woman's life is marked by completion of filial responsibilities as well as needs of patriarchy. She is hence reduced to a lower position within the household and in society, carrying social burdens of being old, deserted, or widowed, with poor legal and institutional arrangements to support her (Ahmed-Ghosh, 2009). Ageing women witness a new form of discrimination as living burdens, subject to practices that dangerously unify elderly issues with gender hierarchies to increase

vulnerabilities. Longevity, hence becomes an added predicament in the Indian culture and value system. Nevertheless these 'natural survivors' have surmounted mortality risks at every age since conception and have overcome several manifestations of patriarchy not deterring her natural survival, even aggregating them together at various stages of life.

Conclusion

The use of sex ratios to evaluate the extent of gender discrimination is well established in the arguments about missing daughters. This paper extends this indicator beyond birth to other phases of the life of an Indian woman. In doing so it recognizes that gender discrimination has a direct effect on the body of the woman, to the point of being reflected in her mortality rates which in turn gets reflected in ASSR: a change in the direction of movement of ASSR can be seen as a turning point in the extent of gender discrimination. The years between each of the turning points in the age of a woman are thus phases that the Indian woman goes through in the course of her life.

The rise and fall of sex ratios across different phases of a woman's life does suggest different levels of pressure on a woman's mortality, but these changes must not be seen as an increase or decrease in the extent of patriarchy. All that they indicate is that the demands of patriarchy on a woman's body change across different phases of her life. In her reproductive phase, for instance, patriarchy demands the birth of a male child, which in turn requires a healthy body. The ASSR in this phase thus tend to improve, though in countries like India, with their extended practice of son preference, this phase represents strengthening of the social foundations of patriarchy.

The empirical emergence of distinct phases demarcated by changing sex-ratios suggests that different dimensions of patriarchy are emphasized across the phases of a woman's life. This paper has traced these phases for India as a whole, but it is quite possible that the precise points where the changes take place need not be uniform across the country. It is possible, even likely, that the precise age at which a woman moves from one stage of patriarchy to another would vary across different local social and cultural conditions. It would not be a surprise if the turning points in rural areas are not identical to those in urban areas, or that they differ across caste and other identity groups. But while the precise ages at which a woman's experience of patriarchy changes may vary across time and place, it is important to note that the Indian woman's experience of patriarchy changes with age, and sex ratios are useful indicator of the precise turning points in this process of change.

Limitation

The study while contributing to nuances of gender discrimination by investigating it through the experience of a woman herself needs to be comprehended keeping in mind its limitations in terms of data. While the nature of the study demands for a cohort-based research which mandates primary survey; however, until the stages exists at a universal level, conducting a survey will have a limitation, Therefore the study first investigated the sex ratios based on Census to identify if the patterns exists and can be linked to discrimination duly recognizing the data availability.

Declaration of conflicting interest

No conflict of interest was reported by all the authors

Funding Acknowledgement

The work was supported by the Tata Consultancy services as a part of their funding to Inequality and Human Development Program.

Acknowledgement

The authors express their deepest sense of gratitude to Prof. Narendar Pani, Head, Inequality and Human Development Program for his constant guidance and motivation during the preparation of manuscript. Also, the authors are greatly indebted to the reviewers for providing their valuable insights which has immensely helped in improving the quality of the manuscript.

Reference

Ahmed-Ghosh, H. (2009). Ageing and Gender in India: Paradoxes of a Feminist Perspective. Asian Women, 25(2), 1-27.

Anderson, S. & Ray, D. (2012). The age distribution of missing women in India. Economic and Political Weekly, 47 (47/48), 87-95

Basu, A. (1999). Fertility decline and increasing gender imbalance in India including possible southern Indian turnaround. Development and Change, 30, 237-263. https://doi.org/10.1111/1467-7660.00116

Bhalotra, S. & Cochrane, T. (2010) Where have all the young girls gone? Identification of sex selection in India. IZA Discussion Papers 5381, Institute for the Study of Labor (IZA), Bonn

Bilas, V., Franc, S., & Bošnjak, M. (2014). Determinant factors of life expectancy at birth in the European union countries. Collegium Antropologicum, 38(1), 1–9. PMID: 24851591.

Borooah, V.K. (2004). Gender bias among children in India in their diet and immunisation against disease. Social Science Medicine, 58 (9), 1719-31. https://doi.org/10.1016/s0277-9536(03)00342-3

Borah, G. (2021). Gender gap in life expectancy in India and role of age groups: A comparison between before and after male –female life expectancy at birth crossover. PLoS ONE 16(12), e0260657. https://doi.org/10.1371/journal.pone.0260657

Bruce, J. (2003). Married adolescent girls: human rights, health, and developmental needs of a neglected majority. Economic and Political Weekly, 38 (41) 4378-4380. http://www.jstor.org/stable/4414139

Bryant, C.M., Conger, R.D., & Meehan, J.M. (2001). The influence of in-laws on change in marital success. Journal of Marriage and the Family, 63 (3), 614-627 http://www.jstor.org/stable/3654637

Caselli, G., & Drefahl, S. (2017). Future mortality in low-mortality countries. Chapter in World Population & Human Capital in the Twenty-First Century: An Overview. Oxford Scholarship Online. https://doi.org/10.1093/oso/9780198813422.003.0009

Chakraborty, S. & Mukherjee, S. (2014). Gender wage gap in the Indian labour market: Evidence from the NSS 66th round data. The Indian Journal of Labour Economics, 57(2), 259–280.

