**Exploring linkages between Domestic Violence   
& Infant Mortality in India**

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**Research Background**

Despite globalization and economic growth, the quality of health, educational and other important societal developmental parameters have only improved marginally in developing economies. Commonly referred to as The Global South[[1]](#endnote-1), which includes countries in Africa and South East Asia, their developmental trajectory has been shaped through first colonization, then decolonization and now as the recipients of developmental aid from The Global North[[2]](#endnote-2). This paper aims to explore linkages between Infant (IMR) and Child Mortality Rates (CMR) in India and incidences of domestic violence, along with other relevant factors. Infant mortality rate[[3]](#endnote-3) compares the number of infant deaths (less than or equal to 12 months) in a given year by 1,000 live births in the same year. Child mortality[[4]](#endnote-4) is the probability per 1,000 live births that a newborn baby will die before reaching age five under current age-specific mortality patterns.

There are several societal, economic and health concerns for exploring linkages between IMR/CMR and domestic violence. Countries with high incidences of IMR/CMR inevitably have poor health and educational infrastructure which leads to low development outcomes and an unproductive workforce. This requires increased investments in health and social upliftment policies, which are difficult to implement and track. India ranks 130 in the World Human Development Index[[5]](#endnote-5) with a score of 0.640, putting it in the “Medium Development Category”. Saudi Arabia, ruled by a religious monarch, known for its human rights violations[[6]](#endnote-6) and where women were not even allowed to drive up until a few years ago[[7]](#endnote-7), ranks much higher than India at 39 in the HDI Index. This is a clear indicator of how far behind India lags in terms of development standards when compared globally with other countries.

Additionally, regressive attitudes towards gender roles hampers female empowerment. As women constitute for almost half of the population in several countries, low levels of female education, health and safety measures translates to half the population being even more underdeveloped than the rest. This has a spillover effect as women are primary caretakers for their children and an educated and empowered mother will be able to make more sound and responsible decisions for her children. In terms of Gender Equality, India ranks 120in the Global Gender Gap Report which ranks countries based on women’s economic participation, education, health and political empowerment.[[8]](#endnote-8)

Lack of education and ingrained stereotyped gender roles lead many parents to marrying off their daughters at relatively early ages, sometimes as soon as the girl is 13 or even younger. A manifestation of regressive attitudes towards women is seen in early/child marriage of adolescent women and girls and high incidences of domestic violence. The National Family Health Survey-3 (2004-05) reports the median age for marriage for girls is still just over 16[[9]](#endnote-9). According to the Census of India, 2011, over 5 million women in India have been married before the legal age of consent at 18.[[10]](#endnote-10)

Domestic violence is a pertinent issue in south-east Asian countries, with several factors exacerbating its impact and existence. With limited information on sex-education and family planning, young brides often become young mothers very quickly and have several children through their reproductive age. Income disparities, socio-economic limitations and high cost of private medical care further limit access to quality health care, crucial for newly born babies and children under the age of 5. For women of poorer families and those living in rural areas, accessing quality healthcare for themselves and education facilities for their children becomes even more difficult. This ties us back to the earlier point, that in the absence of adequate medical and health facilities, sometimes the survival rate of these children is often low, leading to high IMR and CMR when compared to developed countries in the Global North.

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| **Figure 1: Violence against Women in India** |
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| **Source:** <http://evaw-global-database.unwomen.org/en/countries/asia/india?formofviolence=b51b5bac425b470883736a3245b7cbe6> |

Such environments when compounded by poor living conditions further lower developmental growth. Despite the existence of building codes and development regulations, the built form of cities in The Global South is visibility different from city planning standards followed in the Global North. High living costs in cities has led to proliferation of slums, exacerbating poor living conditions and unhygienic surroundings in very high densities. A Slum is defined as a congested living space of around or more than 300 population with inadequate sanitation, lighting, ventilation and infrastructure facilities[[11]](#endnote-11). The absence of basic infrastructure facilities in slum settlements in urban areas makes it difficult to improve quality of life and standards of living, detrimental to the health of new-born babies. In India, approximately 35% of the population lives in urban areas, the rest spread across rural areas and semi-urban areas and towns. The quality of health care and facilities is further limited when one moves away from big cities. Keeping these socio-economic conditions in mind and understanding that healthcare and development is more than just access to facilities, this paper seeks to examine social and familial causes impacting IMR and CMR in India.

**Research Question**

Exploring linkages between domestic violence, and infant and child mortality rates in India.

