

Seminar / Conference / Workshops / Training attended:

1. Dr. Ajith Prasad, Finance Officer, JSS and Dr. Jyoti S. Hallad, Director attended a meeting on Review of PRCs organized by DG and DDG, MoHFW, New Delhi on 19.08.2021.
2. Prof. Jyoti S. Hallad attended the Technical Advisory Committee meeting (TAC) of NFHS-6 organized by MoHFW, GoI, New Delhi on 08.09.2021 and 30.09.2021.
3. Javeed A. Golandaj, Research Investigator, attended an online workshop on "Introduction of Human Mortality Database" conducted by IIPS, Mumbai in collaboration with Max Plank Institute for Demographic Research, Germany through virtual mode, on 09.09.2021.
4. Basavaraj Pundappanavar and Javeed A. Golandaj, Research Investigators attended National Briefing Workshop of the 14th Common Review Mission (CRM) of National Health Mission (NHM), held on 10th November, 2021 at New Delhi. Both the officials involved as CRM team members in the CRM of NHM for the States of Haryana and Sikkim respectively, during 11th to 18th November, 2021.
5. A special lecture was organized to create awareness among adolescents on ill effects of Tobacco consumption by District Tobacco Control Programme Officer under Dr. D. Veerendra Heggade Chair for Health & Demography on 25.11.2021.
6. Dr. Shriprasad H, Associate Professor presented a paper on 'Child mortality Reporting in Health Management Information System (HMIS) evidences and Concerns' on 26.11.2021 in the Golden Jubilee Conference of IASP on Population and Development in India.
7. Prof. Jyoti S. Hallad presented a paper on Monitoring of Programme Implementation Plan (PIP) under National Health Mission (NHM) by Population Research Centres (PRCs) from 2012-13 to 2021-22 under the PRC session of Golden Jubilee conference of Indian Association for the Study of Population (IASP) on 27.11.2021.

Publications:

1. Hallad J.S., Ram U., Bhat B., Kalita D., Sivanandan V., Kumar D., Pradhan M.R. and Study Collaborators (2021) "Utilization of Maternal Health Care Services by Mothers during the First Wave of COVID-19 Pandemic", Working Paper No. 24, International Institute for Population Sciences, Mumbai.

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RESEARCH ARTICLES

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- ❖ *Domestic Violence Against Women – A Study from Sundarbans Region of West Bengal* 14
Anamika Das and C M Lakshmana
- ❖ *Perception of Gender Role Attitudes among Adolescent Boys in Chandigarh, India* 34
Simran Kaur Dhatt
- ❖ *Trends in Delivery of Family Planning Services During Covid-19 Pandemic in Selected States of India* 55
Suresh Sharma and Anshita Sharma
- ❖ *Declining Child Sex Ratio of India: A Matter of Concern!* 72
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Prevalence of Consanguineous Marriages and its Determinants in Tamil Nadu: An Analysis of NFHS-4 Data

Audinarayana¹

Abstract

Marrying close blood relatives (consanguineous marriages) is a long held practice in southern states of India, more particularly in Tamil Nadu. Such practice is almost usually treated as a taboo in north Indian kinship system, though there are examples in the ages of Mahabharatha. But several studies conducted around the World and in India have established that consanguineous marriages to a large extent result into adverse reproductive outcomes such as spontaneous abortions, miscarriages and still births and even under 5 & under 18 mortality rates, besides genetic abnormalities. In spite these risks, still in southern states of India (except in Kerala) these types of marriages are used to be celebrated to a sizeable extent. Keeping this scenario in mind, in this paper, the researcher has made an attempt to examine the prevalence of consanguineous marriages in Tamil Nadu state and what are the major factors that are likely to influence (or determinants) such marriages. To fulfil these objectives, data is drawn from the National Family Health Survey-4 (2015-16) for Tamil Nadu state. The sample consists of 22,614 currently married women and living with (present) husband. Overall, about 32.8 per cent of the marriages reported to be consanguineous type (marrying with close blood relatives). Cross-tabular analysis results showed that the prevalence of consanguineous marriages noted to be conspicuously decreasing with calendar year of marriage (from 1990 to 2015), and also with an increase in their educational level and wealth index of the households. On the other hand, such marriages are noted as lower among those who are residing in urban areas, have faith in Islam religion followed by the Christianity and also among those who belonged to Scheduled Castes / Tribes than their respective counterparts. Logistic regression analysis reiterated that the likelihood of consanguineous marriages is pertinently lower among those who got married during 1996-2005 and 2006-2015 ($p < 0.001$ for both), residing in urban areas ($p < 0.001$), belonged to the Christianity ($p < 0.001$) and non-SC/ST communities ($p < 0.001$)

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than their respective counterparts. On the other hand, while women who have studied up to higher secondary school & above level have exhibited lesser odds of marrying close blood relatives ($p < 0.01$), women who have completed secondary school education have showed a positive likelihood of consanguineous marriages ($p < 0.10$) as against to those who are illiterates. Probable causes / reasons for such marriages and policy recommendations are presented in a crisp manner.

Keywords: Consanguineous Marriages, NFHS-4, Tamil Nadu, Logistic Regression, Determinants.