Chen, M. A., & Bhaduri, A. (2000). Perpetual mourning: Widowhood in rural India. Oxford University Press, USA.

Croll, E. 2001. Endangered Daughters: Discrimination and Development in Asia. London and New York: Routledge.

Dandekar, K. (1975). Why has the proportion of women in India's population been declining? Economic and political weekly, 1663-166. http://www.jstor.org/stable/40738302

Das Gupta, M. (1987). Selective discrimination against female children in rural Punjab, India. Population and Development Review, 13, 77–100. http://www.jstor.org/stable/1972121?origin=JSTOR-pdf

Desetty, R., & Patnam, V.N. (2005). Attitudes and problems of female senior citizens. Indian Journal of Gerontology, 19(1), 77-80

Dyson, T (2012). Causes and Consequences of Skewed Sex Ratios. Annual Review of Sociology, 38, 443-461. http://dx.doi.org/10.1146/annurev-soc-071811-145429

Fix, A.G. (1991) Changing sex ratio of mortality in the Semai Senoi, 1969–1987. Human Biology, 63(2):211–20. PMID: 2019414

George, S. (1997). Female infanticide in Tamil Nadu, India: from recognition back to denial? Reproductive Health Matters, 10: 124-132. https://doi.org/10.1016/S0968-8080(97)90093-8

Government of India (2022). Female Labour force Participation. Ministry of Labour & Employment, New Delhi.

Guilmoto, C. Z. (2009). The sex ratio transition in Asia. Population and Development Review, 35(3), 519-549. http://www.jstor.org/stable/25593663

Hafiz, I., Liu, J., & Eden, J. (2007). A quantitative analysis of the menopause experience of Indian women living in Sydney. Australian and New Zealand journal of obstetrics and gynecology, 47(4), 329-334. https://doi.org/10.1111/j.1479-828x.2007.00746.x

Heise L., Greene M.E., Opper N. et al. (2019). Gender inequality and restrictive gender norms: framing

the challenges to health. Lancet, 393: 2440-2454 https://doi.org/10.1016/S0140-6736(19)30652-X

Hindin, M. J. (2000). Women's autonomy, women's status and fertility-related behaviour in Zimbabwe. Population Research and Policy Review, 19(3), 255-282. http://www.jstor.org/stable/40230270

Iyer, A., Sen, G., & George, A. (2007). The Dynamics of Gender and Class in Access to Health Care: Evidence from Rural Karnataka, India. International Journal of Health Services, 37(3), 537–554. 10.2190/1146-7828-5L5H-7757

Jejeebhoy, S. J. (1995). Women's education, autonomy, and reproductive behaviour: Experience from developing countries. OUP Catalogue.

Kabeer, N. (1999). Resources, agency, achievements: Reflections on the measurement of women's empowerment. Development and Change, 30 (3), 435-64. https://doi.org/10.1111/1467-7660.00125

Kandiyoti, D. (1988). Bargaining with Patriarchy. Gender and Society, 2(3), 274-290. http://www.jstor.org/stable/190357

Kashyap., R. (2019). Is prenatal sex selection associated with lower female child mortality? Population Studies, 73, 57-78. https://doi.org/10.1080/00324728.2018.1442583

Kashyap, R. & Villavicencio, F. (2016) The Dynamics of Son Preference, Technology Diffusion, and Fertility Decline Underlying Distorted Sex Ratios at Birth: A Simulation Approach. Demography 53, 1261–1281. https://doi.org/10.1007/s13524-016-0500-z

Kaur, M., & Talwar, I. (2009); Age at natural menopause among rural and urban Punjabi Brahmin females. The Anthropologist, 11(4), 255-258. https://doi.org/10.1080/09720073.2009.11891112

Kennedy, E.,Binder, G., Humphries-Waa, K., et al. (2020). Gender inequalities in health and wellbeing across the first two decades of life: an analysis of 40 low-income and middle-income countries in the Asia-Pacific region. Lancet, 8 (12), E1473-E1488. https://doi.org/10.1016/S2214-109X(20)30354-5

Khurana, N. (2018). Evaluating the Evolution of Patriarchy in India and the West. International Journal of Gender and Women's Studies, 6(2), 114-126. DOI: 10.15640/ijgws.v6n2p12

Krishnaji, N. & James, K.S. (2002). Gender differentials in adult mortality: With Notes on Rural-urban Contrasts. Economic and Political Weekly, 37 (46), 4633-4637.

