1. Dr. Jyoti S. Hallad, Mr. Javeed A. Golandaj and Mr. B. I. Pundappanavar published an article "Trends, Di□erentials and Determinants of Neonatal and Infant Mortality in Rural North Karnataka" in Demography India (2018 Vol. 47, issue 2).

2. Dr. Shriprasad H., Jt. Director and Dr. Rajarama K.E.T., Asst. Director, attended two day training programme at NIHFW, New Delhi on 6 and 7 Aug 2018, to monitor CES 2018. They monitored State Level Training and field activities for Karnataka and Telangana states.

3. Following 4 papers were presented in the 3rd Dissemination workshop of PRCs organized by MoHFW New Delhi and PRC New Delhi held at Udaipur during 29th to 31st October 2018.

   a) Are Socially Marginalized Women Deprived of Maternal Health Care Services in Rural North Karnataka' – by Dr. Jyoti S. Hallad

   b) An Assessment of Hygiene Knowledge and Practice among Students and valuation of Sanitation Facilities in Schools of Yadgir District, Karnataka' – by Dr. Shriprasad H.

   c) Extent of Utilization of Village Health and Nutrition Day and its Determinants: A Study in a Backward District of Karnataka' – by Dr. Rajarama K.E.T.

   d) An Assessment of District Early Intervention Centres (DEIC) in selected districts of Karnataka' – by Mrs. Manjula G. Hadagalimath

4. Centre organized a National Seminar on "Banking System in Indian Economy; Roles, Prospects & Challenges" sponsored by Indian Council of Social Science Research (ICSSR), New Delhi and Padmabhushana Dr. D. VeerendraHeggade Chair for Studies on Health & Demography on 10th and 11th December, 2018. Dr. Shriprasad was the organizing secretary.

Published by
Padma Vibhushana Dr. D. Veerendra Heggade
Chair for Studies on Health & Demography
JSS INSTITUTE OF ECONOMIC RESEARCH
VIDYAGIRI, DHARWAD-580 004, KARNATAKA, INDIA

ISSN : 2454-9207

IER JOURNAL OF HEALTH AND DEMOGRAPHY

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Volume 4 Number 2 January 2019

ISSN : 2454-9207

IER Journal of Health and Demography

ARTICLES

Determinants of Domestic Violence in North Eastern Region of India: The Role of Women's Economic Autonomy and Cultural Context

Anindita Sinha*

Abstract : *Domestic Violence is a critical public health challenge and the Sustainable Development Goals include elimination of all forms of violence against women and girls within the agenda. However, there is a relative dearth of research on the factors affecting it in the case of North Eastern Region of India (NER) particularly from the perspective of incorporating women's economic autonomy and sociocultural norms in a comprehensive way. The present paper is an attempt to critically examine the role of economic autonomy and sociocultural norms in determining the incidence of Domestic Violence in the region. The study analyzed data from the fourth round of the National Family Health Survey India, 2015-16. Separate binary logistic regressions are carried out on tribes and non-tribes of NER, as it is of interest to see whether and to what extent different factors affect the experience of domestic violence among women in the two social groups.IBM SPSS version 20 software was used for data analysis. Sociocultural norms reflected in leverage of women in domestic-decision-making, experience of controlling behaviour of husband and attitude of women towards wife-beating play a critical role in domestic violence among both tribal and non-tribal communities in NER. Economic autonomy among tribal women, specifically the ownership of land, leads to higher rate of domestic violence. Domestic violence has a strong sociocultural component associated with gender norms prevailing in the society. Policy interventions targeted at changing anti female gender norms at the community level and sustained rises in women's autonomy seem indispensable for reducing domestic violence in NER.*

Keywords: *Domestic Violence, Northeastern Region of India, Women's autonomy, Economic autonomy, Culture*

I. Introduction

Domestic violence (DV) against women i.e. physical, emotional and sexual violence or abuse within relationships is the dominant form of violence experienced by women globally. In fact, according to the landmark study on DV, conducted by the World Health Organization, around 60 percent of the surveyed women from 10 selected countries, who had ever experienced physical and sexual violence, reported that they have been abused by a partner (WHO, 20O5).According to data from the fourth round of the National Family Health Survey (2015-16)around 29 percent of ever married women in the reproductive age group (15-49) in India reported having experienced at least one form of spousal violence in their lifetime, with significant variations between regions as well as among

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sociocultural groups, ranging from around 55 per cent in Manipur to around 3 per cent in Sikkim, and from around 35 per cent among Scheduled castes to around 22 per cent among others (i.e. excluding non- scheduled and other backward castes) (Babu and Kar, 2009).

In fact, DV is a critical public health challenge worldwide, and as recognition of the acute nature of the problem, the Sustainable Development Goals or Global Goals include elimination of all forms of violence against women and girls within the agenda. However, a search of relevant literature reveals that as compared to other health concerns, there is a relative dearth of research on the factors affecting DV, especially in the case of North Eastern Region of India (NER) and particularly from the perspective of incorporating women's economic autonomy and sociocultural norms in a comprehensive way (IIPS, 2017; Koenig et al., 2006; Mahapatro et al., 2012; Panda and Agarwal, 2015; Tame, 2017). In this context, the present paper is an attempt to

critically examine the role of economic autonomy and sociocultural norms in determining the incidence of DV in the region. Since, it is widely known that tribes possess distinctly different cultural traits from non-tribes (though there has been considerable blurring by what is popularly known as *Sanskritization*), we conduct separate analyses (logistic regressions) for the two subpopulations, i.e. tribes and non-tribes, as it is of interest to us to see whether and to what extent different factors affect the experience of DV among women in these two sociocultural groups.

II. Data and Method of Analysis

The present study utilizes data from the individual women's questionnaire of the India National Family Health Survey (NFHS), 2015-16. The analysis is restricted to women who are currently married, since most of the responses relating to women's autonomy were put to them. Out of a total number of 8,765 cases selected for DV module for the eight states of North-east India (Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura) in NFHS 4 data, our final sample size consisted of around 1600 cases, the sample size being reduced drastically mainly due to missing cases and non-response of many individuals in the data set, especially in the case of responses to the autonomy measures. Approvals from the technical committee and ethical review boards for interviewing respondents were obtained by International Institute for Population Sciences, Mumbai which was responsible for the data collected during NFHS surveys. IBM SPSS version 20 software was used for data analysis.

NFHS defines the various acts of violence as follows: **Physical violence:** Any of the following acts of violence perpetrated by her husband: (i) Pushed her, shook her, or threw something at her (ii) Slapped her (iii) Twisted her arm or pulled her hair (iv) Punched her (v) Kicked her, dragged her, or beat her up (vi) Tried to choke her or burn her on purpose (vii) Threatened her or attacked her with a weapon **Sexual violence**: Any of the following: (i) Forced her to have sexual intercourse when she did not want to (ii) Forced her to perform sexual acts she did not want to **Emotional violence**: Any of the following: (i) Said or did something to humiliate her in front of others (ii) Threatened to hurt or harm her or someone close to her (iii) Insulted her or made her feel bad about herself.

The dependent variable is domestic violence and is a dichotomous variable that assumes the value of 1 if the woman has experienced at least one form of violence- physical, sexual or emotional and 0 otherwise. We carry out two binary logistic regressions, for the two sub-populations of NER defined along the lines of broad sociocultural group- (i) tribe and (ii)non-tribe (tribe refers to Scheduled Tribes as defined in the Constitution of India).

In the present study, women's economic resources/status is measured by the ownership of land, ownership of house (both either alone or jointly), and financial autonomy (paid employment and possession of money that woman alone can decide how to use). Sociocultural norms refer specifically to leverage of women in domestic-decision-making, experience of controlling behaviour of husband and attitude of women towards wife-beating, which broadly capture the degree of patriarchal attitude prevailing in a particular society. Composite indices have been constructed through **factor analysis** on relevant items in the questionnaire for all the aforementioned factors except ownership of land and/or house. It is pertinent to mention here that the items to be included or excluded from each index were decided on the basis of theory, and validated by exploratory factor analysis (EFA).Regression scores from factor analysis were used for the construction of the indices. After obtaining the factor scores for each woman, we recoded using it in *binary* form, with positive values representing higher scores and indicating higher autonomy, coded as 1 and, negative values depicting lower scores and therefore lower autonomy, coded as 0.

The set of independent variables remains the same in both regressions. Apart from the variables mentioned above, the other explanatory variables included in the analysis are age, education and occupation of woman, education and occupation of husband, wealth status, religion, and freedom of mobility. Also included are variables reflecting life-course experience of the woman, i.e. witnessing DV during childhood (included in the questionnaire as 'did your father ever beat your mother?) and husband's alcohol use. All the explanatory variables used in the regressions (except age difference and gap in years of formal education between spouses) are categorical in nature. In most cases, we have collapsed the categories of the independent variables into fewer ones (mostly limited to two or three) for ease of exposition and analysis.

The basic form of the logistic regression used is:

$$\log\left(p/1-p\right) = b_0 + b_1x_1 + b_2x_2 + \ldots\ldots\ldots + b_kx_k$$

Where b_0 is constant, $b_1, b_2, \ldots\ldots\ldots, b_k$ are the coefficients of $x_1, x_2 \ldots\ldots\ldots x_k$

p Is the estimated probability of experiencing domestic violence among tribes or non-tribes, as the case may be.

III. Main Findings

1. Domestic Violence in NER and Constituent States

Table 1: Domestic Violence among Tribal and Non-Tribal Women in NER, 2015-16 (%)

STATE	Domestic Violence (% of tribal women)	Domestic Violence (% of non-tribal women)	Domestic Violence (% of total women)
Arunachal Pradesh	33.6	31.9	33.3
Assam	28.1	26.2	27.5
Manipur	57.0	57.8	57.6
Meghalaya	29.1	12.0	29.2
Mizoram	18.5	25.7	18.9
Nagaland	16.6	20.0	17.1
Sikkim	3.6	3.4	3.6
Tripura	43.4	23.0	31.2
NER	27.6	30.8	29.3
India	31.4	28.7	29.5

Source: Author's calculations from unit level NFHS-4 data (IIPS, 2017).

Table 1 provides estimates of the percentage of currently married women who have experienced at least one form of DV among tribes, non-tribes, and for the total population of NER for the period 2015-16.Within NER, Manipur evinces the highest percentage of women who have experienced DV, followed by Arunachal Pradesh and Tripura (table 1). As can be seen from the table, the average for NER is comparable to the national average. However, DV among tribal women is lower in NER as compared to average for tribal women at all-India level, while among non-tribes, the situation is opposite with the average for the region being higher than India's average. Also, the average for tribal women in NER is lower than that of non-tribes. Interestingly, it is not the case that within each state, DV is uniformly lower among tribes vis-à-vis non-tribes, even though the average for tribes is lower than that of non-tribes in NER. In fact, in five out of the eight states of the region, DV among tribes is higher than that among non-tribes, with the largest difference in Tripura.

2. Findings from Logistic Regression Analyses

Table 2 presents the results of the binary logistic regressions for the tribes and non-tribes, with DV as the dependent variable. Column I present the results for the determinants of DV among tribal women in NER. Women's education or occupation does not seem to have a significant effect on DV among tribal women. Also, neither age difference between spouses nor the gap in educational attainment between them is found to bear a statistically significant relationship with DV. However, women whose husbands have received some formal education are almost half as likely to experience DV as compared to those, whose husbands have never received any formal education. Also, women

whose husbands are employed in the manufacturing sector are the most likely to experience DV. In fact, as compared to women whose husbands are employed in the agricultural sector, those with husbands working in the manufacturing and services sector have around 3 and 1.7 times higher odds of experiencing DV respectively. Even though the reason for this finding is not entirely clear, it is possible that within cultures where violence is an almost unstated and accepted course of conflict resolution within households, employment of men in the non-agricultural sector that entails a relatively higher status within the household, especially in situations where such employment is relatively low, boosts the sense of right to use it in conflict situations. In this connection it could be mentioned that first-hand experience of the present author of working among the Reang tribe of Tripura (a state of Northeast India), suggests that overall women accept domestic violence (in varying degrees, of course), and both women and their husbands expressed the opinion that some forms of DV (such as slapping a wife if she argues with the husband) are very common and not taken 'seriously'. Indeed, when asked about why it is so, several of the Reang men answered that they have never really thought about it and that it is the way it has always been in their community, pointing towards the cultural acceptance of DV among this tribe.

It is interesting to note that overall, women's ownership of economic resources has limited influence on the experience of DV among tribes in NER (table 2). The index of financial autonomy (paid employment and possession of money that woman alone can decide how to use), does not seem to influence DV. In fact, the lone economic variable that turns out to be significant is the ownership of land. Here, we find that tribal women in NER, who own land either alone or jointly, are at least twice as likely to experience DV as compared to women who do not. In fact, several other studies have found that ownership of land, access to money and paid employment can increase the risk of DV for women (Krishnan et al., 2010; Schuler et al., 1998), though not always (Bhattacharyya et al., 2011).This points towards the distinct possibility that DV could be used as an 'instrument of extraction' of resources. In the case of the tribes, land (much more so than house) has a high economic value as it is the chief means of production in a primarily agrarian society. Therefore, it is conceivable that, the ownership of land would lead to increased DV. However, this does not necessarily eliminate a second possibility that in cases where the women own such a valued resource as land, husbands resort to DV to increase their self-esteem and maintain the status-quo within the household (Atkinson et al., 2005; Babcock et al., 1993; Bloch and Rao, 2002; Bolis and Hughes, 2015).

Both sociocultural factors and variables capturing life course factors, i.e., husband's habit of drinking alcohol and woman having witnessed DV (father beating mother) during her childhood have significant association with her experience of DV within the conjugal bond. Husband's habit of alcohol consumption increases the odds of DV by nearly 3 times, while woman having witnessed DV (father beating mother) during her childhood increases the odds of experiencing DV within marriage by more than twice. Also, as compared to those who profess Hinduism, those who adhere to Christianity are 2.7 times less likely to face DV. Though the reason for the last finding deserves further research, we can think of at least two different and conflicting explanations for this finding. The first is those who adhere to Christianity are more frequent in attending religious preaching as compared to their Hindu counterparts, which may well have a psychological effect towards reducing DV. The second is that Christian women may be less likely to report instances of DV due to a culture of silence (Wilcox,

2017).However, since we do not have sufficient evidence; we refrain from suggesting either as an explanation for this finding.