Introduction

In south Indian states, marrying blood (close) relatives, which is popularly known as consanguineous marriage (or consanguinity), is used to be a long time socio-cultural practice. Tamil Nadu is pioneering in adhering to such practice than other states of south India, which the people believe a Dravidian preferential marriage pattern. Among such marriages, the most preferred ones are between uncle-niece (marrying mostly younger brother of mother) and cross-cousin marriages (either on mother's side or father's side) depending upon their availability of groom at the time of marriage to the brides. But such practices are almost treated as a taboo in the north Indian kinship system, though there are examples in the ages of *Mahabharatha* (Audinarayana, 1990).

Several studies carried out by health care providers, Genetic Specialists and Population Scientists argued and empirically supported that such marriages would result increased genetic disorders to the offspring, besides adverse reproductive outcomes such as spontaneous abortions, miscarriages and still births and even under 5 and 18 mortality rates (for details see Bittles et al., 2001; Hamamy, 2012; Kuntla et al., 2013; Fareed et al., 2017; Prakasam, 2018a). In spite of these consequences, consanguineous marriages are preferred among people mainly due to socio-cultural reasons such as obligation to marry such mates, besides the influence / persuasion by parents / relatives. Other reasons include couples' stability in marriage due to higher compatibility between husband and wife who share the same social relationships after marriage as before marriage as well as the compatibility between the couple and other family members. It is also argued in consanguineous marriages,

wife (newly married bride) will have better relationship with her in-laws due to higher women's status / autonomy, besides daughter-in-law will have better relationship with her in-laws and thereby, they would support her in time of need. There is a general belief that marrying within the family reduces the possibilities of hidden uncertainties in health and financial issues and strengthens family ties and enforces family solidarity, in addition preferring to keep the property within the family by wealthy landlords. Further, premarital negotiations regarding financial matters of marriage are more easily taken care as both the families know well about their economic status (prior to marriage) and in fact, at times the cost will be minimized / much less. Moreover, wife's parents prefer to have their daughter living nearer to them and also to enjoy the presence of their grandchildren (Audinarayana, 1990; Bittles, 2001; Hamamy, 2012).

Earlier Research on Magnitude of Consanguineous Marriages and its Correlates

Few localised micro-level studies conducted in Tamil Nadu have come out with the conclusion that consanguineous marriages are most preferred ones and the magnitude of such marriages range somewhere between 25–50 per cent (Rao and Inbaraj, 1977; Rao, 1983; Richard, 1995; Prakasam, 2018b). The analysis of NFHS-1 data for Tamil Nadu by Krishnamoorthy and Audinarayana (2001) highlighted that about 46.5 per cent of marriages of the currently married women (aged 15-49) are consanguineous type. Another large-scale study, the India Human Development Survey (IHDS), 2004-2005 also showed that the magnitude of consanguineous marriages among the women aged 15-49 in Tamil Nadu is 38 per cent (Kuntla et al., 2013).

Some of the studies have tried to examine the associations or correlations between selected background factors and the prevalence / magnitude of consanguineous marriages. The study by Rao and Inbaraj (1977) and Rao (1983) in Tamil Nadu and Audinarayana in Andhra Pradesh (2000) have found that there is a high incidence of consanguineous marriages among the Scheduled Castes (who are said to be lower in their socio-economic status) and also to some extent among the Most Backward and Backward Castes than those who belonged to Forward Castes (socio-economically better off). Audinarayana and Krishnamoorthy's (2000) analysis of NFHS-1 data for four south Indian states revealed that the magnitude of

consanguineous marriages appeared to be decreasing with an increase in their year of marriage and level of education. On the other hand, such magnitude is noted to be higher among those who are residing in rural areas as against in urban areas, belonged to Scheduled Castes / Tribes (SC/STs) followed by non-SC/ST Hindus as against Muslims and the lowest prevalence is found among the non-SC/ST Christians. The analysis of all India IHDS, 2004-05 data by Kuntla et al. (2013) highlighted that the occurrence of consanguineous marriages is higher among Muslims as against the Hindus and other religious groups like Sikhs, Jains, etc. Likewise, such marriages are observed to be higher among those who belonged to Other Backward Castes and Scheduled Castes than those belonged to Scheduled Tribes and other communities. Contrary to the expectation, such prevalence is noted to be higher among those who are relatively younger in age (25-34 years) as against to those who are in the age group of 35 years & above, and also among those who are residing in urban areas as against those dwelling in rural areas. On the other hand, the analysis also indicates that a larger proportion of less educated women and belonging to households of poor and middle economic status got married to their blood relatives compared to women with higher education and belonging to rich economic status households. The analysis of NFHS-4 data for Karnataka by Prakasam (2018a) illustrated that the prevalence of consanguinity appears to be decreasing with an increase in women's education and wealth index of the households. On the other hand, such marriages tend to be higher among those who are living in rural areas as against in urban areas and also among those who are adhering to Hindu religion in comparison to those who have faith in other religions including Islam and Christianity. However, the magnitude of consanguineous marriages didn't vary much across the current age of women and caste background. Similarly, Prakasam's (2018b) micro-level study in Tamil Nadu showed that the magnitude of consanguinity has significantly decreased with an increase in women's educational level, whereas such marriages are noted as higher among those living in rural areas as against to those residing in urban areas. But in this study too, the extent of consanguinity didn't vary much across the current age of women and also across their religious beliefs. Taking into the stock of these earlier researches, the researcher planned this paper with the following objectives.