Malhotra A., Vanneman, R. and Kishor S. (1995). Fertility, Dimensions of Patriarchy and Development in India. Population Development Review, 21(2), 281-305. https://doi.org/10.2307/2137495

Missov, T. I. (2013). Gamma-Gompertz life expectancy at birth. Demographic Research, 28(9), 259–270. https://doi.org/10.4054/DemRes.2013.28.9

Miller, B. D. (1981). The endangered sex: Neglect of female children in rural North India. Ithaca, NY: Cornell University Press.

Nandita, S., Meh, C., Ram, U. et al., (2021). Trends in missing females at birth in India from 1981 to 2016: analyses of 2·1 million birth histories in nationally representative surveys. Lancet, 9(6), E813-E821.

National Crime Records Bureau. (2013). Accidental Deaths and Suicides in India 2013. National Crime Record Bureau, Ministry of Home Affairs, Government of India.

Neiger, R. (2017). Long-term effects of pregnancy complications on maternal health: A review. Journal of clinical medicine, 6(8), 76. doi: 10.3390/jcm6080076

Office of Registrar General of India. (2001). Census of India. Ministry of Home Affairs, Government of India, New Delhi.

Office of Registrar General of India. (2011). Census of India. Ministry of Home Affairs, Government of India, New Delhi.

Office of Registrar General of India. (2013). Report of Sample Registration System. Ministry of Home Affairs, Government of India, New Delhi

Patel, T. (2004). Missing girls in India. Economic and Political Weekly , 39(9), 887-889.

Pathak, R. K., & Parashar, P. (2010). Age at menopause and associated bio-social factors of health in Punjabi women. The open anthropology journal, 3(1). **DOI:** 10.2174/1874912701003010172

Pettifor AE, Levandowski BA, MacPhail C. et al. (2008) Keep them in school: the importance of education as a protective factor against HIV infection among young South African women. International Journal of Epidemiology, 37, 1266-1273. doi: 10.1093/ije/dyn131

Schacht, R., & Smith, K. R. (2017). Causes and consequences of adult sex ratio imbalance in a historical US population. Philosophical Transactions of the Royal Society B: Biological Sciences, 372(1729), 20160314. DOI: https://doi.org/10.1098/rstb.2016.0314

Sen, A. (1992). Missing women. British Medical Journal, 304(6827), 587. doi: https://doi.org/10.1136/bmj.304.6827.587

Sen, A. (2003). Missing women--revisited. British Medical Journal, 327(7427):1297-1298. doi: 10.1136/bmj.327.7427.1297

Sharma, R. (2018). Health and economic growth: Evidence from dynamic panel data of 143 years. PLoS ONE, 13(10), e0204940. https://doi.org/10.1371/journal.pone.0204940

Shidhaye, P. R., Giri, P.A., Nagaonkar, S. N., Shidhaye, R.R. (2012). Study of knowledge and

attitude regarding prenatal diagnostic techniques act among the pregnant women at a tertiary care teaching hospital in Mumbai. Journal of Education and Health Promotion, 1: 36. DOI: 10.4103/2277-9531.102049

Singh, J. (2010). Socio-cultural Aspects of the High Masculinity Ratio in India. Journal of Asian and African Studies, 45(6), 628–644. DOI: 10.1177/0021909610373903

Srinivasan S, (2005).Daughters or dowries? The changing nature of dowry practices in south India, World Development, 33 (4), 593-615. DOI: https://doi.org/10.1016/j.worlddev.2004.12.003

Stephenson J, Heslehurst N, Hall J, et al. (2018). Before the beginning: nutrition and lifestyle in the preconception period and its importance for future health. Lancet, 391, 1830–1841. DOI: https://doi.org/10.1016/S0140-6736(18)30311-8

Sudha, S., Suchindran, C., Mutran, EJ., et al. (2006). Marital status, family ties, and self-rated health among elders in South India. Journal of Cross-Cultural Gerontology, 21(3-4), 103-120. doi: 10.1007/s10823-006-9027-x

Svanemyr, J., Amin, A., Robles, O.J., Greene, M.E. (2015). Creating an Enabling Environment for Adolescent Sexual and Reproductive Health: A Framework and Promising Approaches. Journal of Adolescent Health 56, S7–S14. DOI: 10.1016/j.jadohealth.2014.09.011Uberoi, P. (2005). The family in India beyond the nuclear versus joint debate. In M. Khullar (Ed.), Writing the women's movement: A Reader, New Delhi: Zubaan

United Nations Children's Fund. (2014). Ending Child Marriage: Progress and prospects, UNICEF, New York

Vera-Sanso, P.(2005). They don't need it, and I can't give it': Filia support in South India. Aging without children: European and Asian perspectives on elderly access to support networks, 77-105. DOI: 10.2307/j.ctv287sfsb.8

Wizemann, T.M. & Pardue, M.L. (Eds.). (2001). Exploring the biological contributions to human health: does sex matter? Washington DC: National Academics Press.