Table 2: Determinants of Domestic Violence among Tribes and Non-Tribes in NER

Dependent Variable ➔	Domestic Violence (Tribes)		Domestic Violence (Non-tribes)	
Independent Variables ↓	Exp (β)	Sig.	Exp (β)	Sig.
Women's Age Group (Ref: 15 -29)				
20-24	0.238	0.101	1.664	0.749
25-29	0.215*	0.066	0.528	0.676
30-34	0.259	0.106	0.427	0.580
35-39	0.271	0.121	0.828	0.902
40-44	0.271	0.291	0.618	0.754
45-49	0.490	0.490	1.054	0.973
Educational attainment of woman(Ref: Primary)				
Secondary education	1.173	0.523	0.798	0.522
Higher education	0.869	0.777	0.249**	0.015
Woman's occupation (Ref: Agriculture)				
Manufacturing sector	0.899	0.697	0.596	0.205
Services sector	0.815	0.488	1.043	0.916
Educational attainment of husband (Ref: No education)				
Primary education	0.466*	0.096	0.234**	0.022
Secondary education	0.715	0.419	0.634	0.423
Higher education	0.691	0.465	1.899	0.306
Husband's occupation (Ref: Agriculture)				
Manufacturing sector	3.000***	0.007	0.992	0.987
Services sector	1.727**	0.035	0.960	0.916
Area of residence (Ref: Urban)				
Rural	1.222	0.450	1.321	0.357
Husband drinks alcohol (Ref: Doesn't drink)				
Drinks alcohol	3.398***	0.000	3.371***	0.000
Religious affiliation (Ref: Hindu)				
Muslim	0.757	0.344	1.147	0.805
Christian	0.360*	0.058	1.804	0.322
Wealth category (Ref: Lowest)				
Lower	0.551*	0.083	0.526	0.172
Middle	0.286***	0.001	0.444	0.114
Higher	0.282***	0.003	0.386*	0.090
Highest	0.099***	0.000	0.148***	0.006
Father ever beat mother (Ref: No)				
Yes	2.777***	0.000	3.840***	0.000
Don't know	0.502*	0.065	1.350	0.520
Owns house alone or jointly (Ref: Does not own)				
Owns alone or jointly	0.807	0.440	1.728	0.102
Owns land alone or jointly (Ref: Does not own)				
Owns alone or jointly	2.136***	0.006	0.526	0.102
Index of Household Decision-making (Ref: Low)				
High	0.474***	0.03	1.580	0.159
Financial Autonomy Index (Ref: Low)				
High	0.921	0.703	0.725	0.240
Index of Control (Ref: Husband controls)				
Husband doesn't control	0.288***	0.000	0.434***	0.002
Index of acceptance of subordination (wife beating) Ref: Not justified)				
Justified	1.693**	0.012	2.025**	0.012
Index of mobility (Ref: Low mobility)				
High mobility	1.186	0.454	0.814	0.487
Age difference with husband [&]	1.022	0.251	0.961	0.175
Difference in years of education between [^]	1.000	0.993	1.246***	0.005

Notes: *** 1% <p ** 5% < p * 10% < p. & Husband's age minus wife's age ^Husband's years of education minus wife's years of education

Further, indices capturing sociocultural norms, viz., leverage of women in domestic-decision-making, experience of controlling behaviour of husband and attitude of women towards wife-beating, all turn out to be statistically significant. Women who have high household decision-making autonomy are only half as likely to experience DV as compared to those who have low decision-making autonomy. Likewise, women whose husbands do not exhibit controlling behaviour are around 3.4 times less likely to be victims of DV. Women who justify wife-beating and thus seem to have internalized patriarchal norms are found to be around one and a half times more likely to be targets of DV.

Finally, wealth has a significant influence on DV, with progressively increasing levels of wealth reducing the odds of experiencing DV (except the last, i.e. wealthiest) category. The influence of wealth on DV is in the expected direction as one would expect that there will be greater conflict over resources in poorer households as compared to richer ones.

Column II presents the results for the non-tribal population. As in the case among tribes, among non-tribes too, the age group of woman does not bear any effect on DV. Among non-tribes, women's education as well as difference in educational attainment between husbands and wives seems to have significant association with the experience of DV. Women who have received higher education (i.e. higher than secondary level) are found to be around 4 times less likely to experience DV. However, just as in the case of tribes, among non-tribes too, women's occupation does not seem to have any effect. Unlike the case of the tribes however, husband's occupation does not seem to significantly influence the experience of DV. Among the variables that capture economic resources of women, none turn out to be significant. However, household wealth is significant and women from wealthier households face lower odds of DV.

Even in this case, the category of variables that turn out to be highly relevant in the case of experiencing DV, are life course factors and the variables measuring sociocultural attributes. Thus, we find that women whose husbands are in the habit of drinking alcohol are nearly thrice as likely to be victims of DV and women who have witnessed DV during childhood are nearly 4 times as likely to be victims. Although domestic decision-making does not turn out to be significant, we find that not witnessing controlling behaviour of husband reduces the odds of experiencing violence by nearly 2.3 times. Also, women who justify wife-beating are around twice as likely to be victims of DV.

IV. Discussion

Various forms of spousal violence have a strong cultural component associated with gender norms prevailing in the society. Broadly speaking, there is evidence to suggest that among both tribes and non-tribes of NER, greater egalitarianism in sociocultural norms specifically pertaining to relation between the sexes reflected, for example, in leverage of women in domestic-decision-making, experience of controlling behaviour of husband and attitude of women towards wife-beating, predispose families towards lower DV. In fact, feminist literature argues that patriarchy condones aggressive and violent behaviour of male partners in various ways. Together with unequal access to and

distribution of material resources biased in favour of males, patriarchy imparts a sense of entitlement of men over women within marriage which ineludibly leads to justification of physical as well as non-physical violence on them (Crossman et al., 1990; Karakurt and Cumbie, 2012). Thus, it comes as little surprise that when women do not justify wife-beating or their partners do not exhibit controlling behaviour, the probability of DV is lower.

This study also brings out that women's economic autonomy indicators, except land ownership, has almost no role in influencing DV among either social group in the setting of NER. What is perhaps more interesting is that in line with past findings that report increase in DV against women with increase in economic resources (as pointed put in the preceding section), we find that among tribal women in particular, land ownership increases the probability of experiencing DV. This indicates a possible diminution in the status of women among tribes. Indeed, evidence weighs in favour of the argument that economic autonomy would tend to increase DV in societies where the status of women is relatively low as compared to men (Koenig et al., 2003; Krishnan at al., 2010; Schuler at al., 1998).

Policy interventions at the community level towards addressing the deep seated cultural bias against women and sensitization regarding the severe negative impact of DV on women along with sustained rises in women's autonomy and education seem indispensable for reducing domestic violence in NER. The deteriorating status of women among tribes specifically requires further deep investigation. Further, it is equally pertinent to find out the reasons why the employment of women does not have a significant effect towards reducing DV in NER. It is important to probe into the reasons why the particular kinds of jobs that women-both tribal and non-tribal- are engaged in fail to increase their status within the household. Also, awareness needs to be spread against the consumption of alcohol as it is an important determinant of DV as pointed out in this as well as several other studies. Finally, the need to create a social atmosphere of acceptance and appreciation of the economic contribution of women towards their family and society at large requires special attention.

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Demographic and Illness Related Factors Influencing Caregivers' Knowledge of Schizophrenia

***Gayatri Hegde & **Vijaylaxmi Aminabhavi**

Abstract: *Schizophrenia is a severe and chronic mental illness in which caregiver's role is very important. Their knowledge about illness is crucial in identifying symptoms, seek timely help, handle patient and manage care giving burden. The present study aims at exploring the demographic and illness related factors that influence on the caregiver's knowledge of schizophrenia. Study comprised of 100 caregivers of schizophrenia. Demographic details were collected and assessment was done with structured interview schedule to assess the knowledge regarding schizophrenia. Findings revealed that literate caregivers have significantly higher knowledge compared to illiterate caregivers(F=5.77, P<0.001), male care givers have significantly better knowledge compared to female care givers (t =2.84, P<0.01) and care givers from urban background have significantly higher knowledge compared to caregivers from rural background (t = 3.5, P< 0.001) . Findings highlight the need of psychoeducation and focused implementation of mental health awareness programs so as to reach the illiterate, rural and female caregivers.*

Key words: *schizophrenia, caregiver*

Introduction:

Schizophrenia is a severe and chronic mental illness, which interferes with the person's cognitive, emotional, behavioral and social realms of life. The prominent symptoms include hallucination, delusion, conceptual disorganization, excitement, blunted affect, emotional and social withdrawal, motor retardation and lack of insight that can occur in various combinations.

As a result of these, usually the person suffering from schizophrenia exhibits such behaviors that appear abnormal to others. Even a lay person can sense their behavior as deviation from normalcy. Yet, hardly any people identify the condition as schizophrenia, a treatable brain disorder. This is because schizophrenia often is a less understood and misunderstood disorder.

Studies across the globe present slightly different results from each other related to the knowledge of schizophrenia. In Indian context, a recent study found that mental health literacy among adolescents to be very low, i.e. depression was identified by 29.04% where as schizophrenia was recognized only by 1.31% (Ogorchukwu, Sekaran, Nair, & Ashok 2016). Another Indian study (Venkata & Mounika) on knowledge of schizophrenia among care givers, reported that 73% had no prior knowledge about schizophrenia and 58 % got the information first hand by patient experience. Contrary to the expectation, even in developed countries, there are studies reporting poor knowledge of schizophrenia. The first national survey conducted in Greece found that knowledge of schizophrenia in general public is poor (Economou, Richardson, Gramandani,, Stalikas, & Stefanis, 2009)) . The primary finding of another survey conducted by National Alliance on Mental Illness of America

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(NAMI) is that the public knowledge about schizophrenia is low; only one fourth of those surveyed considered themselves to be familiar with the illness. NAMI reported that Schizophrenia is one of the most severe mental illnesses, one of the most feared, and yet also one of the most misunderstood illness (NAMI 2008).

Poor knowledge is detrimental in effective handling of this condition. It delays identification of illness, affects the pattern of help seeking behavior and it might lead to mismanagement of symptoms which consequently increases the suffering of both patient and family member.

Poor knowledge can also lead to the development of stigmatized approach towards the person suffering from schizophrenia and his family. Stigma is an amalgamation of ignorance, prejudice and discrimination. Schizophrenic patients report the feeling of being stigmatized in the presence of friends, relatives, and colleagues in interpersonal relationships as well as socio occupational roles in India (Loganathan & Murthy 2011). Studies have reported that family members of person with schizophrenia experienced great degree of stigma and this was found to be higher when their knowledge about schizophrenia was poor (Sahu, Mukerjee, & Sahu, 2018).

Another factor, similar to stigma and strongly associated with poor knowledge is negative attitude. Many studies have shown that persons labeled as mentally ill are perceived with more negative attributes and are more likely to be rejected regardless of their behavior (Arkar & Eker 1994). On the other hand, better knowledge is often reported to result in improved attitudes towards people with mental illness. A belief that mental illnesses are treatable can encourage early treatment seeking and promote better outcomes (Arkar & Eker 2001).

Knowledge about a disorder is more essential when one of the family members suffers from that illness. This is more so in schizophrenia because here patient lacks insight and hence he neither reach out to the doctor on his own nor cooperate with family member's effort to get him treated. Hence the responsibility of care giver is multi folded. A study on family Burden in Caregivers of Schizophrenia Patients has concluded that caregivers of schizophrenia patients experience enormous burden and are potential "high risk group" for mental disorders. (Lasebikan, & Ayinde, 2013) . Similar finding is reported in a study by Kumar, Kumar, Saisudha , Suresh &, Srikanth (2015). Another study found that (Rosenfarb, Bellack & Aziz 2006) there is a significant positive correlation between perceived burden of care, negative attitude and poor treatment of the family member suffering from schizophrenia. One of the studies reported that if the family member attributed the symptoms of schizophrenia to substance abuse, they would act more critically and hostile towards the patient, and more likely the patient was to have a relapse in schizophrenic symptoms (Lopez, Nelson, Synder,& Mintz, 1998). Thus it can be noted that poor knowledge and negative attitude of family member can increase care taking burden and can impact their care taking behavior. Poor knowledge of family members is also associated with relapse of symptoms in patients (Ahmad, Khalily, Hallahan, & Shah, 2017)

In such cases, better knowledge facilitates better management of patient as well as helps in

reducing burden of care giver. A study by Ngugi (2011) found that caregivers knowledge facilitate recognition of mental illness and health-seeking behavior. The coping strategies they develop are based on their knowledge about mental illness. Another study reported that family member's knowledge of mental illness is a crucial factor which may influence the prevention of mental illness, enhance the recovery process of a mentally ill person and help him to be a socially productive citizen (Venkata & Mounika 2018).

Hence, knowledge of schizophrenia among caregivers is crucial. But there are not many studies in India, which have focused on the knowledge of schizophrenia among the caregivers of schizophrenia. Hence this study is conducted with the objective of exploring the knowledge of schizophrenia among caregivers and to identify the socio demographic and illness related factors influencing the knowledge.

Method

This is an exploratory study carried out in Dharwad institute of Mental Health and neurosciences (DIMHANS) a tertiary care teaching hospital, Dharwad, of Karnataka state.

Objective:

The objective of this study is to explore the factors influencing the care giver's knowledge of schizophrenia.

Hypotheses:

Ha 1: Care giver's relationship with the patient, age, gender, domicile, education and occupation influence significantly on their knowledge of schizophrenia

Ha 2: Illness related factors such as duration of illness and family history of mental illness influence significantly on the care giver's knowledge of schizophrenia

Sample

Study comprised of 100 caregivers of schizophrenia. Incidental sampling method was used and those who consented to participate in study were included in the study.

Inclusion criteria

- Primary caregivers of patients with schizophrenia who are diagnosed according to ICD 10 or DSM V.
- At least 6 months duration of illness
- Care givers who are staying with the patient at least since 6 months

- Caregivers above the age of 18 years.