**Research Problem**

Do households with higher levels of domestic violence display higher levels of infant and child mortality rates? If yes, what are the possible factors and why? If no, what factors can explain current mortality rates?

**Research Methodology**

The paper will consist of a literature review to understand studies in the field and draw conclusions. Independent analysis will be conducted using DHS Data, which is based on National Family Health Surveys, India 2015-16. Additional data sources from “ourworldindata.org” will be used for validation wherever necessary.

**Literature Review**

Accurately estimating IMR & CMR rates is important to understand the magnitude of the issue at hand. In Fig 2 & 3, even though IMR for India has declined from 10% in 1985 to less than 4% in 2015, it is still higher than other countries, even Mexico for that matter. India fares equally poorly in CMR where it is above the world average rates of approximately 5% in 2015.

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| **Figure 2: Infant Mortality Rates** |
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| **Figure 2: Child Mortality Rates** |
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In Women’s empowerment and domestic violence, the authors Kavita Sethuraman, Richard Lansdown and Keith Sullivan study the role of sociocultural determinants in maternal and child undernutrition in South India. Their findings indicated significant impacts of women’s empowerment on nutrition, malnutrition, gender equality and ability to end violence against women. Psychological and sexual abuse increases the risk of malnutrition in mothers and their children. Ending gender-based violence against women can have significant improvement on the health and nutritional status of children (Sethuraman, Lansdown, & Sullivan, 2006).

Authors Monal Shroff et all conclude that maternal autonomy is inversely related to child stunting, in Andhra Pradesh, India. They define maternal autonomy as the ability of a women’s personal power in the household and her ability to influence and change her environment. Using NFHS -2 data, attitudes towards domestic violence is a sub-indicator of maternal autonomy. Controlling for household socio-economic conditions, they find that higher maternal autonomy resulted in significantly less likely to have a stunted child. It is highly evident that maternal autonomy, decision making and prevalence of violence, independently and collectively have a significant outcome on standards of living, and health outcomes (Shroff, Griffiths, Adair, Suchindran, & Bentley, 2013).

In effects of domestic violence on perinatal and early childhood mortality, authors Saifuddin Ahmed, Michael Koenig and Rob Stephenson examine evidence and linkages from North India. Their findings indicate an increased risk of perinatal and neonatal mortality (2.59 times higher) in mothers who have experienced violence during the course of their last pregnancy as compared to those who didn’t. In another paper submitted by the same authors, they use NFHS-2 data to substantiate their above findings to arrive at a similar conclusion that women who have experienced one or more episodes of recent domestic violence are at higher risks of perinatal and neonatal mortality (Ahmed, Koenig, & Stephenson, 2006).

In Associations between Wife-Beating and Fetal and Infant Death, Shireen Jejeebhoy examines evidence from Rural India using community-based data from 2 distinct north and south Indian states. Data indicates that wife-beating and domestic violence is a common practice, justified by household and societal attitudes towards it. A consequence of this entrenched violence against women is significant “pregnancy loss”, IMR and fetal mortality rates (Jejeebhoy, 1998).

Seconding the study is Leland Acherson in Intimate Partner Violence (IPV) and Death among Infants and Children in India. The authors aim to substantiate the link between IPV and death among infants and older children using NFHS -2. They find a strong association between household IPV and the mother’s inability to care for her child due to psychological stress and violence victimization (Ackerson & Subramanian, 2009).

Authors Jay Silverman et all take the analysis a step further by stating that maternal exposure to spousal violence has a greater impact on female infants and children as compared to male. They find significant results on maternal exposure to violence and greater IMR among female infants and children as compared to male children (Silverman, et al., 2001).

**Analysis**

**Table 1: Calculating Domestic Violence Index**

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Description automatically generatedBased on National Family Health Data, 2015-16, a domestic violence index was computed from several variables that capture attitudes and incidences of domestic violence towards women in households. Table 1 shows this index, which is continuous and increases from 3.5 to 14, with 14 being the highest incidence of domestic violence in households. It can be seen that the bulk of incidences of violence are on the lower end of the spectrum, indicating lower levels of violence.

In order to calculate infant and child mortality rates, the variable had to be created from existing data on age. As NFHS collects age in CMC[[12]](#footnote-1) format, the age of the interview was subtracted from the CMC code for age of the child to arrive at the present age. In Table 2, 5.03% of infants died before completing their 1st birthday or on the completion of their 1st birthday. Table 3 indicates CMR of 6.26%. For those infants and children whose interview before their 1st or 5th birthday, their status is not known, and they are treated as missing values for the purpose of this study.