Objectives:

1. To study the magnitude and patterns (type) of consanguineous marriages of the currently married women in Tamil Nadu,
2. To comprehend the differentials, if any, exists in the magnitude of consanguineous marriages of the currently married women across their selected background characteristics in Tamil Nadu, and
3. To identify the principal determinants of consanguineous marriages of the currently married women in Tamil Nadu.

Data and Methods

Data for this study is drawn from the National Family Health Survey, 4 (NFHS-4), Tamil Nadu State, which was carried out during 2014-15 (IIPS and ICF, 2017). In this survey, 28,820 women aged 15-49 have been interviewed from 26,033 sample households. From this data set, information about 'whether the woman is related to current husband prior to marriage' and 'if yes, type of relationship' is considered for analysis in this paper. In response to these questions, in all about, 22,614 currently women provided information. Data related to these women only analysed here excluding the missing cases for some variables (details are provided in the Tables).

Description of the Variables

Dependent Variable: The dependent variable considered here is 'whether woman married a blood relative or not'; in other words whether the woman's marriage is 'consanguineous type or not'. As stated earlier, out of the 22,614 sample women who provided information about the type relative they got married. These include close relatives such as 'First Cousin on Father's side', 'First Cousin from Mother's side', 'Second Cousin', 'Uncle', 'Other Blood relative', 'Brother-in-law' and 'Other non-Blood Relative'. Of these, in this paper, the data related to those marriages with first five types of relatives (7424 cases) are treated as 'consanguineous marriages'. Thus, those marriages with last two types of relatives (216 cases) have been merged with non-consanguineous marriages as their exact nature of relationship is not clearly known (for details see Table 1).

Independent Variables: The independent (explanatory) variables taken into consideration here are place of residence, year of marriage, religion, caste / community background,

educational level of women and wealth index of the households. The details of these variables are mostly self explanatory, except in the case of wealth index of the households (see table 2). In all the four rounds of NFHS, it is the usual practice to compute the wealth index of the households in which the respondents are residing at the time of survey. In NFHS-4, *wealth index of households* has been computed based on 33 household assets and housing characteristics. For this purpose, each household asset is assigned a weight (factor score) generated through principal components analysis, and the resulting asset scores are standardized in relation to a normal distribution with a mean of zero and standard deviation of one. Each household is then assigned a score for each asset, and all these individual scores are summed for each household, and then the sample women are individually ranked according to the score of the household in which they reside. The sample women is then divided into quintiles i.e., five groups with an equal number of individuals (20 percent) in each at national level, though this is not necessarily true at the state level. For the present analysis, this variable is slightly modified into three categories, viz., merging the 1st & 2nd quintiles as 'Poor' (i.e., Poorest and Poorer as per NFHS-4), 3rd quintile as 'Middle' and combining 4th & 5th quintiles as 'Rich' (i.e., Richer and Richest as per NFHS-4).

With regard to the analysis of data, firstly, the background characteristics as well as the prevalence / patterns of consanguineous marriages are computed through frequency tables. The associations between the selected background characteristics and 'consanguineous marriages or not' are examined making use of the cross-tabular analysis with Chi-square test of significance. Finally, the binary logistic regression analysis is adopted to identify the principal factors that are likely to determine / influence the tendency to marry (close) blood relatives (consanguineous marriages). IBM SPSS software (Version 20.0) is employed to carry out all these analyses.

Results

Prevalence and Patterns of Consanguineous Marriages

As stated earlier, for the present paper, women who got married close blood relatives only are treated as 'consanguineous marriages'. Among the total sample women of Tamil Nadu, slightly less than one-third of them (32.8%) reported to be married as consanguineous type (panel 1 of Table 1). Of those who entered into consanguineous marriages (panel 2), the share of marriages with 'first cousin from mother's side' is relatively higher (41%) closely

followed by 'first cousin on father's side (33%). Marrying uncle (mother's brother, most preferred one in Tamil Nadu) constitute about 11 per cent followed by other blood relatives (9%) and second cousin. Compared to the figures of NFHS-1 (1992-93) of Tamil Nadu (Krishnamoorthy and Audinarayana, 2001), there is a substantial decline in overall percentage of consanguineous marriages in 2014-15 (NFHS-4), i.e. from 46.5% to 32.8% (-41.8%). Another notable point here is that while the percentage of marriages with first cousin on father's side is higher in NFHS-1 (29.5%), such place goes to marriages with first cousin on mother's side in NFHS-4 (40.7%), were as the second place is reversed in these regard between NFHS-1 and NFHS-4 (24.2% for first cousin from mother's side as against 32.8% for first cousin from father's side). On the other hand, in the case of other three types of consanguineous marriages, the figures are relatively higher in the NFHS-1 (17.6, 15.7 and 13.4%, respectively for 'other blood relatives', uncle and second cousin). However, it is conspicuous to note that while, the percentage of those married 'other blood relatives' is higher as against the other two types of marriages in NFHS-1, the percentage of those married uncle is higher in NFHS-4 as against the other two type of consanguineous marriages under consideration.