Exclusion criteria

- Care givers who were health care professionals.
- Care givers who were having any psychiatric disorder.
- Care givers who did not consent to participate in the study.
- Care givers who had been a part of some other study

Tools

Socio demographic sheet: A Socio demographic data sheet was designed by the researcher to collect information of care givers about their relation with the patient, their socio demographic details and illness related factors.

Structured interview schedule to assess the knowledge regarding schizophrenia (Revised): This questionnaire is developed by Sunanda (2015). Test consists of 24 questions which are divided in to three domains with 8 questions each. First domain is about general information, signs, symptoms and causes of schizophrenia. Second domain comprises questions related to the knowledge of available treatment approaches, facilities, duration and side effects of medication. Third domain covers the area of care giving approach, monitoring self care activities, helping to follow drug regime and identifying relapse. It is a multiple choice type of questionnaire with four answer options for each question.

Procedure

Primary data was collected by approaching the caregivers who had accompanied the patient with schizophrenia to the hospital. The aim of the study was explained and consent to participate in the study was obtained. Questions and its four answer options were read out by the researcher and explained in the language that they understand. The answers chosen by the respondents were marked in the response sheet.

Statistical Analysis

Descriptive statistics as well as inferential statistics involving t test and ANOVA was applied to test the formulated hypotheses.

Results :

Table 1: Details of caregivers by demographic factors and illness related factors.

Characteristics	Category	N = 100	%
Caregiver's relation	Parent	42	42
	Sibling	16	16
	Children	22	22
	Spouse	18	18
	Other family members	2	2
Age	Early Adults 20-40	43	43
	Middle age 40-60	49	49
	Old age 60 and above	8	8
Gender	Male	71	71
	Female	29	29
Education	Illiterate	30	30
	Primary	19	19
	Secondary	21	21
	College	30	30
Occupation	Household	14	14
	Employed	32	32
	Agriculture	48	48
	Student	6	6
Domicile	Rural	62	62
	Urban	38	38
Duration of illness	Short	34	34
	Long	66	66
Family History of mental illness	Present	30	30
	Absent	70	70

As shown in Table 1, majority of the care givers of the patient were parents (42%) where as 'other relatives' were very less (2%). 49% of caretakers were belonging to the age group of 40 to 60 years where as care givers above the age of 60 years were very less (8%). More number of caretakers in this sample were males (71%). Regarding education, 30% of them were illiterates and 30% of them were educated up to college. Majority of the care givers were from agricultural back ground (48%) and 6% of them were students. 62% of them were from rural background which was more than the urban background (38%). Regarding the illness of patient, 66% had long duration of illness i.e. more than 2 years of illness. 70% of the family had no history of mental illness in other family members.

Table 2: Details of ANOVA results in relation to the impact of relation, age, education and occupation on caregivers' knowledge of schizophrenia

Factors	Source of variation	Sum of squares	Degrees of freedom	Mean squares	F Ratio
Relation	Between group sample	37.51	4	9.38	0.84
	Within group sample	1062.99	95	11.19	
	Total	1100.51	99		
Age	Between group sample	29.75	2	14.87	1.35
	Within group sample	1070.76	97	11.04	
	Total	1100.51	99		
Education	Between group sample	168.00	3	56.00	5.77***
	Within group sample	932.51	96	9.71	
	Total	1100.51	99		
Occupation	Between group sample	27.80	3	9.27	0.83
	Within group sample	1072.71	96	11.17	
	Total	1100.51	99		

***P< 0.001

An inspection of Table 2 reveals that the F ratio for education is 5.77 (P <0.001). This reveals that the impact of education on knowledge of schizophrenia is very high. Care givers with different educational background i.e. illiterates, primary, secondary and college differ significantly in their knowledge of schizophrenia. The findings also revealed that care giver's relation, age and occupation has not made significant impact on their knowledge of schizophrenia.

Table 3: The results of post hoc test for multiple comparisons with regard to the impact of education on caregivers' knowledge of schizophrenia.

Groups	Mean Difference	Std. Er	S value
Illiterate - primary	3.48	0.91	3.82***
Illiterate - Secondary	1.75	0.89	1.97*
Illiterate - College	2.57	0.81	3.2**
Primary -secondary	1.72	0.99	1.7
Primary - College	0.90	0.91	0.98
Secondary - college	0.82	0.89	0.92

*P < 0.05, ** P<0.01, ***P<0.001

An inspection of Table 3 reveals that, significant difference is observed between three comparisons, specifically illiterate caregivers differed significantly from those who have primary education (S= 3.82, P < 0.001), secondary education (S= 1.97, P<0.05), and college education (S=3.2, P<0.01) . In other words, it can be inferred from the result that the care givers with primary, secondary and college education have shown significantly higher knowledge about schizophrenia when compared to illiterate care givers.

The findings also reveal that there is no significant difference between the remaining pairs that are compared, with regard to their knowledge about schizophrenia.

Table 4: Mean, SD and 't' value for the scores of care givers' knowledge of schizophrenia in terms of their gender, domicile, duration of illness and family history of mental illness.

Factors	Category	Mean	SD	t
Gender	Male	11.01	3.11	2.84**
	Female	9.00	3.5	
Domicile	Rural	9.56	3.38	3.5***
	Urban	11.84	2.77	
Duration of illness	Short	10.50	3.28	0.150
	Long	10.39	3.39	
Family history of mental illness in others	Present	9.73	2.96	1.37
	Absent	10.73	3.46	

** P<0.01, ***P<0.001

Findings of t test, as presented in Table 4 reveals that there is significant difference between male and female caregivers in their knowledge of schizophrenia (t =2.84, P < 0.01). Male caregivers have higher knowledge than female care givers. With regard to domicile, caregivers residing in urban area have higher knowledge and this difference is statistically significant (t = 3.499, P<0.001). The obtained 't' value for illness related factors such as duration of illness and family history of mental illness have not shown any impact on the care givers knowledge of schizophrenia.

Discussion

Since few decades mental health programs are being implemented to facilitate and update the mental health services. But, as stated by Kleinman (1991), the extent to which patients benefit from improved mental health services is influenced not only by the quality and availability of services but also by their knowledge and belief systems.

So it is imperative that knowledge of mental illness in general public is essential. Moreover, for the caregivers of mentally ill, such knowledge is still more crucial. They need to have at least basic

knowledge about the mental illness which their own family member is suffering from; for the reason that, a better knowledge will influence their attitude towards illness, reduce distance, improve care giving, helps to maintain regular drug regime, identify the warning signs early and can facilitate improvement in patient. In this regard, this study is an effort to explore the factors influencing the knowledge of schizophrenia among their caregivers.

Influence of demographic factors on caregiver's knowledge of schizophrenia

The socio demographic variables considered in this study are age, gender, domicile, education and occupations of caregivers. Among these factors gender, domicile and education of caregiver's found to have significant impact on their knowledge about schizophrenia.

With regard to gender, male care givers found to have better knowledge about the illness than female caregivers which is statistically significant. The socio cultural background of the sample is such that female have lesser exposure to education and other general information. Their major time is spent in household responsibilities and caring of family members including the patient. Further, an examination of demographic data has revealed that 59% of female care givers are illiterates in contrast to 17% of illiterates in male care givers. This also could have contributed to the significant difference that is observed between male and female care givers. Similar findings are found in another Indian study where it is reported that 'high knowledge score has been associated with male and aged between 18-30 years (Ganesh K 2011).

One more influencing factor on care givers' knowledge is found to be their domicile. In this sample, 62% belonged to rural and 38% belonged to urban background. Among these, urban population found to have significantly higher knowledge, which may be due to the fact that they have more exposure to health related information through media and easy accessibility to healthcare system and centers. . The literacy rate is also found to be very high in urban care givers (97%) compared to rural caregivers (58%). Hence this might have helped to enhance their knowledge about illness.

Related to literacy, care givers who are illiterates had significantly low level of knowledge compared to literate care givers. As the source of knowledge in literates includes reading material also, they might have had higher knowledge. However, within these literate care givers, no statistically significant difference is found between primary, secondary and college educated groups. This indicates that primary level of education is required to gain basic knowledge about schizophrenia but higher education not necessarily implies higher knowledge of schizophrenia.

The study has revealed that caregiver's relation with the patient is not associated with their knowledge. As the study included only primary caregivers, they might be having similar level of understanding arising out of their care giving process. Similar findings reported by Das and Phookun

(2013) where no statistically significant association was found between relationship and knowledge of mental illness in relatives.

Influence of illness related factors on caregiver's knowledge of schizophrenia

Illness related factors such as duration of illness and family history of mental illness, have not shown any significant impact on the caregiver's knowledge of schizophrenia. However, with regard to the duration it could be due to the fact that short duration of illness in this study referred to 6 months to 2 years duration, which could be adequate to have a basic understanding of the symptoms.

Conclusion

The above analyzed results led to the following conclusions

- Male caregivers have significantly higher knowledge about schizophrenia compared to female caregivers.
- Caregivers from urban back ground have significantly higher knowledge about schizophrenia compared to those from rural background.
- Literate caregivers have significantly higher knowledge about schizophrenia compared to illiterate caregivers.

Limitations and suggestions

This study has certain drawbacks. The sample is not a representative sample of caregivers as it included only those who brought the patient to hospital. The other care givers who resided at home could not be assessed. Hence including all the primary caregivers of a patient would provide a better picture. Similarly, the length of stay with the patient was not assessed which would be another important factor in determining one's knowledge.

As the sample is collected in hospital set up, only those who have come to hospital seeking the help of psychiatrists could be included in the study. But only those who have had some basic idea that this is a disorder which can be treatable would have come to hospital. Those who believe in supernatural causes might seek nonmedical help and such care givers could not naturally be included in the study. Hence inclusion of such sample also from community would provide better information about the factors influencing on the knowledge of schizophrenia among the care givers of schizophrenia.

Implications

Study implies that while designing and implementing mental health awareness programs,

education, domicile and gender related factors of the population need to be taken in to consideration. Psychoeducation programs needs to be held in day to day clinical set up specifically, targeting the care givers who do not have formal education, who belong to rural area and female care givers.

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Erratum: Author's name correction

In the published article "Living arrangement and health seeking behavior of elderly", in IER Journal of Health and Demography 2018 January; Vol. 3, No.2: pp. 1-17, the second author's name got printed incorrectly. The Editorial Board apologizes for any inconvenience that it might have caused.

R. V. Deshpande and S. R. Vatavati was the authors list in the article.

The correct Authors list is : R. V. Deshpande and H. R. Channakki.

An Overview of health of Women and Children in India: Evidence from Empirical Source

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Abstract : *Development of any economy depends not only on economic development but also social development where health forms and intrinsic part. Healthy citizens are an asset to the nation. Health of an adult depends mainly on his health during childhood. Health of children intrinsically depends on the health of their mothers who are their caretakers since inception. It is generally observed there are health disparities with respect to gender. Knowing this fact, all developmental policies including health focus on the improvement of maternal and child health. India is not an exception to this. Various health surveys have brought out the indicators of women and child health. There are regional variations with respect to health. Because of the wide variations in culture, religion and level of development among Indian states and union territories, it is not unusual startling that women's health also varies immensely from state to state and also region wise. Health is influenced by the factors like availability, affordability and accessibility of health care. It also depends on the factors like education, religion, caste, income and other socioeconomic factors. The paper uses secondary data available in the concerned area from Surveys on health with the objectives to examine the health status of women and children and also to know the socioeconomic factors influencing health. The indicators used in the paper are maternal mortality rate, infant mortality, malnutrition, extent of immunisation, institutional deliveries to know the health status of women and children. The study deals with the middle income state Karnataka and a good performing district viz Dakshina Kannada. The result highlights the fact that health is area specific and even good performing District has a long way to go to face the challenges of health equality.*

Key words: *women, child, health infrastructure, socioeconomic status*

Introduction

Health is considered to be a vital sector that can play a crucial role in determining the level of social development of a region. Being healthy is an asset to the economy. Woman is the pivot around which the family, the society and humanity itself revolves. Though both male and female have somewhat same life expectancy, women die early for avoidable causes. It is in this connection that health disparities in gender become very prominent. Knowing this fact very well, the Millennium Development Goals (MDGs) have also highlighted the need for policies to improve women's health. Improving health outcomes in developing countries is, first and foremost, of central intrinsic importance. Resolving gender-based health inequalities remains at the forefront of development policy.

National development depends greatly on the welfare of women who are the real architects of a nation. India is one of the few countries on the planet Earth, where women and men have nearly the same life expectancy at birth. Relatively high mortality rates of women for avoidable causes are a reflection of unequal gender relations, inequalities in resource distribution, lack of access and

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availability of drugs and health services in our country. Because of the wide variations in culture, religion and level of development among Indian states and union territories, it is not unusual startling that women's health also varies immensely from state to state and also region wise. Apart from the differences in the health care availability in rural and urban area, there are other socioeconomic factors like household income, education, religion and so on influencing the health of women. In this background an attempt is made in this paper to study and examine the health of women and children. The objectives of the study are:

1. To provide an overview of health of women and children.
2. To examine socioeconomic factors influencing health.

Methodology

The source of data for analysis used in this paper is secondary. The data includes reports of the Health Departments and Surveys of the Government, information through print media like newspapers, articles related to the issue in magazines and journals, electronic media, though they are not exhaustible. The survey data is used to analyse the health of women and children in India, one of the good performing state Karnataka and a good performing district of Karnataka viz Dakshina Kannada. This helps one to understand the state of maternal and child health in good performing regions. The health indicators used are maternal mortality rate, infant mortality rate, extent of anaemia among women and children. Apart from this the study also deals with the health care utilisation and availability as a determinant of health.

Review of Literature

Majority of studies from both developed and developing countries reveal that there exist a relationship between socioeconomic status and health of the individuals. Doyal (2001) argued that despite the recent progress, around half a million women die each year as a direct result of pregnancy and childbirth. She stressed, however, that biological influences are only one part of the complex of factors shaping the health of women and men. Socially constructed gender differences are also important in determining whether individuals can realise their potential for a long and healthy life. The health of mothers is a major determinant of that of their children, and thus indirectly affects the formation of human capital (WHO, 2005). The babies of ill or undernourished pregnant women are more likely to have a low birth weight and impaired development. Low-birth-weight children in turn are at greater risk of dying and of suffering from infections and growth retardation, have lower scores on cognitive tests and may be at higher risk of developing chronic diseases in adulthood. The economic costs of poor maternal and child health are high like the increased demand for higher allocation of public funds. Laura et al. (2005) assessed the impact of childhood living conditions on health and health inequalities in adulthood. Their study found considerable gender differences in the social

determinants of health. In both high-income and low-income countries, levels of maternal mortality may be up to three times higher among disadvantaged ethnic groups than among other women (Anachebe, 2006). Rajshri et al. (2014) in their study show that the important feature of most of the developing nations is the existence of significant gender differentials in health outcomes. They stress that such gender differences exist in India too due to two potential factors: one is that females' access treatment later than males and two is those females receive differential medical care. To overcome such barriers in health outcome, the authors insist that first and foremost there is a need to know where these gender inequalities lie.