**Table 2: Infant Mortality Rates in India**

N = 1,315,617

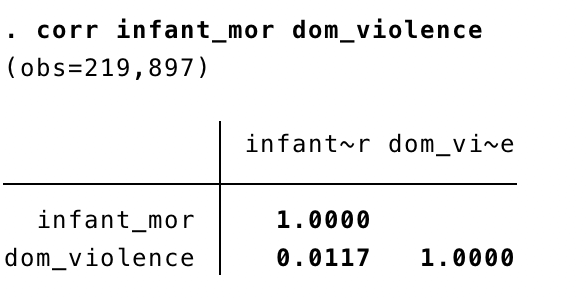
**Table 3: Child Mortality Rates in India**

N = 1,315,617

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Description automatically generatedTable 4: Regressing IMR with other variables**

In Table 4, we can see that domestic violence is statistically significant when infant mortality is regressed on domestic violence alone. But when controlled for other factors of education of mother, height of mother, wealth index, and other factors, domestic violence is no longer statistically significant. Education and wealth index remain statistically significant throughout. For female infants, the location of whether urban or rural is also significant but it is not for male infants. Even though the R2 is low, it is not truly relevant when analyzing cross sectional data due to the sheer volume of variables available. R2 is more relevant for time-series data since it is a better indicator variation. In Table 5, we see that the correlation between domestic violence and infant\_mor is 0.0117, indicating no correlation between the two.

**Table 5: Correlating IMR & Domestic Violence**

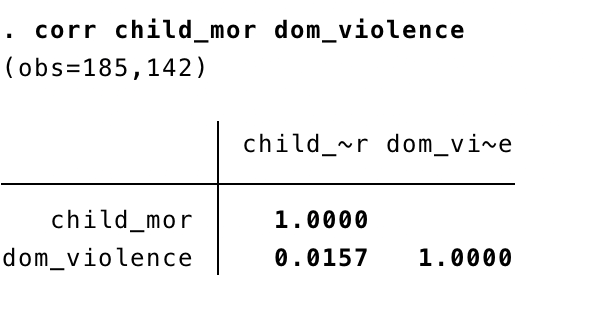
**Table 6: Regressing CMR with other variables**

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In Table 6, we can see that domestic violence is statistically significant when child mortality is regressed on domestic violence alone. But when controlled for other factors of education of mother, height of mother, wealth index, and urban or rural, domestic violence is no longer statistically significant. Like IMR, education and wealth index remain statistically significant throughout. Even though the R2 is low, it is not truly relevant when analyzing cross sectional data due to the sheer volume of variables available. R2 is more relevant for time-series data since it is a better indicator variation. In Table 7, we see that the correlation between domestic\_violence and child\_mor is 0.0157, indicating no correlation between the two.

**Table 7: Correlating CMR & Domestic Violence**

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**Conclusion**

Despite literature indicating otherwise, a cursory and preliminary analysis of NFHS -4 data indicates that domestic violence is not that significant in explaining infant and child mortality rates the same way household wealth, assets and educational attainment are. There are some possible explanations for why this is the case, but further statistical examinations of other data sources also need to be conducted to substantiate it.

Analysis on IMR and CMR using NFHS -4 data is yet to be conducted, so it is important to observe what other results researchers come up with. Majority of the literature studying the linkages between the two use very small datasets and subsets collected by local organizations and not previous versions of NFHS data. Additionally, most of the published literature is dated by at least more than 5 to 10 years.

However, another way to interpret these findings is to view them as a very clear policy directives for governments to follow to reduce IMR & CMR. With the onset of several infrastructure and sanitation schemes since 2005, housing conditions have clearly improved. With the implementation of the RTE act, more children have access to formal education than before. All of these factors can be seen as improvements in socio-economic indicators and improvements in quality of life.

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3. <https://stats.oecd.org/glossary/detail.asp?ID=1347> [↑](#endnote-ref-3)
4. <https://ourworldindata.org/child-mortality> [↑](#endnote-ref-4)
5. <http://hdr.undp.org/en/composite/HDI> [↑](#endnote-ref-5)
6. <https://www.hrw.org/world-report/2019/country-chapters/saudi-arabia> [↑](#endnote-ref-6)
7. <https://www.nytimes.com/2018/06/22/world/middleeast/saudi-arabia-women-driving.html> [↑](#endnote-ref-7)
8. <https://www.undispatch.com/heres-every-country-world-ranks-gender-equality/> [↑](#endnote-ref-8)
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