Table 1: Prevalence / Patterns of Consanguineous Marriages in Tamil Nadu

Prevalence / Type of Consanguineous Marriages	Per Cent	Frequency
Prevalence of Consanguineous Marriages		
No	67.2	15190
Yes	32.8	7424
Total	100.0	22614
Type of Consanguineous Marriage		
First Cousin on Father's Side	32.8	2436
First Cousin on Mother's Side	40.7	3023
Second Cousin	6.4	473
Uncle	11.0	817
Other Blood Relatives	9.1	675
Total	100.0	7424

Background Characteristics of the Sample Women

Among the sample women of Tamil Nadu (columns 2-3, Table 2), around 56 per cent of them are residing in rural areas and the remaining of them (44%) living in urban areas. A simple

majority of them got married in the calendar years of 1995 or before (36%), whereas about 31.5 and 33 per cent got married during 1996–2005 and 2006–2015, respectively. An overwhelming percentage of sample women are Hindus (90%) and just about 5 per cent each of them are adhering to Islam and Christianity, respectively. A little over 30 per cent of the sample women in Tamil Nadu belonged to Scheduled Castes / Tribes (SC/STs) and the remaining are from non-SC/ST communities (i.e., Most Backward, Backward and Forward Castes / Communities). Around 21 per cent of sample women have no education (Illiterates), whereas more than half of them (52%) have completed secondary school education (6-10 standards). Conversely, 14 and 13 per cent of them, respectively have reported to be studied up to primary school level (1-5 standards) and higher secondary school and above (11th standard & above). While a little over half of them (51%) observed to be living in households that are categorised as ‘Rich’ in terms of wealth index, 19 per cent and 30 per cent of them, respectively belonged to households that are categorised as ‘Poor’ and ‘Middle’ on the basis wealth index.

Differentials in the Magnitude of Consanguineous Marriages across Selected Background Characteristics

Information provided in Table 2 (columns 4-8), by and large, shows that the magnitude / prevalence of consanguineous marriages vary conspicuously across the selected background characteristics of the respondents. For example, from panel 1, it can be seen that the percentage of respondents who married their blood relatives (consanguineous type) is noted as higher among those who are residing in rural areas as against their urban counterparts (36% vs. 29%). It is conspicuous to note that (panel 2) the magnitude of consanguineous marriages appears to be consistently decreasing with calendar year of marriage (from 36.7% in 1995 or before to 31.9 in 1996-2005 and then to 29.2% in 2015). From panels 3 and 4, it is evident that while the percentage of consanguineous marriages reported as fairly higher among those who belonged to Hindu religion (34%) as against to those who are adhering to Islam and Christianity religious faiths (29% and 21%, respectively), such magnitude is higher among those who are from SC / ST communities as against those belonged to non-SC/ST communities (37% vs. 31%). Another noteworthy result here is that (panel 5) the prevalence of marrying blood relatives has decreased with an increase in their educational level (from

36.7% for no education to 25% for those who completed higher education). Likewise, there seems to be (panel 6) a consistent decrease in the prevalence of marriages with an increase in wealth index of the households (from 36.0% for those who belonged to households of 'poor' wealth quintile to 31% for those who belonged to households of 'rich' wealth quintile). Further, it is striking to note that the Chi-square test results in all these regard have been turned out as highly significant ($p < 0.001$).

Table 2: Percentage Distribution of Background Characteristics of Women and Consanguineous & Non-Consanguineous Marriages by Selected Background Characteristics, Tamil Nadu

Selected Background Characteristics of Women	%	N	Consanguineous Marriages		Non-Consanguineous Marriages		χ^2 - Value; Sig. Level
			%	Fre.	%	Fre.	
Place of Residence							
Rural	55.7	12602	36.0	4531	64.0	8071	126.085; 0.001
Urban	44.3	10012	28.9	2893	71.1	7119	
Year of Marriage							
1995 or before	35.8	7938	36.7	2912	63.3	5026	98.540; 0.001
1996 – 2005	31.5	6994	31.9	2232	68.1	6994	
2006 – 2015	32.7	7250	29.2	2120	70.8	7250	
Religion							
Hindu	90.3	20240	33.7	6881	66.3	13559	83.323; 0.001
Muslim	4.9	1103	29.0	320	71.0	1103	
Christian	4.8	1062	20.8	221	79.2	1062	
Caste							
SC / ST	69.3	6931	36.6	2535	63.4	4396	62.888; 0.001
Non-SC/ST	30.7	15619	31.2	4873	68.8	10746	
Educational Level							
No Education	20.6	4648	36.7	1706	63.3	2942	110.978; 0.001
Primary	14.2	3222	33.4	1075	66.6	2147	
Secondary	52.0	11754	33.1	3889	66.9	7865	
Higher	13.2	2990	25.2	754	74.8	2236	
Wealth Index of Households							
Poor	18.9	4282	36.0	1541	64.0	2741	126.085; 0.001
Middle	30.1	6881	34.6	2355	65.4	4456	
Rich	51.0	11521	30.6	3528	69.4	7993	
Total	100.0	22614	32.8	7424	67.2	15190	

Note: 432, 9 and 64 cases are missing for Year of Marriage, Religion and Caste, respectively. %s & Frequencies for those who got married consanguineous and non-consanguineous types are computed horizontally for each category of the Background Characteristics of Women.