The perception of need for health services depends on the level of awareness that is influenced by the level of education. In fact, proper education is even essential for the proper utilisation of healthcare services. Studies of low and middle income countries show that health outcomes and education has a strong positive relation (Subbarao, 1995). The reimbursements of educating women are multiple, ranging from improved efficiency, economic development, and increased female sovereignty. One major advantage of educational ability is understood to be better health status and it is knowledgeable that better educated women have lesser level of health problems than others (Mirowsky, J .2003). High infant mortality rate occurs in India due to high female illiteracy and due to less immunisation and less professional assistance in delivery (Mukherji, 2005). Where women health status is better, their educational status is also better and they are working more efficiently. Education ensures awareness among women. Family health is also better due to the better health status of woman because a healthy mother is guarantee to a healthy society (Abida and others, 2011). Mukherji (2011) opines that female illiteracy and poverty determine access to and utilisation of health services and in turn control total fertility rate and infant mortality rate. The states with high literacy rates in India have made remarkable progress in the health of children and mothers.

Using NFHS-I and II Roy et al. (2004) assess the degree of inequalities in health care and nutritional status across states with a focus on caste and tribe. Analysis of variations of utilisation of health care programmes and nutritional status in four socially stratified groups of women clearly brings out that differentials between scheduled caste, scheduled tribe, other backward caste women and women in 'other' category are partly due to difference in socio-economic conditions. In some states differentials persist even after adjusting the effect of socio- economic factors. The study reveals that the situation regarding inequality by caste/tribe in less developed poor performance states is different from the situation in better-off states showing consistently good overall performance. Herd et al. (2007) opine that further attention need to be paid to how socioeconomic status shapes access to health-related resources and what aspects of socioeconomic status matter most. Dhak (2009) studied the gender differential in health and its socioeconomic and demographic determinants in the old-age population of India based on the National Sample Survey 60th round data collected in 2004. The study revealed an inverse association with the poor socio- economic condition of older people and their health status. As

compared with others the scheduled caste population, people from rural areas, Muslims, the unemployed and illiterates experienced poorer health. Dealing with gender equality in health care utilisation in Latin America Daniel et al. (2009) found that there are serious gaps in policies affecting the health of women, particularly poor, indigenous and less-educated women. In this regard they opine that future research should look more specifically at the use of health care services among women and its differences by socio-economic status, ethnicity and regular source of care.

A study by Schultz (2010) gives an insight into how environmental conditions existing at the time and location of conception and birth of a child influences the health throughout the child's life time. The author is of the opinion that these latent health capabilities arising from ample foetal growth suggest the severe challenges facing those who want to learn how health human capital accumulates over a generation and how health is transmitted between generations. Sara et al. (2012) opine that the governmental authorities have to a lesser extent considered policies focussed on factors which drive health inequalities like gender and geographical characteristics. The 2005-2006 National Family Health Survey (NFHS-3), coordinated by the United States Agency for International Development (USAID) in partnership with the Government of India (GOI) and other donors, drew the attention of policymakers to poor nutrition and immunisation levels in India. Nutrition is required for human development. Nutrition is acknowledged as one of the most effective entry points for human development, poverty reduction and economic development with high economic returns. Poor nutrition generally starts before birth and continues into adolescence and adult life and can span into generations. The intergenerational cycle of under nutrition ensures that an undernourished mother gives birth to an underweight baby who goes to become a malnourished and anaemic child (Report of the Working Group on Nutrition for the Twelfth Plan 2012-2017). The cycle is perpetuated with malnourished and anaemic adolescent girls and women facing gender discrimination, early marriage, early and frequent child bearing, being locked in a cycle of multiple deprivations-gender discrimination, social exclusion and poverty. Nutritional challenges continue throughout the life, particularly for girls and women. There is a close interconnection of the health of women and children. The Kolkata Group is an annual forum that deliberates on ways of advancing social justice, human development and human security in India. Kumar (2013) dealt with the deliberation of the Kolkata Group at its tenth workshop which focused on social justice, status of women and health care. He says that it is an immediate need of the nation to pay serious attention to health, nutrition and education for the well being of women in India. Therefore nutritional security in itself is a wide ranging plethora of factors that need to be addressed in a well coordinated manner.

Daniel et al. (2009) examining the socioeconomic determinants and inequality of health care utilisation in Ecuador, Latin America found a significant negative relationship between household economic status and utilisation of preventive and curative services. The writers observe that health care reform efforts should address these and other inequalities systematically in order to advance equity in

health. The current health scenario in India is often described as "dismal" or "disturbing" (Bose, 2008). One major reason put forward for this low level of achievement of health in India is the systematic lack of investment by the government, which adversely affects the poor. A similar conclusion is drawn by Anit et al. (2008) in their study of the problem of poor health outcomes in India from the demand side. The study revealed that there is a systematic variation in urban and rural areas with respect to accessing health care. Purohit's (2010) study of health system performance in Karnataka also highlights the fact of disparities within the state across districts. Some external factors like female literacy, basic facilities like drinking water, electricity, toilets linked to the area of residence have a greater influence on the efficiency of health system performance. The study highlights the need for appropriate links and coordination between economic and social sector policies, particularly at the district level to avoid suboptimal health outcomes for the poorer districts in a middle income state. Writing on the issue related to health in The Hindu, Kapoor (2016) speaks of why health care access eludes India. He cites four reasons: inadequate health care infrastructure, dismal health care expenditure, problems of governance and lack of awareness and monitoring of diseases. He says that India requires an urgently integrated action on health care to make it universally accessible and affordable at the same time. This will not just address the country's health needs but also have a positive impact on its poverty and growth levels.

The MDGs (Millennium Development Goals) and the later SDGs (Sustainable Development Goals) have given enough importance to health. In tune with these international goals, Indian government has planned the investment in health. The 12th Five year Plan (2012-17) has given sufficient importance to health while aiming to control population and reduce infant mortality rate and maternal mortality rate. This is done through strengthening services and quality of health care. The plan also has focussed on removing the regional disparities in health sector. Table 1 deals with the health situation of women and children based on socioeconomic status like education, caste and wealth quintile in India. It is observed from the table that as the education improves the health indicators also improve. It is seen that women are moving towards institutional births and for antenatal check-up increases as the education improves from illiterates to secondary or more. Institutional births increased from sixty two percent for women with no education to ninety percent for women with secondary or more education. Twenty eight percent of women with no education went for four antenatal check-ups whereas this was sixty three percent for women with secondary or more education. With regard to the number of children immunised it is seen that there is an increase in the percentage from fifty two to sixty seven with the rise in education of mother. Similar is the case with the weight of children under five years. The table depicts that the percentage of underweight children decreased as the education of mother improved. This implies that education is conducive for the awareness and utilisation of health services which improves health of mother as well as the child.

Table1: Socioeconomic Status and Health in India				
Variable	**Institutional birth** (% of births in past 5 yrs)	**4 Antenatal check-up (%)**	**Underweight** (% of children under 5 yrs)	**Full immunisation** (% of children 12-23months)
EDUCATION				
No education	62	28	47	52
Primary	74	45	40	60
Secondary or more	90	63	29	67
CASTE				
SC	78	49	39	63
ST	68	46	45	66
OBC	80	48	36	62
None of the above	84	61	29	64
Don't know	74	47	35	46
WEALTH QUINTILE				
Lowest	60	25	49	53
Second	75	44	40	61
Middle	86	57	33	64
Fourth	91	66	27	67
Highest	95	73	20	70
Source: NFHS-4				

Religion and caste plays a role in the utilisation of health care and improves health. It is seen from table 1 that women in the category of scheduled tribe have gone less for institutional births and antenatal check-ups. Percentages of children who are underweight are highest to the extent of forty five percent for scheduled tribe. Similar is the condition of women who belong to scheduled caste.

Table 2: Government Health Care									
Year	**Government Hospitals**			**Beds**			**Allopathic Doctors**		
	India	**Karnataka**	**D.K**	**India**	**Karnataka**	**D.K**	**India**	**Karnataka**	*** D.K**
2011	23916	919	77	622628	63741	1891	33321	4928	92
2013	19817	765	79	628708	51986	1681	33121	4648	95
2014	19748	565	79	632652	50764	1681	32461	4611	94
2015	19653	654	79	754724	53022	2101	106987	4606	165
2016	14379	475	87	634879	49434	2101	106987	4606	165
*Source: Directorate General of Stat e Health Services, National Health Profile, *District at a Glance*									

Table 2 depicts the government health infrastructure in India, Karnataka and Dakshina Kannada district. It is seen that the number of government hospitals has decreased in India as a whole from 23916 in 2011 to 14379 in 2016. Similar is the condition with the state of Karnataka where it has decreased from 919 in 2011 to 475 in 2016. Dakshina Kannada district has improved in the number of hospitals unlike the state and country. This holds good for the number of beds available and the number of allopathic doctors.

Table 3: Infant Mortality Rate

Year	India			Karnataka			*Dakshina Kannada
	Rural	Urban	Total	Rural	Urban	Total	Total
2001	72	42	66	69	26	54	9.4
2013	44	27	40	34	24	31	10.9
2014	43	26	39	31	24	29	10.2
2015	41	25	37	30	23	28	10.15
2016	38	23	34	27	19	24	10.8

*Source: Economic Survey various years, Karnataka at a glance*District Monitoring and Evaluation, DK.*

Infant mortality rate in India is shown in Table 3. The table depicts that infant mortality rate has declined over the years from 66 in 2001 to 34 in 2016. The target as per the MDGs is 25 in 2015, India has missed the target. The state of Karnataka is also not very pleasing. Urban areas of Karnataka have faired well in this respect. Infant mortality rate in Dakshina Kannada is 10.8 in 2016 which is half of the state average and one third of country's average. Dakshina Kannada has good health indicators when compared to the state and the country.

Table 4: Maternal Mortality Rate

	India	Karnataka	*Dakshina Kannada
1997-98	398	245	-
1999-2001	327	266	-
2001-03	301	228	-
2004-06	254	213	-
2007-09	212	178	110.3
2010-12	178	144	97.7
2011-13	167	133	89.0
2016	174	133	81.51

*Source: SRS, World Health Statistics (WHS),*District Monitoring and Evaluation, DK.*

Maternal mortality rate (MMR) is defined as the number of maternal deaths per100, 000 live births due to causes related to pregnancy or within 42 days of termination of pregnancy, regardless of the site or duration of pregnancy. MMR is shown in Table 4. In India, the national average of MMR in the year 2005 is 254 per100,000 live births which in itself is high compared to the international scenario. SRS data indicates India has recorded a deep decline in MMR by 35 percent from 327 in 1999-2001 to 212 in 2007-09 and a fall of about 17 percent happened during 2006-09. The decline in MMR from 1990 to 2009 is 51percent. From an estimated MMR level of 437 per 100,000 live births in 1990-1991, India was required to reduce the MMR to 109 per 100,000 live births by 2015 as per the target of MDGs. India has still not reached the target. The MMR in Karnataka is 133 in 2013 and in Dakshina Kannada it is 89 during the same period. It is seen that MMR has reduced drastically and reached 81.51 in Dakshina Kannada during 2016.

Table 5: Institutional Deliveries and Immunisation (in Percent)

	Institutional Deliveries			Immunisation		
	India	Karnataka	Dakshina Kannada	India	Karnataka	Dakshina Kannada
NFHS-I (1992-93)	25.5	37.5	-	35.4	52.2	-
NFHS-II (1998-99)	33.6	51.1	-	42.0	60.0	-
NFHS -III (2005-06)	38.7	64.7	-	43.5	55.0	-
NFHS-IV (2015-16)	78.9	94.3	97.1	62.0	62.6	77.3
DLHS-I (1998-99)	34.0	50.0	-	54.2	71.8	-
DLHS-II (2002-04)	40.5	58.0	95.7	45.9	71.0	-
DLHS-III (2007-08)	47.0	65.1	96.0	54.0	76.7	89.5
DLHS-IV (2012-13)	74.0	89.0	98.7	*62.9	77.6	86.0

*Source:NFHS (National Family Health Survey) and DLHS (District Level Health Survey) various years*Coverage Evaluation Survey CES*

Safe motherhood depends mainly on delivery by trained or professional personnel, particularly through institutional facilities. The rate of increase in coverage of institutional deliveries in India is rather slow. It increased from 26 percent in 1992-93 to 47 percent in 2007-08. As a result, the coverage of deliveries by skilled personnel has also increased almost similarly by 19 percentage points from 33 percent to 52 percent during the same period. As the Table 5 shows institutional deliveries in India as per the NFHS -IV is 78.9 falling short of around 20 percent from the target. Karnataka state has a record of 94.3 percent institutional deliveries as per the report of NFHS -IV (2015-16). As per the report of DLHS-IV Dakshina Kannada has nearly hundred percent institutional deliveries.

Children are protected against various diseases through vaccination. The details of percentage of full immunisation of children are given in Table 5. Recent introduced Mission Indradhanush is a

booster to immunisation of children. It is observed that the rate of immunisation has increased but still there are around 40 percent who do not get full immunisation in India, 30 percent in Karnataka and around 12 percent in Dakshina Kannada as per DLHS IV.

The progress of the health indicators has been encouraging in the State during the last few years as compared to the country. Karnataka has performed relatively better in population control with total fertility rate in reaching the 12th five year plan target of 1.9 children per woman in the year 2013. The infant mortality has declined faster during the last five years to the tune of around 10 per 1000 live births from about 41 in 2009 to 31 in 2013 and it is 28 per 1000 live births as per NFHS-4.

Recent Economic Survey of India 2017-18 noted that child and maternal nutrition continues to be the most challenging factor for health loss in India (Business Line, January 30, 2018.pp 8). The Survey reported that limited affordability and access to quality medical services are major challenges contributing to delayed or inappropriate responses to disease control and patient management.

Table 6: Select Determinants of Women and Child Health (in percentage)

	Karnataka		**Dakshina Kannada**	
	DLHS-3	**DLHS-4**	**DLHS-3**	**DLHS-4**
Institutional delivery	65.1	89.1	96.0	98.5
Institutional delivery (JSY)	13.4	30.2	11.4	18.5
Delivery at private health institutions	32.1	37.2	66.2	69.6
Percentage of pregnancy resulting in live birth	93.1	95.0	90.6	95.8
Spontaneous abortion	4.1	2.8	6.1	2.4
Women (15-49 yrs) having anaemia	NA	64.6	NA	68.0
Sex ratio at birth	98	97	100.2	93.3
Children received full vaccination	76.7	77.6	89.5	86.0
Children with low birth weight (below 2.5 kg)	NA	7.6	NA	7.5
Children (6-59months) having anaemia	NA	72.9	NA	75.9

Source: DLHS-3, DLHS-4

Table 6 depicts some of the determinants of women and child health. It is observed from the above table that institutional delivery has improved both in the state as well as the district. It is disheartening to see that Dakshina Kannada district having highest human development index ranking in the state is performing badly in terms of sex ratio at birth, women and children with anaemia , extent of immunisation and children with low birth weight. It is also observed that number of delivery at private hospitals has increased during the survey period. This is an alarming sign to the concerned authorities.

Table 7: Indicators Influencing Health (in percentage)				
	Karnataka		Dakshina Kannada	
	DLHS-3	DLHS-4	DLHS-3	DLHS-4
Currently married women who are illiterate	39.6	32.3	18.3	10.2
Currently married women with 10 or more years of schooling	24.0	34.0	31.5	42.8
Female sterilization	56.7	57.6	35.6	32.8
Any method of family planning	61.8	62.5	50.6	48.9
Mean age of marriage for girls	19.8	20.5	22.5	23.5
Women with two children wanting no more children	45.2	48.2	68.5	73.1
Total unmet need of family planning	15.8	9.1	26.7	20.9
Villages with sub health centre within 3 km	66.1	77.5	71.0	93.6
Source: DLHS-3, DLHS-4				

Table 7 shows select indicators which influence health. It is observed that the education of currently married women has increased during the survey period for both the state and district. The number of sub health centres within 3km of villages has increased drastically in the district as compared to the state. Despite this delivery in private institutions has increased both in state as well as in the district. The use of any family planning method has decreased in the district.

The Karnataka State Health Department has come out with a Karnataka Child Health Action Plan which has the short term strategies to prevent infection by effective infection control policies both in delivery rooms and newborn units of all levels. The long term strategies include accreditation of delivery rooms using information technology. This action plan aims at reducing infant mortality rate to single digit by 2020 (The Hindu, December 14, 2015). The Dakshina Kannada district administration has decided to strengthen health care delivery to the urban poor by relocating a few urban primary health centres (UPHCs). Each UPHC will have a medical officer, paramedical and other supportive staff. Outpatient care, immunisation child health services, primary level care in curative services etc., will be provided. It is also proposed to provide basic laboratory services, pharmacy, referral services and assured specialist services once a week in these centres (The Hindu, July 29, 2015).

Conclusion

The above analysis, though preliminary in nature, reveals that the status of health of women and children is not satisfactory. Differences in socioeconomic status like education, religion, income

influences health status. The utilisation of health care services is influenced by the socioeconomic condition of individuals. The marginalised section of the society like the scheduled caste, scheduled tribe, less educated and low income group have poor health as compared to others. Education level of women and income has a positive impact on health of women in rural areas. Lack of education can lead to reduced ability to find, understand and use health information. Inclination towards private health institutions is visible in the above analysis. This shows that the confidence of people on health is deteriorating which is an alarming sign to the administration for the effective implementation of health programmes. There are also region wise variations in health. Public private partnership in health may be conducive in improving the confidence of people and availing health care. In India healthcare is a shared responsibility between the centre and state governments which is upheld with equality and equity. The good performing State as well as the district too is lagging in few indicators influencing maternal and child health. Though government has taken several measures to improve maternal and child health, challenges still remain as health is heterogeneous in nature.

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Gender Differentials in Economic Security & Functional Health Status of Elderly in India

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Abstract: *The burgeoning elderly populations in India face a high prevalence of chronic diseases, accompanied by inability or reduced ability to perform key activities such as walking, brushing etc. These functional limitations impact their quality of life, besides having repercussions for mortality, functional health and morale. While several factors predispose elderly towards these limitations, previous studies have found that women are more likely to experience these limitations. Women, however, may lack the adequate social and economic infrastructure to deal with these limitations. Thus, there may be a need tocarefully examine the factors leading up to the incidence of functional limitations. The present study assesses the relationship between gender-stratified wealth status and functional limitations in India. We find that elderly women are not only worse off economically, they are also more likely to have lower quality of life stemming from functional limitations. Other factors contributing to poor functional health status include age, education and marital status of the respondents.*

Key Words: ADLs, Economic Security, Elderly, Functional Limitations, Gender.

1.Introduction

Improving life expectancy, both at birth and in later ages, and dwindling fertility rates have contributed to rapid aging of the Indian population. The share of elderly population is projected to increase to 19 % by 2050 (from 8 percent in 2015) (UNFPA, 2017). The ageing of population is coupled with its feminization- rise in the proportion of women among the elderly - due to higher life expectancy of women (Rajan, 2001; United Nations, 2013; UNDESA, 2011; Balagopal, 2009). The sex ratio of elderly population is expected to 1060 by 2026 (UNFPA, 2017). In the scenario of weakening traditional family support systems, provision of economic and social security for healthy ageing is critical. Older women are particularly vulnerable to unmet need for healthcare (Panapasa, 2002), and the social predisposition against them puts them in a disadvantageous position (Prakash, 1999). There is thus a need to scrutinize health or economic security issues pertaining to the elderly, notably women.

With respect to the health conditions of the elderly, there is high prevalence of chronic conditions (NCDs) among this age group. Some of these chronic conditions are known to worsen restrictions in activities of daily living (ADLs) or functional limitations (Woo, 1998; Boult, 1994). These restrictions involve inability or difficulty on part of the elderly to perform certain basic activities of daily living such as walking, brushing, bathing etc. without dependence on others. There is an association between physical disability and depression even after controlling for various socio-economic factors. (Ganguly 1999; Barberger-Gateau, 1992; Beekman & Prince, 1999; Forsell et al., 1994). Poor functional health status is also a predictor of mortality (Scott, 1997). Elderly suffering from ADL disabilities come to be dependent on their families for caregiving, or in severe cases, the need for long term care or rehabilitation services.

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With the collapse of the traditional family structure, and rising costs of long term institutional care, the presence of these functional limitations present a considerable burden for elderly households. Majority of the elderly remain economically inactive and do not possess sufficient economic resources to support their health costs. The out-of-pocket health expenditure is sizeable for elderly households, especially elderly widows, who often lack financial security. Thus, the provision of economic and social security for healthy aging is critical (Arokiasamy et. al., 2012; Kumar, 2003; Kulkarni, Raju and Bammidi, 2014). In the long run, this would call for enhancing health infrastructure and its affordability for the elderly, particularly by setting up long term care facilities. In the interim it is imperative to make the lives of the elderly as comfortable as possible, with a special focus on the vulnerable sections. In this paper, we examine the economic and health condition of the Indian elderly, particularly women. We further test for a gender-stratified linkage between economic and health conditions and prevalence of disabilities in activities of daily living (ADLs), and identify any other risk factors for the existence of functional limitations.

2. Economic Security in Old Age

The informal sector accounts for nearly 90% of India's labour force and is instrumental for the absence of income security at old age. Income adequacy at retirement is accomplished either by inter-generational transfers or voluntary savings. The focus on financial inclusion is recent and leaves much to be desired. The passage of the Unorganized Workers Social Security Act (2008) has led to the proliferation of several welfare schemes. The lack of pensions or other welfare schemes has necessitated nearly 40% of the elderly to continue working after reaching the "retirement" age of 60 years (MoSPI, 2011). Elderly workforce, comprised mostly of those belonging to poorer socio-economic strata, is concentrated in the informal sector or in low-skilled or unskilled occupations (Reddy, 2016). Often, women find employment in the informal sector. Thus, savings from income for women tend to be abysmal. Further, inheritance laws limit the prospect of asset-based income for women. This has led to high economic dependence among elderly women: Only 14% and 17% of women are economically independent in rural and urban areas respectively, as opposed to 50% of the males (MoSPI, 2011). While the lack of savings is not a new phenomenon, fraying family ties and increasing longevity complicate the problem. Traditionally, families are seen to be providing an essential role in the care of elderly by means of income transfers and emotional support. The breakdown of the family may be attributed to several causes. Reduction in land holding size and lack of rural employment contribute to migration of workers towards urban or industrialized areas. Increased participation of women in the workforce has diminished their care-giving capacity to ageing parents. Further, expenses associated with the elderly are rising because of increased longevity that brings with it increased health spending.

3. Health Status of the Elderly in India

There is enormous burden of morbidity in old age, and it is tilted towards non-communicable

diseases (NCDs) such as diabetes, hypertension, coronary heart disease, osteo-arthritis, stroke, dementia, osteoporosis, cancer, enlarged prostate, depression, and cataract-related blindness. Ailment and hospitalization rates in this population are higher than other populations. NSS (2014) reports that 25% of persons aged 60-69 years in rural areas are ailing, while in urban (35%) this is still higher. The prevalence of multi-morbidity is as high as 30.6% among those aged 70 years or above. (Pati, 2014). Further, elderly women are more likely to report poor health (Singh, 2013), and there is a greater likelihood of women's diseases being long-term and chronic (Borooah, 2016), hence, they are more disadvantaged and underprivileged because of being old, poor and women (Prakash, 1999), and the wellbeing of financially dependent women thus lies in jeopardy. Besides gender, several socio-economic factors are known to play a part in the health status of individuals- age, education attainment, and consumption expenditure.

4. Gender, Economic Security & Functional Limitations

Socioeconomic and demographic factors are found to have an impact on functional ability (Bedoun, 2005). Studies conducted to assess the factors responsible for functional disabilities include age, gender and education. An increase in age increases the risk of functional limitations (Holmes, 2009). Females are more likely to experience functional limitations (Barbosa et al., 2005; Smith, 1997; Kastor, 2016; Nagarkar, 2017; Alam, 2011), while education reduces the risk of functional limitations. (Holmes, 2009; Arokiasamy, 2015; Kastor, 2016). Women are also progressively experiencing greater disability by increase in age (Holmes, 2009) or birth cohort (Sjölund, 2014). There is also greater likelihood of experiencing 3 or more disabilities among women than in men. Further, women may also lack assistance in coping with these limitations. (Alam, 2011). Education may play a part owing to psychosocial or behavioral issues (Honjo, 2009). Area of residence (rural or urban) is also influential. Co-residence (as opposed to living alone or with a spouse) is tied to the likelihood of disability (Bedoun, 2005). Social identity also plays a part in determining the existence of functional limitations. Historically disadvantaged groups tend to experience a greater likelihood of disability. (House, 1990; Holmes, 2009).

High incidence of chronic & multiple diseases coexist with higher risk of functional dependency (Arokiasamy, 2010). The presence of functional limitations is a predictor of progressively rising healthcare costs (Mor et al, 1994), morbidity and short-term mortality (Alam, 2011; Stineman, 2012). Low quality of care in public health has increased the reliance on market solutions- in this case private health care institutions. Considering rising poverty among the elderly, lack of formal long-term care facilities coupled with the changing family structure spells doom for India's elderly population. Previous studies pertaining to India examining the correlates of functional limitations are restricted to only select states, and hence their replicability for the rest of the country is questionable. There is also a lack of consensus regarding the linkage between wealth and the functional health status of older adults in India. Through this study, we aim to explore the nexus between gender-stratified economic security and ADL disabilities in India. The study will contribute to a larger literature on the gender-stratified economic conditions of the Indian elderly, while also drawing up its link with health conditions.

5. Materials &Method

5.1 Data

The study utilized the second round of the India Human Development Survey (IHDS), 2012 which is a national household level survey collecting information on various aspects relating to households-income and social capital, education and health and gender relations, to name a few. The survey was jointly organized by researchers from the University of Maryland and the National Council of Applied Economic Research (NCAER), New Delhi. Certain variables used in this study were constructed keeping in mind the goals of this study. The definitions of these are present below:

5.2 Measures of Socio-Demographic Characteristics

For the purposes of this paper, as in the National Policy on Older Persons, 1999, *elderly* have been defined as those aged 60 years or above. In our analysis, we use three age groups: 60 to 70 years of age, 70 to 80 years of age or aged 80 years or above. *Marital status* is categorized as married, widowed or others. The category "others" includes those who are unmarried, separated or divorced or those who are married but *gauna* has not been done. *Educational status* of the individual is categorized as illiterate, having primary or lower level of education, secondary or lower level of education or those had completed graduation or higher levels of studies.

5.3 Measures of Health

We define the presence of functional limitations as having difficulty in, or inability to perform at least one of the following activities of daily living (ADL): walking 1 km, seeing distant things (with glasses, if any), seeing near objects, such as reading/ sewing (with glasses, if any), going to toilet without help, dressing without help, hearing normal conversation or speaking normally. Further, data on ailments of the short-term - fever, cough or diarrhea- if occurring 30 days prior to reporting is present in the data. IHDS identifies several long-term diseases such as Cataract, Tuberculosis (TB), High Blood Pressure, Heart disease, Diabetes, Leprosy, Cancer, Asthma, Polio, and Accident in the last 12 months, Other Long-Term Diseases, Paralysis, Epilepsy, Mental illness or STD/AIDS. An individual ailing from two or more long-term diseases was identified as experiencing multi-morbidity.