Results Based on Logistic Regression Analysis

Binary logistic regression analysis (Table 3) reiterated that, controlling for the other background characteristics under consideration, the likelihood of consanguineous marriages is conspicuously lower among those who are residing in urban areas as against to those living in urban areas (OR=0.775; $p<0.001$), who got married during 1996-2005 and 2006-2015 as against to those who got married 1996 and earlier (OR=0.810 and 0.719; $p<0.001$ and $p<0.001$, respectively), who belonged to Christianity as against to those adhering to Hindu religion (OR=0.583; $p<0.001$) and non-SC/ST communities compared to those from SC/ST communities (OR=0.839; $p<0.001$). Likewise, while the tendency to enter into marriage with close relatives is appeared to be significantly lower among those who studied up to higher secondary school & above as against those who have no formal education (OR=0.855; $p<0.01$), such inclination is noted as little higher among those who have completed secondary school education; however, the t-test results in this regard have turned out as significant to a lesser extent (OR=1.081; $p<0.10$). On the other hand, as expected the odds ratios of marrying close relatives are observed as lower among those who belonged to households of ‘middle’ and ‘rich’ wealth quintiles as against to those who belonged to households of ‘poor’ wealth quintile, but the t-test results in these regard didn’t turn out as statistically significant.

Table 3: Results of Binary Logistic Regression Analysis on the Extent of Consanguineous Marriages in Tamil Nadu

Explanatory Variables	Beta Coeff.	Exp (B)	Level of Sig.
Place of Residence (<i>Ref: Rural</i>)	--	1.000	--
Urban	-0.255	0.775	0.000
Year of marriage (<i>Ref: 1995 or before</i>)	--	1.000	--
1996 – 2005	-0.210	0.810	0.000
2006 – 2015	-0.329	0.719	0.000
Religion (<i>Ref: Hindu</i>)	--	1.000	--
Muslim	-0.042	0.959	0.561
Christian	-0.540	0.583	0.000
Caste (<i>Ref: SC / ST</i>)	--	1.000	--
Non-SC / ST	-0.175	0.839	0.000
Education of Women (<i>Ref: No Education</i>)	--	1.000	--
Primary	-0.051	0.950	0.308
Secondary	0.078	1.081	0.10
Higher	-0.157	0.855	0.01

Wealth Index of Households (Ref: Poor)	--	1.000	--
Middle	-0.015	0.985	0.719
Rich	-0.036	0.964	0.411
-2 Log Likelihood	27632.138		
Chi-square Value, (d.f.)	341.068, (11)		
p-value, N	0.000, 22112		

Conclusions and Discussion

The NFHS-4 (2014-15) data for Tamil Nadu state (south India) reported marrying close blood relatives (consanguineous marriages) accounted for about one-third of the all marriages among sample women, though there is some evidence that such magnitude has declined to a moderate extent in comparison to NFHS-1 (1992-93). Several studies cited under the section on 'earlier research' have corroborated that the prevalence of consanguineous marriages is much higher in Tamil Nadu at various time periods as compared to other States of India. Further, taking the year of marriage (instead of current age) into consideration, Audinarayana and Krishnamoorthy (2000) and Krishnamoorthy and Audinarayana (2001) have conclusively proved that the incidence of consanguinity in Tamil Nadu has declined over a period of time. Such finding also holds good with NFHS-4 data for Tamil Nadu as noted here. There is also a clear support for the contention that 'women have lesser tendency to marry close blood relatives with an increase in their level of education' from both localized and large-scale studies mentioned earlier. The findings of this study also suggest that women belonged to SC/ST communities and residing in rural areas are getting married close blood relatives to a higher extent than their counterparts. These findings are also corroborating with several studies carried out in Tamil Nadu as well as in India. The present study highlighted that the magnitude of consanguineous marriages is higher among the Hindus as compared to the Muslims and the Christians. While many studies supported this finding, the analysis of IHDS, 2014-15 data for all India (Kuntla et al., 2013) as well as a micro-level study in Tamil Nadu (Prakasam, 2018b) refuted it by showing higher incidence of consanguineous marriages among the Muslims than among the Hindus. In this study, economic status (wealth index of the households in the present context) tends to lowers the magnitude of consanguineous marriages among women for which there is also some support from the earlier studies carried out by Kuntla et al. (2013) and Prakasam (2018a).

At the policy front, this study emphasizes the need for imparting knowledge about the higher incidence of consanguineous marriages in Tamil Nadu and the adverse effects in terms of genetic as well as health risks associated with such marriages. Such steps may be largely taken up in rural areas and especially among those who belonged to lower socio-economic strata.