5.4 Measures of Economic Well-being

The economic status of the elderly households is assessed by examining various parameters-wealth, primary activity, income from pensions & property and coverage via various social protection schemes through the lens of age, gender & habitation status. The use of wealth as an indicator of economic wellbeing is necessitated by the problems of recall bias or seasonality that plague consumption or income estimates. Often, as in our case, data on income is missing for considerable observations. To remedy this, the use of asset-based indicators has gained prominence (Gwatkin, 2007; Filmer &Pritchet, 2001). An asset-based evaluation of wealth draws from long-term lifetime income, and may be a better predictor of health, which is a stock.

5.5 Exploring Gender Differences

To assess the health status and economic security of the elderly, gender-stratified descriptive statistics & chi-square test were employed. We examine economic security by wealth terciles, income from (government or private) pensions or property, and their present activity status. Morbidity patterns are assessed by looking at the incidence of or treatment sought for short-term or long-term diseases. The relationship of functional health status of the elderly with their gender and wealth is addressed via a

multivariate logit model. The model adjusts for various covariates- education status, multi-morbidity, residence and marital status.

6. Results

The details of variables used, and their frequencies are reported in Table 1 below.

		Percent			Percent
Age Group	**60-70 years**	60.02	**Marital Status**	**Married**	60.98
	70-80 years	28.64		**Widowed**	36.65
	80 years +	11.34		**Others**	2.37
Sector	**Rural**	67.41	**Education Level**	**Illiterate**	57.04
	Urban	32.59		**Primary Education**	17.87
Region	**Central**	19.05		**Higher secondary**	20.92
	East	15.87		**Graduate or above**	4.17
	North	22.48	**Multi-morbidity**	**No Diseases**	67.42
	North East	3.15		**One chronic Disease**	22.52
	South	25.16		**Two or more Chronic Diseases**	10.06
	West	14.30	**Wealth**	**Low**	31.92
Living Arrangement	**Living with Others**	96.68		**Medium**	31.35
	Living Alone	3.32		**High**	36.73
Gender	**Male**	47.97			
	Female	52.03			

6.2 Economic Security of the Elderly

The details of wealth and income sources of the elderly are present in table 2 and 3. Table 2 shows the distribution of the population by various wealth terciles. In general, elderly living alone have lower chances of belonging to the higher wealth terciles. Relatively "younger" elderly (those aged between 60-80 years) living with others tend to be spread out across the different wealth terciles. However, among the elderly aged 80 years or above co-residing with others there is a higher chance of belonging to higher wealth terciles.

Table 2: Distribution of elderly population by wealth terciles

Age	Gender	Living Arrangement	Wealth Terciles			
			Low	Middle	High	
60-70 years	**Female**	**Living Alone**	78.85	13.78	7.37	100
		Others	31.78	32.24	35.98	100
	Male	**Living Alone**	77.78	16.67	5.56	100
		Others	29.24	31.72	39.03	100

70-80 years	**Female**	**Living Alone**	81.63	13.78	4.59	100
		Others	28.79	33.25	37.96	100
	Male	**Living Alone**	81.48	9.26	9.26	100
		Others	30.71	32.01	37.28	100
80 years +	**Female**	**Living Alone**	87.23	8.51	4.26	100
		Others	26.61	30.43	42.97	100
	Male	**Living Alone**	79.17	8.33	12.5	100
		Others	29.02	30.77	40.21	100

Table 3: Proportion of elderly having access to income from pensions or property

Age Group	Gender	Living Arrangement	Income Source		
			Income from Property	Pension from Government	Pension from Private Work
60-70 years	**Female**	**Living Alone**	4.81	10.3	1.3
		Others	3.98	14.9	1.2
	Male	**Living Alone**	5.56	16.7	0
		Others	3.82	15.8	1.9
70-80 years	**Female**	**Living Alone**	6.63	9.7	0
		Others	4.45	12.7	0.8
	Male	**Living Alone**	5.56	7.4	0
		Others	4.32	18.1	1.2
80 years +	**Female**	**Living Alone**	8.51	14.9	0
		Others	3.75	11.9	0.6
	Male	**Living Alone**	4.17	16.7	4.2
		Others	3.85	15.5	0.3

Presently, "income" sources of the elderly drives from pensions (either private or social), family transfers, and asset-based consumption. In the IHDS-II dataset, information on income transfers is not available. The details of private & social pensions and asset-based consumption (property) are presented in Table 3. Despite their predominance in lower wealth terciles, elderly living alone have very poor coverage under various pension schemes. Less than 10% of the elderly in either age-gender-living arrangement derive income from property. Coverage from government pensions is slightly more promising, but the figures remain abysmally low. Private pensions present a bleaker picture, with coverage not exceeding 2% of population, except for elderly males aged 80 years or above living alone.

The coverage of BPL households under the Old Age Pension Schemes is shown in Table 4.Less than 25% of BPL households are covered under the Indira Gandhi National Old Age Pension Scheme (IGNOAPS). Elderly men aged between 70-80 years living alone experience the highest coverage in their age-gender-living arrangement intersection, while co-residing women aged between 70-80 years'

experience the lowest coverage. The coverage of Annapurna Scheme (intended for BPL households eligible for IGNOAPS) is much lower.Here also the highest coverage is with men aged 70-80 years living alone. Several intersectional groups experience zero coverage.

Table 4: Coverage of elderly population (BPL) by government social security schemes

Age Group	Gender	Living Arrangement	Government Social Security Scheme	
			Indira Gandhi Old Age Pension Scheme	Annapurna Scheme
60-70 years	Female	Living Alone	16.67	0.64
		Others	8.44	0.08
	Male	Living Alone	11.11	0.00
		Others	8.02	0.10
70-80 years	Female	Living Alone	17.35	0.00
		Others	9.75	0.07
	Male	Living Alone	24.07	1.85
		Others	15.07	0.03
80 years +	Female	Living Alone	21.28	0.00
		Others	9.94	0.00
	Male	Living Alone	8.33	0.00
		Others	15.38	0.17

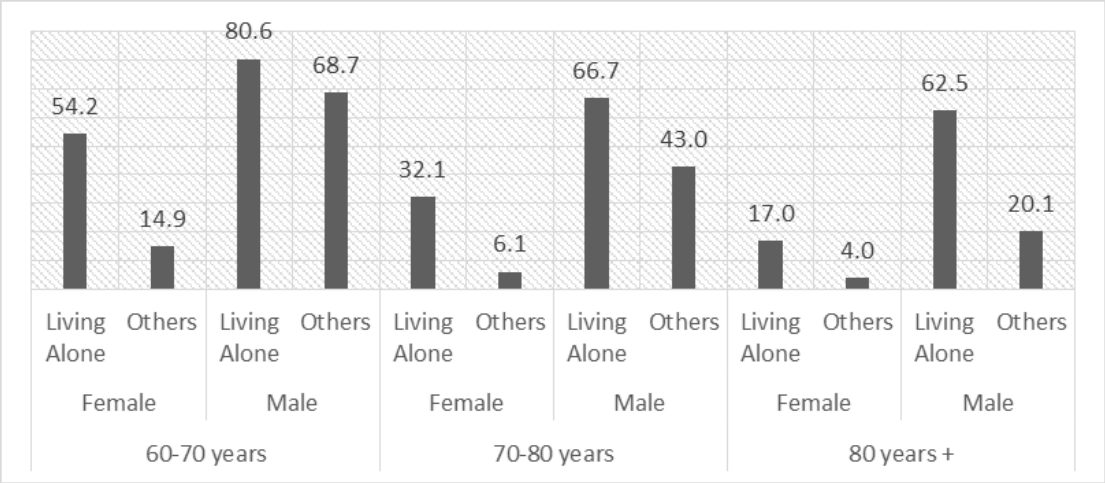

Figure 1: Percentage of Elderly Engaging in Paid Work

Figure 1 shows the percentage of elderly in various age groups who do not identify themselves as retired, indulged in household work, unfit or unemployed. 42% of the elderly aged 60-70 years and 20% of the elderly aged 80 years and above continue to work. 80% of elderly males aged 60-70 years living alone are engaged in work.

6.3 Patterns of Morbidity

An examination of the morbidity profile (Table 5) among the elderly reveals high prevalence of long-term illness.One-third of this population suffers from long-term illnesses. Short term illness (fever/cough/diarrhea) was most reported for females aged between 60-70 years, and males in the same age group reported the lowest incidence. In case of short-term illness, almost all cases were treated or advised. The gap between incidence of a short-term illness and its treatment is highest in the case of males aged 70 & above. The proportion of those who sought treatment for their long-term illness is one percentage point lower than the incidence values. This may be attributed to higher cost involved in the treatment of long-term illnesses. 55% of those not seeking treatment have non-APL ration cards.

Table 5: Health Status of the elderly

	60-70 years		70-80 years		80 years +	
	Female	**Male**	**Female**	**Male**	**Female**	**Male**
Whether Reported any Short-Term Illness	21.78	14.60	18.70	18.60	16.90	18.15
Whether Reported any Long-Term Illness	32.82	29.16	34.92	34.20	32.25	38.70
Whether Treated or advised for any Short-Term Illness	21.20	14.19	18.12	17.77	16.31	17.29
Whether Treated or advised for any Long-Term Illness	31.99	28.43	33.37	33.70	31.07	37.24

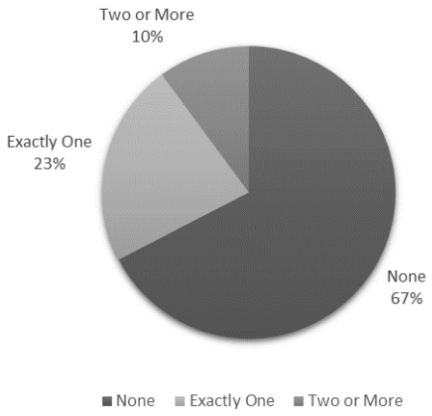

Figure 2: Prevalence of multi-morbidity among the elderly

There is high prevalence of chronic diseases in this age group: 32% of the elderly suffer from at least one chronic disease (Table 6). The incidence of these chronic diseases across age and gender are reported in Table 7. Among the long-term diseases that plague this population, high blood pressure afflicts the most people across all demographic groups. Other diseases that are common include asthma, diabetes, cataract and other long-term diseases. Diabetes (cataract) is the third most common long-term disease among the 60-70-yearolds (70 years and above).

Table 6: Disease profile of the elderly, by age & gender

	60-70 years		70- 80 years		80 years and above	
	Female	**Male**	**Female**	**Male**	**Female**	**Male**
Cataract	5.46	3.60	7.15	5.74	8.71	8.05
Tuberculosis	0.55	1.00	0.55	0.87	0.52	0.94
High Blood Pressure	14.01	9.82	14.63	12.26	13.36	12.16
Heart Disease	2.63	3.14	3.02	3.57	2.51	4.45
Diabetes	7.39	7.57	6.81	8.05	5.46	6.25
Leprosy	0.14	0.13	0.12	0.30	0.07	0.17
Cancer	0.18	0.21	0.34	0.23	0.22	0.43
Asthma	3.22	4.38	4.67	5.54	4.94	6.68
Polio	0.03	0.10	0.03	0.13	0.00	0.00
Paralysis	1.65	1.49	2.51	2.57	3.76	3.34
Epilepsy	0.49	0.28	0.64	0.33	0.37	0.34
Mental Illness	0.55	0.44	0.61	0.17	0.59	0.51
STD or AIDs	0.08	0.05	0.00	0.00	0.00	0.00
Accident	0.60	0.87	0.34	0.80	0.89	0.68
Other Long-Term Diseases	9.74	7.31	9.17	8.72	8.34	10.45

6.4 Functional Health Status of the Elderly

Roughly 30% of the individuals reported difficulty in, or inability to perform at least one of the activities of daily living.7% of the study group were unable to walk 1 km.

Table 7: Details of Functional Limitations among the elderly

Activity of Daily Living	**Level of Competence**		
	No Difficulty	**Can do it with difficulty**	**Unable to do it**
Walking 1 km	77.8	14.58	7.62
Going to toilet without help	91.31	5.89	2.8
Dressing without help	93.93	3.7	2.38
Speaking normally	90.09	8.09	1.82
Hearing normal conversation	94.91	3.83	1.26
Seeing distant things [with glasses, if any]	81.7	14.88	3.42
Seeing nearby objects [with glasses, if any]	84.31	12.64	3.05

The following tables show the percentage distribution of presence of functional limitations in various social, demographic, economic or health variables. There is a positive gradient of age with functional limitations. 33% of females, as opposed to 26% of males experience functional limitations. The incidence is higher in elderly who are widowed, illiterate or belong to the Southern region.

Table 8: Prevalence of functional limitations across several social, demographic & regional groups

		Presence of Functional Limitations				Presence of Functional Limitations	
		No	**Yes**			**No**	**Yes**
Age Group	60- 70 years	77.5	22.5	**Region**	Central	64.1	35.9
	70-80 years	63.9	36.1		East	78.1	21.9
	80 years +	48.5	51.5		North	71.5	28.5
Marital Status	Married	74.9	25.1		North-East	93.6	6.4
	Widowed	62.5	37.5		South	62.6	37.4
	Others	67.9	32.1		West	75.0	25.0
Sex	Male	73.9	26.1	**Religion**	Hindu	69.9	30.1
	Female	66.6	33.4		Muslim	72.2	27.8
Education	Illiterate	67.8	32.2		Others	70.21	29.79
	Primary Education	69.7	30.3				
	Higher secondary	75.2	24.8				
	Graduate or above	79.3	20.7				

The presence of chronic diseases greatly increases the chances of functional limitations. 55% of the elderly afflicted by two or more chronic diseases have ADL limitations, as opposed to 22% of the elderly having no chronic diseases.

Table 9: Prevalence of functional limitations by health status

		Functional Limitations	
		No	Yes
Multi-morbidity	**No diseases**	77.8	22.2
	One Chronic Disease	58.4	41.6
	Two or More Chronic Diseases	44.7	55.3

A movement from low to high wealth terciles greatly reduces the proportion of elderly suffering from functional limitations (33% in the low wealth tercile, as opposed to 28% in the high wealth tercile). The availability of pensions is associated with higher incidence of limitations. 34% of the elderly receiving pensions suffer from functional limitations, while 28% of those not receiving pensions experience limitations.