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DOMESTIC VIOLENCE AGAINST WOMEN – A STUDY FROM SUNDARBANS REGION OF WEST BENGAL

Anamika Das¹ and C M Lakshmana²

Abstract

This paper reflects the present situation of Domestic Violence against women in West Bengal in general and in Sundarbans region of South 24 Parganas district in particular. The study utilizes primary data; One Hundred Fifty-Five (155) ever-married women (15-49 years) with at least one child (0-14 years) interviewed who had ever experienced domestic violence. The result shows 44.5 percent of women experienced four types of domestic violence i.e., physical, sexual, emotional and economical violence in their married life. The most common forms of physical violence reported by the majority of the respondents are slaps, hitting, kicking, twisting arm, forcibly putting oil into mouth and throwing objects. Moreover, the intensity and incidence of domestic violence varies marginally among the victims, the worst experiences being wives of persons who have alcoholic by nature, jealousy, and extra-marital affairs. The victims of domestic violence were found to be depressed and helpless. Hence, there is an urgent need to strengthen the PWDV Act - 2005 by involving Police, Panchayat members and women organizations to provide counseling and justice on time to the victims of Domestic Violence. Further, they should boost the awareness in preventing and reducing Domestic violence at village level.

Keywords: Domestic Violence, Prevalence, Causes, Sundarbans Region, West Bengal

Introduction

Domestic Violence against Women (DVAW) is considered as universal and a public health issue that occurs in every culture and social group in society. In the early 1970s 'familial violence' began to be perceived as widespread and taking place in the context of a long patriarchal tradition of male power and sexual privilege (Elliot, 1995). Initially, public

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concern focused on the physical abuse of children by their parents and women by their husbands. However, intimate partner violence has moved to the Centre stage. In the year 1994 Cairo Conference, on “Population and Development (ICPD)” recognizes, “*Violence impact on women’s reproductive and sexual health*”. The Fourth United Nations World Conference on Women, 1995 in Beijing stated that, “*Violence against Women (VAW) is a manifestation of the historically unequal power relation between men and women*”; and the 1996 UN World Health Assembly declared, “*Violence against women as an important public health problem*”.

There is an excess of terms that are used for domestic violence, sometimes interchangeably, to describe the same phenomenon¹ (Smith, 1989). Although there is no particular profile of a victim of domestic violence, it is generally seen that the victims are usually women. A study by (Coleman et al., 2007) has revealed that, women are more likely than men to have experienced all types of intimate violence i.e., partner abuse, family abuse, sexual assault and stalking since the age of sixteen. World Health Organization’s (2013) global figures of domestic violence indicate that worldwide about one in every three (35 percent) women have experienced physical and/or sexual violence by intimate partner or non-partner, in their lifetime. Six countries such as, Bangladesh, Bolivia, the Democratic Republic of the Congo, Rwanda, Uganda, and Zambia half or more of married women (50-65 percent) reported that, they have experienced physical and/or sexual violence by their intimate partner and 64 percent of married women in the Democratic Republic of the Congo have experienced physical and/or sexual forms of intimate partner violence (Sara K. Head, 2014).

In India, domestic violence against women forms a large part of all crimes against women. (Vani S Kulkarni et al., 2013) has estimated that, cases of violence against women at home comprise over 43 percent of all crimes against women. In view of the prevalence as well as the pervasiveness of domestic violence, many researchers have attempted to assess the prevalence of spousal violence besides its causes and consequences. A study conducted by the International Clinical Epidemiologists Network (International Clinical Epidemiologists Network, 2000) found that, spousal violence is the major problem of women in India,

¹ A variety of phrases have been used to describe such violence: family violence, domestic disputes, spouse abuse, wife abuse, battered wives, battered women etc.

irrespective of age, education, social class and religion. About 40 per cent women had experienced at least one form of physical violence in their married life. Another study conducted by (Murthy, 2004) found that, numbers of family members, type of marriage and husband's education besides menstrual problems have significant influence on domestic violence. According to the National Family Health Survey (International Institute for Population Sciences, 2015-16) in India almost one-third (31 percent) of ever-married women have ever experienced spousal physical, sexual, or emotional violence by their current husband (for currently married women) or their most recent husband (for formerly married women).

Domestic Violence against Women in West Bengal

The National Crime Records Bureau (NCRB- 2013) statistics revealed that, West Bengal ranked third in crimes against women, followed by Andhra Pradesh, Uttar Pradesh and Rajasthan. The rate of incidence of domestic violence is very high in West Bengal; women in rural areas have more experiencing domestic violence than those in the urban areas. According to the recently released National Crime Record Bureau's 'Crime in India, 2020' annual report, more than 1.1 lakh cases of domestic violence were recorded across the country, with West Bengal recording the highest number at 19,962. It was followed by Uttar Pradesh with 14,454 cases and Rajasthan at 13,765 cases. In West Bengal, district South 24 Parganas has highest i.e., 3504 cases registered under cruelty by husband and relatives, among all crime against women in the district (National Crime Records Bureau, 2014). During the time span of 2005 – 2007, Sundarbans region recorded as highest cases of crime against women. In case of crimes against women, Joynagar I and II block ranks highest, followed by Kultali Block (Development and Planning Department Government of West Bengal, 2009). Hence, the present study examines the prevalence of domestic violence in Sundarbans region of south 24 Parganas district of West Bengal. As Anuradha Kapoor² said that, *“in West Bengal domestic violence is widespread and cuts across class, caste, religion, education and socioeconomic backgrounds. The home that is supposed to be the safest place for women is actually the site where they face immense violence”*.