Table 10: Prevalence of functional limitations by wealth and income transfers

		Functional Limitations	
		No	**Yes**
Wealth Quantile	**Low**	67.1	32.9
	Medium	71.2	28.8
	High	71.8	28.2
Availability of Pension	**No**	71.3	28.7
	Yes	65.1	34.9

6.4.1 Results of logit modle

The results from the logit model are present in table 11 below. We find that age has a strong, significant positive gradient with the incidence of functional limitations. Compared to elderly aged 60 to 70 years, elderly aged 70 to 80 years are 85% more likely to have limitations, while for the elderly aged 80 years or above, the odds greatly increase to 3.52. Exploring the role gender and wealth play in the incidence of functional limitations, we find that females are more likely to experience functional limitations.

Education plays a role in the occurrence of functional limitations. Persons who have completed highersecondary levels of education have 22 % lower chances of experiencing some form of limitation, while those who have completed graduation have 30% lesser chance of experiencing functional limitations, compared to those who have not received any formal education. Area of residence (rural or urban) affects the odds of experiencing functional limitations, as those living in urban areas are 10% less likely to conceive inability in performing ADLs. Marital status is seen to have an impact, as married individuals are least likely to experience limitations. No significant association of functional limitations with living arrangement is seen.

Health status of individuals, particularly thepresence of multi-morbidity, has a strong positive & significant impact on the occurrence of functional limitations.

Table 11: Results of Multivariate logistic regression

		Odds Ratio		Std. Err.	95% Conf. Interval
Age Group	60-70 years (reference category)				
	70-80 years	1.85	***	0.07	1.73 -1.99
	80 years +	3.51	***	0.17	3.19 -3.87
Gender	Male (reference category)				
	Female	1.24	***	0.05	1.15 - 1.34
Wealth Tercile	Low (reference category)				
	Middle	0.81	***	0.03	0.74 - 0.87
	High	0.73	***	0.03	0.67 - 0.80
Education Level	Illiterate (reference category)				
	Primary Education	1.00		0.05	0.91 - 1.09
	Higher secondary	0.88	***	0.04	0.80 - 0.97
	Graduate or above	0.70	***	0.07	0.58 - 0.86
Residence	Rural (reference category)				
	Urban	0.91	***	0.03	0.84 - 0.98
Marital Status	Married (reference category)				
	Widowed	1.25	***	0.05	1.16 - 1.35
	Others	1.25	***	0.13	1.02 -1.52
Living Arrangement	Living with Others (reference category)				
	Living Alone	1.19	***	0.10	1.00 - 1.40
Multi-morbidity	No Diseases (reference category)				
	One chronic Disease	2.63	***	0.10	2.45 - 2.83
	Two or more Chronic Diseases	5.01	***	0.25	4.54 - 5.54
Intercept		0.20	***	0.01	0.18 - 0.22

7. Discussion

With a breakdown of thetraditional family system, the economic and social security of the elderly is under threat. Social isolation, coupled with muscular degeneration and high prevalence of chronic diseases all threaten the quality of life in old age. We find that elderly living alone, particularly women, are both more likely to belong to lower wealth terciles. A high proportion of wealthy elderly in the 80+ years age group is indication to higher rates of survival and quality of care among wealthier households. Few elderlies have availability of "income"- pension from private or government, social protection schemesorasset-based consumption. This has translated into the absence of a retirement phenomenon- notably for the elderly living alone. They are often involved in the informal sector.

The long-term employment trends tilting toward informal sector employment and lack of financial literacy are all stacked against the creation of a viable retirement plan. In a society where co-residence forms an important part of elder care and support, the prevalence of poverty among the elderly living alone points towards the need for more secure sources of income for the elderly.The introduction of the Indira Gandhi Old Age Pension Scheme was a promising step in this regard, but the coverage of the scheme needs to be enhanced. There is evidence that poorer households increase their contribution to micro pensions corresponding to a matching increase by the government (Mukherjee, 2014). This could be harnessed to gradually build a sizeable economic reservoir. Studies have suggested providing social pensions to the elderly will have multiple benefits, it can enhance older people to gain access to health care, can also improve the status of older people among families and communities, boost psychological well-being, boost school enrolment and nutritional intake, support economic growth and promote gender equality. Providing economic security to the older persons is thus a very crucial step in achieving active ageing for any country and will create synergies in welfare generation.

The need for secure sources of elderly is further intensified considering the high prevalence of chronic diseases among the elderly, and the catastrophic out-of-pocket expenses associated with these. One in three elderly are suffering from chronic diseases, and the expenses on doctors, hospitals & surgery increase linearly with age for both males & females. With absence of medical insurance, health expenses can wreak havoc on family budgets. There thus may be a need to establish schemes catering specifically to the more vulnerable sections of the society. On both fronts of economic security and functional health, women continue to be the underprivileged sex. Elderly women are not only worse off economically, they are also more likely to have lower quality of life stemming from ADL limitations. Other factors contributing to poor functional health status include age, education and marital status of the respondents.

The findings of this study will have implications on social security and health policy design. There is a need to identify vulnerable sections of the society through the intersection of their social identities. The predisposition of certain groups towards ailments can be tackled by adequate provision of social security measures. As a limitation of this study, we note that the existence of functional limitations is established via self-reporting by individuals. Self-rated health is not always the most reliable measure. Further, comparison of our work with previous works assessing the risk factors of ADL limitations is hindered by the definitions of functional limitations.

8. Conclusion

The provision of long term affordable institutional care may be something that needs to be achieved in the long run. Meanwhile, targeting the vulnerable sections of the society should be a priority. The results make a suitable case for regularly recording gendered-statistics on different

measures of economic and social security that might help assess the resources capacity for elderly population and their ability to invest in their own health and nutritional status, particularly older women. There is a need for the introduction of social security schemes and financial literacy to boost pension savings, which will go a long way in helping elderly men & women. While there has been an introduction of various pension and social security schemes at both national and state level, mechanisms to ensure their take-up, and mechanisms to reduce leakages need to be put in place. Increased awareness about these programs is also in order.

The introduction of further programs for targeting must emphasise on careful targeting population groups based on their vulnerability. Elderly women living alone, particularly those belonging to lower wealth terciles need specific intervention programmes. Besides a gender differential in health outcomes, other identity intersections could shape vulnerability, and adequate focus needs to be placed on these. The strengthening of social security provisions is an immediate, essential need of the Indian elderly, and the provision of, and upgradation of existing health facilities, could alleviate some of the burdens that disabilities pose to the elderly.

9. Conflict of Interest

No conflict of interest was reported by all authors.

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RELIGIOUS DIFFERENTIALS IN DOMESTIC VIOLENCE AGAINST WOMEN AND IMPACT ON WOMEN'S HEALTH : EVIDENCE FROM NFHS-4

Malika B. Mistry*

Abstract : *NFHS-4 (2015-16) collected detailed information on physical, sexual and emotional violence perpetrated by the husbands against their wives, physical consequences of spousal violence and the help-seeking behaviour of the women*

Data are available by religion on various forms of violence experienced by women respondents age15-49. It would be interesting to study the religious differentials in domestic violence and impact on the health of the women. Hence in this paper, a humble attempt is made to study the same.

The objectives of this study are (1) to identify the domestic violence against women by religion; (2) to find its impact on health of the women and (3) to make some recommendations based on our study which will have policy implications. We will also present some case studies to analyze the impact of domestic violence on the physical and mental health of women.

Differentials by religion in respect of physical violence against women are large. Hindu women report the highest level of physical violence (30.6 %) followed by Christian (29.7%), Muslim (24.9%) and Buddhist (20.9%) women.

Regarding spousal violence, the highest prevalence of physical, sexual and emotional violence is found among the Hindu women (34%) followed by Christian (33.1%), Muslim and Buddhist women (31.4% and 23.4% respectively).

NFHS-4 studied the help-seeking behavior of the women victims. We find that the most educated women or women in the highest wealth quantile are less likely to seek help than less educated or less wealthy women.

We conclude that to reduce domestic violence we need to empower the women physically, economically and emotionally. We need to respect our women. Unless there is a change in the attitude of society in general and family members in particular towards women, there won't be much change in the incidence of domestic violence against women.

Introduction

Violence of any kind has a detrimental impact on the economy of a country through increased disability, medical costs, and loss of labour hours. Women bear the brunt of domestic violence. Therefore they disproportionately bear the health and psychological burden. Victims of domestic violence are abused inside what is supposed to be most secure environment i.e. their home and usually by the person whom they trust the most.

NFHS-4 (2015-16) collected detailed information on physical, sexual and emotional violence perpetrated by the husbands against their wives, physical consequences of spousal violence and the help-seeking behaviour of the women victims. Special training was given to the investigators for collecting data in a secure, confidential and ethical manner on domestic violence from the women respondents.

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NFHS-4 defined domestic violence to include violence by spouses as well as by other household members. It used international standards to measure the physical, sexual and emotional violence against the women.

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Objectives of the study

The objectives of this study are (1) to identify the domestic violence against women by religion; (2) to find its impact on health of the women and (3) to make some recommendations based on our study which will have policy implications. We will also present some case studies to analyze the impact of domestic violence on the physical and mental health of women.

Experience of violence from any one

In general, 30 per cent of the women in India experienced physical violence since age 15 where as 21 per cent experienced physical violence in the last 12 months preceding the survey. Six per cent women ever experienced sexual violence in their life time. Four per cent of ever pregnant women experienced physical violence during any pregnancy.

Perpetrators of physical violence

Among the ever married women, age 15-49, 83 per cent reported their current husbands as the perpetrators while 7 per cnet reported former husbands as the perpetrators. For never married women, the most common perpetrators are mothers or step-mothers (60%), fathers or step-fathers (32%), sisters or brothers (26%) and teachers (15%).

Now let us examine the religious differentials in violence:

Physical violence

In the following table, percentage of women age 15-49 who have ever experienced physical violence since age 15 and percentage who have experienced physical violence during the 12 months preceding NFHS-4 by religion for all India , 2015-16, are given .

Differentials by religion in respect of physical violence against women are large. Hindu women report the highest level of physical violence (30.6 %) followed by Christian (29.7%), Muslim (24.9%) and Buddhist (20.9%) women. While variation in violence in the past 12 months by religion has a similar pattern, the differentials are smaller

Table 1 : Experience of physical violence

Religion	% who have ever experienced physical violence since age 15	% who have ever experienced physical violence in the past 12 months (often or sometimes)	Number of women
Hindu	30.6	22.0	63960
Muslim	24.9	17.6	11420
Christian	29.7	21.5	1983
Sikh	19.7	14.9	1212
Buddhist/neo-Buddhist	20.9	14.3	674
Jain	10.8	10.3	120
Other	30.7	20.7	360
Total	29.5	21.2	79729

Source : NFHS-4 India Report p.574. 575

Table 2 : Experience of violence during pregnancy

Religion	% who experienced violence during pregnancy	Number of women who have ever been pregnanct
Hindu	3.9	46908
Muslim	3.5	7895
Christian	5.4	1379
Sikh	2.7	830
Buddhist/Neo-Buddhist	3.4	479
Jain	0.7	85
Other	8.2	266
Total	3.9	57842

Source : NFHS-4 India Report p.576

In the above table, percentage of women age 15-49 who have ever been pregnant and experienced physical violence during pregnancy, by religion for India, 2015-16, is given. Domestic violence experienced by women during pregnancy is comparatively very low. The highest percentage of violence is found among the Christian women (5.4) followed by Hindu (3.9), Muslim (3.5) and Buddhist (3.4) women. This may be due to the Indian value that pregnant women should not be hurt because they are carrying children in their wombs.

Prevalence of sexual violence

Women age 15-49 were asked if they had ever experienced sexual violence by any one as a child or as an adult. In Table 3, percentage of women age 15-49 who have ever experienced sexual violence, by religion for India, 2015-16, is presented.

Table 3 : Experience of sexual violence

Religion	% who have ever experienced sexual violence	Number of women
Hindu	6.0	63960
Muslim	5.1	11420
Christian	5.6	1983
Sikh	4.0	1212
Buddhist/Neo-Buddhist	3.4	674
Jain	4.1	120
Other	13.0	360
Total	5.8	79729

Source : NFHS-4 India Report p.578

In general 6 per cent of women reported having experienced sexual violence sometime in their life time We find that the highest percentage of sexual violence is experienced by Hindu women followed by Christian, Muslim, Jain, Sikh and Buddhist women.

Who are the perpetrators? Eighty-three per cent of the women who ever experienced sexual violence reported their current husband and 9 per cent their former husband as the perpetrators. Among the never married women who reported sexual violence , the most common perpetrators are 'other relatives' (30%), current or former boy friend (16%), their own friend or acquaintance (15%), a family friend (13%), strangers (6%) and teachers (5%) as perpetrators. .

Spousal violence

Percentage of ever married women age 15-49 who ever experienced emotional, physical or sexual violence committed by their husband, by religion for India 2015-16, is given in the following table.

Table 4 : Spousal violence by religion, India, NFHS-4,2015-16

Religion	(%) Emotional Violence	(%) Physical Violence	(%) Sexual violence	% who have ever experienced emotional, physical or sexual violence	Number of women
Hindu	14.0	30.5	6.7	34.0	50215
Muslim	14.1	27.1	6.4	31.4	8449
Christian	14.0	28.8	6.0	33.1	1474
Sikh	6.8	19.2	5.0	20.9	888
Buddhist/NeoBud.	9.7	22.7	4.1	23.4	510
Jain	4.8	10.7	5.3	14.3	93
Other	9.5	32.3	16.0	34.1	278
Total	13.8	29.8	6.6	33.3	61906

Source : NFHS-4 India Report p.587, 588

In general 33 per cent of ever married women experienced physical, sexual or emotional violence from their spouses. The most common kind of spousal violence is physical violence (30%)

followed by emotional violence (14%) and sexual violence (7%). Now let us examine the religious differentials in spousal violence

Regarding spousal violence, the highest prevalence of physical, sexual and emotional violence is found among the Hindu women (34%) followed by Christian (33.1%), Muslim and Buddhist women (31.4% and 23.4% respectively).

Regarding emotional violence only, the highest percentage is found among Muslim women (14.1) followed by Hindu and Christian women (14.0 each). Thus Muslim, Hindu and Christian women almost experience the same level of emotional violence. They are followed by Buddhist, Sikh and Jain women.

In case of physical violence only, the highest percentage is found among rahe Hindu women (30.5) followed by Christian and Muslim women (28.8 and 27.1 respectively).