² Anuradha Kapoor is the Founder and Director of Swayam, West Bengal. A feminist organization committed to advancing women's rights and ending gender inequality and violence against women, established in May 1995.

Objective

This study is undertaken with the aim of meeting the following objective:

To understand the present situation of Domestic Violence against women in the study area.

Data Source

The present study utilized primary data, collected from field survey conducted in six villages of two blocks of South 24 Parganas district of West Bengal with the help of local Non-Governmental Organizations (NGO) namely, Sundarban Janasramajibi Mancha³, Samadhan⁴ and Missing link Trust⁵. The Primary data was collected by using an interview schedule (*refer to see annexure-1*). Mainly, close ended and open-ended questions were asked for the data collection.

Methodology

The Data collection for the study was conducted between the periods of December, 2018 to March 2019. The present study has used purposive sampling technique to select the women who faced domestic violence in their married life. Selection of respondents carried out three stages. In the first stage, two blocks namely Kultali and Joynagar II from South 24 Parganas district has been selected purposively, as large number of incidences of domestic violence has been reported according to the data given by the NCRB. In the second stage, three villages from each block namely, Madhusudanpur, Katamari, and Baikunthapur in Kultali Block; Nalgora, Sonatikri, and Chuprijhara in Joynagar II Block selected purposively, as high

³Sundarbans Janasramajibi Mancha is a civil organization. They have worked with different rights related to the unskilled workers of the Sundarbans area, established the laws of fisheries Act 2006, the right to save lives and foods and to organize social security and social welfare for the peoples of Sundarbans region. And also, they have working to provide awareness and necessary co-operation, as well as to the community with basic rights of non-violence activities such as women and child trafficking, domestic violence against women, prevention of child marriage, and preventing illegal drinking and drinking alcohol in the area. This organization interlace with Missing Link Trust NGO.

⁴Samadhan is a Non-Governmental Organization in South 24 Parganas District. They are functioning for Child Education, Child Welfare, Child Rights, Child trafficking and Women Empowerment.

⁵ Missing Link Trust is the non-profit organization, mainly civic and social organization founded in 2015 by Leena Kejriwal. They are working for anti-trafficking campaign using art and technology to create awareness against sex trafficking. They educate and empower the most vulnerable children, women and girls in the Sundarbans through skill training such as tailoring, computer training and spoken English classes.

incidence of domestic violence is observed by local NGOs. In the third stage, random sampling method has been used for selection of households to collect the data from ever-married women (EMW) who faced domestic violence. Total 155 EMWs interviewed for the present study. The Sample size of each village is as follows: -

Table 1: Showing the Village wise Sample Size

Community Development Block Name	Village name	Sample Size
Kultali	Baikunthapur	23
	Madhusudanpur	26
	Katamari	30
Joynagar II	Nalgora	21
	Sonatikri	30
	Chuprijhara	25
TOTAL		155

Operational Definition of Dependent Variables

Following definitions are referred from the National Family Health Survey Report.

Table 2: Operational definition of different types of Domestic Violence against Women

Violence type	Respondent questions
Physical	a. throwing something, pushing, shaking b. slapping c. twisting arms, pulling hair d. punching or something that could hurt you e. kicking, dragging or beating f. choking and burning g. attacking with a knife or any sharp weapon

Sexual	<ul style="list-style-type: none"> a. trying forcefully sexual relationship with him b. unnatural sex you did not want to c. faced unwanted pregnancy
Emotional	<ul style="list-style-type: none"> a. verbally aggressive or something to humiliate in front of others b. threaten to hurt or harm you or someone close to you or commit suicide c. insult you or make you feel bad about yourself
Economical ⁶	<ul style="list-style-type: none"> a. Denial of access to food b. Denial of access to basic necessities c. Denial of access to financial security