In case of sexual violence only, the highest percentage of victims is found among the Hindu women (6.7) followed by Muslim (6.4) and Christian (6.0) women.

Among the three types of violence, most common type of violence is that of physical violence and the least common type of violence is that of sexual violence.

An interesting feature of this violence is that women who report that their fathers beat their mothers are much more likely (58%) to have themselves experienced spousal violence than women who report that their fathers did not beat up their mother (26%). This is a manifestation of inter-generational effect of spousal violence.

Marital control by husbands

Violent husbands try to control and monitor their wives behaviour. So it is important to study the types of marital control the violent husbands try to exercise over their wives.

NFHS-4 has collected data on 6 types of marital control exercised by the husbands over their wives. Percentage of ever married women age 15-49 whose husbands have ever demonstrated specific types of controlling behavior, by religion India, 2015-16, is given in the following table.

Table 5 : Degree of marital control exercised by husbands, India, NFHS-4, 2015-16

	Percentage of Women whose husband								
Religion	**Jeal-ous**	**Accu-ses**	**Does Not(P)**	**Tries to**	**Insi-sts on**	**Does Not (M)**	**Dis-Plays3**	**Dis-Play none**	**Number of women**
Hindu	26.6	8.8	21.9	16.9	20.3	24.7	19.2	49.2	50215
Muslim	27.1	8.7	22.9	16.8	21.4	25.0	20.2	50.1	8449
Chris.	20.8	7.1	16.1	14.4	16.8	11.9	13.5	59.6	1474
Sikh	29.0	5.8	10.2	8.4	18.0	15.1	10.1	55.5	888
Budd./Neo-B	16.4	8.2	10.7	7.9	7.6	12.0	8.2	68.5	510
Jain	16.3	6.5	18.3	17.1	18.0	15.8	13.2	58.7	93
Other	17.3	6.2	27.3	12.6	37.7	31.7	26.1	37.5	278
Total	26.5	8.7	21.6	16.6	20.3	24.2	19.0	49.8	61906

Source : NFHS-4 India Report p.587, 584

Jealous= is jealous or angry if she talks to other men
Accuses= Frequently accuses her of being unfaithful
Does Not (P)= Does not permit her to meet her female friends
Tries to= Tries to limit her contact with her family
Insists on= Insists on knowing where she is at all times
Does not (M)= Does not trust her with any money
Displays 3= Displays 3 or more of the specific behaviours
Displays none= Displays none of the specific behaviours

In general, 27 per cent of the women reported that their husbands are jealous or angry if they talk to other men, 24 per cent reported that their husbands did not trust them with any money, 22 per cent said that their husbands do not permit them to meet their female friends where as 20 per cent of the husbands wanted to know where their wives were at all times, 17 per cent reported their husbands try to limit their contact with their families and 9 per cent reported that their husbands frequently accuse them of being unfaithful. Over all 19 per cent of ever married women report that their husbands display three or more types of the specific behavior and 50 per cent reported that they display none of the specific behavior

Now let us examine the religious differentials in types of marital control .:

The first type of marital control is that 'the husband gets jealous or angry if the wife talks to other men'. The highest percentage of Sikh women (29) reported that their husbands exhibit this behavior. They are followed by Muslim, Hindu, Buddhist and Jain women.

The second type of marital control is that 'the husband frequently accuses the wife of being unfaithful.' This behavior is experienced the most among the Hindu women (8.8%). They are followed by Muslim (8.7%), Buddhist (8.2%) and Christian (7.1%) women. We find that the difference in this behavior between Hindu husbands and Muslim husbands is marginal.

The third type of control is that 'the husband does not permit his wife to meet her female friends.' This behavior is found the most among the Muslim women (22.9%). They are followed by Hindu (21.9%), Jain (18.3%) and Christian (16.1%) women.

The fourth type of marital control is that ' the husband tries to limit wife's contact with her family.' This type of behavious is found to be the highest among the Jain women (17.1%). This is surprising. They are followed by Hindu (16.9%), Muslim (16.8%) and Christian (14.4%) women. We find that the difference between Jain, Hindu and Muslim husbands in this respect is marginal.

The fifth type of marital control is that 'the husband insists on knowing where his wife is at all times.' The Muslim women have reported the highest percentage of such behavior of their husbands (21.4). They are followed by Hindu (20.3%), Sikh and Jain (18.0% each) women.

The sixth type of marital control is that 'the husband does not trust his wife with any money.'

This behavior is found to be the highest among the Muslim husbands followed by Hindu, Sikh and Jain husbands.

NFHS-4 has also collected data on 3 or more types of behavior by the same husband towards his wife. Combination of different types of marital control spells more danger for the victims. Highest percentage of such behaviour of the husbands is reported by the Muslim women (20.2). They are followed by Hindu (19.2%), Christian (13.5%) and Jain (13.2%) women. In general we find that Muslim and Hindu husbands are closer to each other in controlling their wives.

Degree of marital control exercised by husbands with none of the above-mentioned specific behavior is found to be the highest amongst the Buddhist women (68.5%) followed by Christian (59.6%), Jain (58.7%) and Sikh (55.5%) women.

Violence against husband

It would be interesting to know about the violence perpetrated by women against their husbands. Percentage of ever married women age 15-49 who have ever committed physical violence against their husbands (when they were not already being beaten or physically being hurt by them) and in the past 12 months is presented in the following table.

Table 6 : Violence by women against their husbands

Religion	% who have ever committed physical violence against their husband	% who have committed physical violence against their husband in the past 12 months	Number of women
Hindu	3.7	3.1	50215
Muslim	2.5	2.1	8449
Christian	5.0	3.9	1474
Sikh	1.1	1.0	888
Buddhist/neo-Buddhist	3.0	2.0	510
Jain	1.9	1.9	93
Other	2.7	2.3	278
Total	3.5	2.9	61906

Source : NFHS-4 India Report p.596

We observe that in general 4 per cent of ever married women ever initiated physical violence against their husbands when they were not already beating or physically hurting them. Three per cent reported that they initiated such violence within the past 12 months.

Religious differentials in perpetrating violence against husbands, are as follows:

The highest percentage of Christian women (5.0) reported that they have ever inflicted physical violence on their husbands. They are followed by Hindu, Buddhist, Muslim, Jain and Sikh women. The percentage of women who initiated physical violence in the last 12 months against their husbands is as follows :- Christian (3.9), Hindu (3.1), Muslim (2.1), Buddhist (2.0), Jain (1.9) and Sikh (1.0)

However we have to note the fact that the violence inflicted by women against their husbands is much lower compared to that perpetrated by the husbands on their wives.

Impact on health

Injuries due to spousal violence

Domestic violence has deep impact on women's lives both in terms of physical and psychological problems. They suffer from cuts, bruises and wounds and their productivity goes down. They develop depression, hyper tension due to stress and low self-esteem. They lose interest in life and may commit suicide.

In general 25 per cent of ever-married women who experienced spousal violence report experiencing physical injuries including 8 per cent who had eye injuries, sprains, dislocations or burns and 5 per cent who had deep wounds, broken bones, broken teeth or any other serious injury. Three per cent experienced severe burns.

To know the impact of domestic violence let us undertake some case studies :

Case-Studies

Poonam

She is educated. Works in a hospital as a doctor's assistant. Gets a decent salary. She has her own flat in an expensive city like Mumbai. She has two lovely children, a boy and a girl.. She is a divorcee. She feels that life without husband is meaningless. There has to be a man in every woman's life. He may be in the form of a father, husband or brother. But there has to be a man. Without man, life is incomplete.

Let us go into her background. She had a dominating mother. Developed submissive nature. Had late marriage. The husband was trouble-some. He and his father were interested in her money. The husband seems to have had some psychological problems. Sometimes he used to slap her. Once he had locked her inside the house. Somebody came from outside and opened the door. Once he forged her signature on her cheque. She tried to pull on in her marriage. Once he came and told her that he slept with a woman who was HIV positive. Her mother and sister were supportive to her. They told her to separate from her useless husband. She did not want to separate. After sometime she separated and

went back to him. Again same story. She bought a flat. He registered it in his father's name. There was some problem. So he registered it in his name. There were some more problems. He told her to register it in her name. Thank god! She could get her flat which she bought with her hard-earned money. At the end, she took divorce from him. Is it worth to live with such a useless and cruel husband?

This lady feels tragic. In fact she is imposing mental violence on herself. This is the impact domestic violence (in the past) on her mind and body. She could come out of this violent marriage due to her sister's and mother's support but continues to wallow in self-pity and imagined helplessness. She also develops psychosomatic illnesses.

Sharmishta

This lady is a teacher. Well-educated and efficient. At work-place very popular. Students are fond of her. Her ex-students fondly remember her. She has two children. She is very happy at the work-place.

At home, it is the opposite. Her husband is humiliating her. Always suspicious. Sometimes beats her up. When she had bought the flat and went for registration, he slapped her. When the children were small, she separated from him and lived for 8 months away from him. He begged her to come back. He was normal for a week and then started abusing her again. It continues. Since 20 years, she has been living like this. Once she complained to the police and put him behind the bars for a night. For three days, he was alright. Later he became his old self. He is manipulative. To outsiders he is an angel. To his wife, he is a devil. He has been bribing his children and turning them against his wife. The son threatened her that he would commit suicide if she separated from his father. Because of father's bad influence, the children too ignore her. They think it is alright for their father to mistreat their mother. Recently the son and daughter too started abusing and mistreating her like her husband.

The son looks like her husband and the daughter looks like her. Yet due to suspicion, he got the DNA test doneforthechildren. When she came to know this, she was hurt and from that time she stopped having physical relation with him. Because of this hellish atmosphere in the house and husband's cruelty, she has developed blood pressure (BP), migraine, shoulder-pain, skin-problems etc. Why does she not leave him for ever? Why does she continue to live in this abusive and worthless relationship? As long as she is in front of him, he will be mistreating him. She thinks that somebody should scold and threaten him to behave well with her and not use children as tools to emotionally blackmail her. Due to domestic violence she has developed low self-esteem and lack of confidence. She feels helpless to take action against her husband. She is suffering and would continue to suffer. In that process, she may even risk her life

She is unable to gather enough courage to throw the husband and son out of her house because

she thinks that they would malign her name in the society and blackmail her emotionally . She expects others to solve her problem rather than she herself solving it.. This is the impact of domestic violence on her body and mind.

It is very important to provide help to these women. So NFHS-4 studied the help-seeking behavior of the women victims.

Help-seeking behavior

Women have a right to seek redressal against the problem of domestic violence against them. In fact India has some of the best laws in the world in favour of women to prevent and punish the perpetrators of violence against them even though their implementation is poor.

Percent distribution of women age 15-49 who have experienced physical or sexual violence by the varibale whether they have told anyone about the violence and whether they ever sought help from any source to end the violence, by religion for India, 2015-16 is given in the following table.

Table 7 : Help seeking to stop violence, by religion, India, NFHS-4, 2015-16

Religion	(%) Never told anyone	(%) Told someone	(%) Sought help from any source	Total	Number of women
Hindu	76.9	8.9	14.2	100.0	20212
Muslim	78.1	8.6	13.3	100.0	2931
Christian	63.8	17.2	19.0	100.0	617
Sikh	71.0	10.8	18.2	100.0	244
Buddhist/NeoBud.	74.0	17.3	8.7	100.0	142
Other	68.6	15.7	15.7	100.0	113
Total	76.6	9.1	14.3	100.0	24273

Source : NFHS-4 India Report p.597

Of all women in India who ever experienced any type of physical or sexual violence, only 14 per cent ever sought any help to fight against the violence they experienced.

The religious differentials in help-seeking behavior of victims are as follows :

The percentage of victims who never told anyone about their suffering is the highest among the Muslim women (78.1). They are followed by Hindu, Buddhist, Sikh and Christian women. For all these women the percentages are very high (above 60). This indicates the prevalence of a 'culture of silence' which is dangerous for the victims.

The percentage of women who told someone about violence against them is as follows – Buddhist (17.3), Christian (17.2), Sikh (10.8), Hindu (8.9) and Muslim (8.6).

What is the percentage of women who sought help from any source? The highest percentage

of the Christian women (19.0) followed by Sikh (18.2), Hindu (14.2) and Muslim (13.3) women sought the help to liberate themselves from the spousal violence. In general, we find that Muslim women are the most backward in seeking help.

It is ironic to find that neither the education nor wealth seem to motivate the women to seek help. On the contrary, it is observed that the most educated women or women in the highest wealth quantile are less likely to seek help than less educated or less wealthy women.

Sources of help

Most of the victims sought help from their own families (65%), , husbands' families (29%), friends (15%) and neighbours (10.6%). Very few women sought help from institutional sources such as police (3%), religious leaders (2%), medical personnel (1.3%) or NGOs (1.2%).

Why do women put up with so much violence? There are a number of reasons – lack of education, not having a house, no support from parents and friends, fear of society, fear of religion etc. The data from the NFHS-4 reveal more educated and more wealthy women are less likely to seek liberation from the domestic violence. In our view, it is the deep rooted patriarchy in our society which enables men to perpetrate violence against their wives and compels the wives to continue with violent marriages. So if we want to attack domestic violence, we need to attack the deep-rooted patriarchal values.

Recommendations

1. Socialization of women should be such that they should become strong individuals to fight against the patriarchal values and the resultant domestic violence.. They should be taught that a woman, if necessary, can live a happy, prosperous, peaceful and dignified life without a man. They should also be socialized in such a way that marriage and children are only one part of life even though important. However dignity of women is far more important and when the marriage fails, husband and children are abusive, they should come out of such relationships and start living dignified lives. If no option, women can live fulfilling lives even without husbands and children. There is so much to be done in life. This is the most important principle to be taught to the women and also to the men. They should also be taught that it is the individuals who make the society and not the other way.

2. All policies concerning women should aim at inculcating positive psychology among women, their parents and family members.

Conclusion

We conclude that above all, we need to socialize women as strong individuals who can take their own decisions and stick to them. Also the socialization process should be such that the women seek approval for their behaviour from themselves rather than seeking approval from others because our own standard cannot falter where as standards set by others may falter.

Thus to reduce domestic violence we need to empower the women physically, economically and emotionally. We need to respect our women. Unless there is a change in the attitude of society in general and family members in particular towards women, there won't be much change in the incidence of domestic violence against women.

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