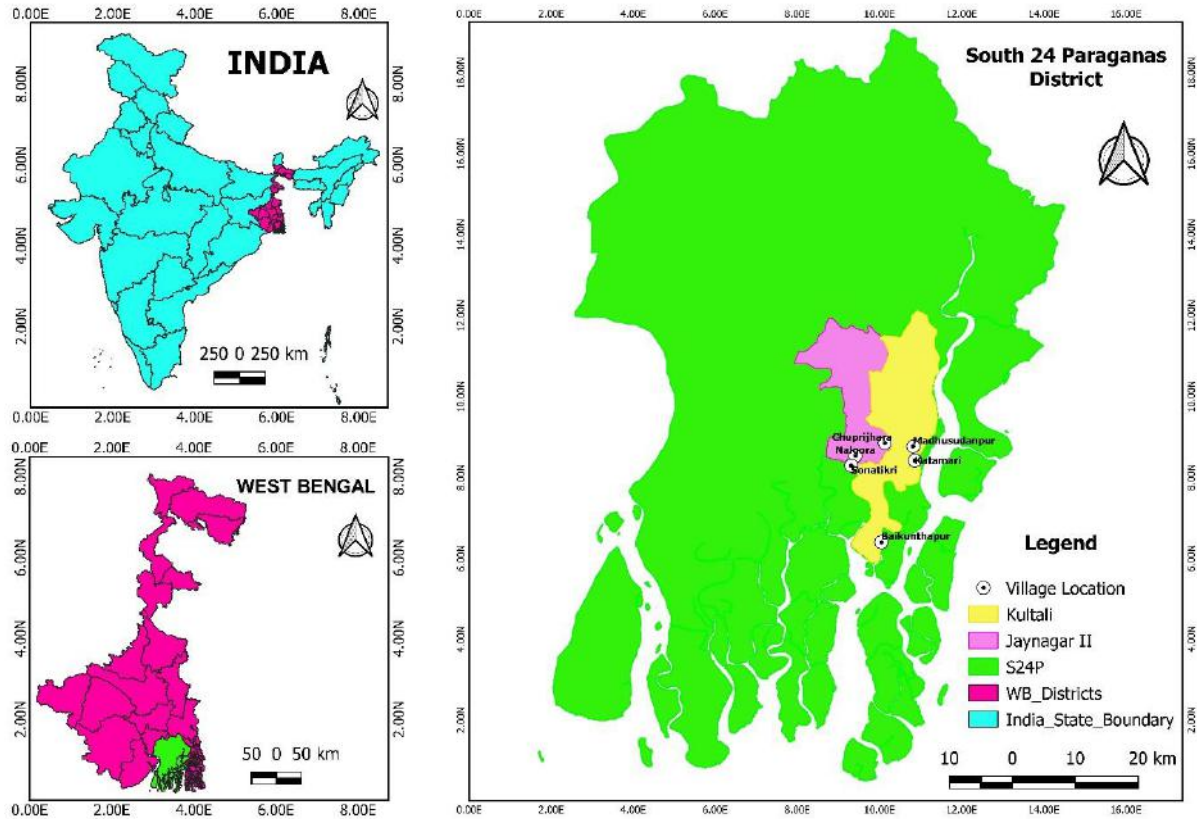
The study area and villages

The district of South 24 Parganas has been selected for the study situated between latitude 21°29'00" N to 22°33'45" N and 88°03'45" E to 89°04'50" N longitude approximately. South Twenty-Four Parganas is the largest district of West Bengal state comprising 29 C.D. Blocks and the second most populous district (8.1 million out of which, 4.1 million male and 3.9 million female populations). The highest Scheduled Caste Population of the State, located at the South-East corner of the State. The Sex Ratio of the District is 956 (No. of females per 1000 males) which is higher than the State's Sex Ratio i.e., 950. The district has a literacy rate of 77.5 percent which is higher than the State average of 76.3 percent (Census of India, West Bengal, 2011). To achieve the goal, six villages (Madhusudanpur, Katamari, Baikunthapur, Nalgora, Sonatikri, and Chuprijhara) from two blocks- namely Kultali and Joynagar II⁷ were selected purposively for the study (Fig: 1).

⁶Economic violence referred from the definition of Protection of Women from Domestic Violence Act (PWDVA, 2005).

⁷Joynagar II and Kultali are two Community Development Blocks among the 13 community development blocks of Sundarbans in South 24 Parganas.

Figure: 1 Location Map of study region of South 24 Parganas District



Source: Author extracted the above map with the help of Geographic Information System (GIS).

Results

The Table-2 shows the socio-demographic characteristics of respondents. Women who have experienced domestic violence after their marriage had the mean age of 27.3 years with the range of 15 years to 49 years. Prevalence was high in the age group of 25-29 years i.e., 45.8 percent, followed by 18.7 percent in the age group of 30-34; 18.2 percent in the age group of 20-24; 10.3 percent respondents in the age group of 35-39 years; 3.9 percent in the age group of 15-19 years and 2.6 percent in the age group of 40-44 years.

Out of 155 women, the majority of women belong to Hindu religion 127 (81.9 percent). In Hindu religion 53.5 percent women came under Scheduled Caste category, followed by 14.3 percent in general; 11.7 percent in Scheduled tribe and 2.6 percent in OBC category. On the other hand, 18.2 percent women are belonging to Muslim religion.

This study shows that, majority of respondents i.e., 27.7 percent are illiterate, followed by 27.1 percent of respondents have been studied up to higher primary level (class 6-8); 24.5 percent respondents have been studied lower primary level (class 1-5); 12.9 percent have been studied till secondary (class 9-10); very few respondents i.e., 7.1 percent have been studied up to higher secondary (class 11-12) and 0.6 percent of respondents have been studied up to graduate level. Thus, a large number of respondents are illiterate.

The finding depicts, majority of respondents are married, in these maximum respondents are home maker. It has followed by 44.8 percent respondents are separated from their matrimonial home due to domestic violence, but they have not got divorce from their husbands. Only 3 respondents, i.e., 1.9 percent of respondents got divorce by their husbands and the average number of children was two, in that majority of respondents had girl child than the boy child. The finding also revealed that, 78.7 percent of 155 respondents got married before 18 years and 65.8 percent among them are in the age of 15-17 years, followed by 12.9 percent in 12-14 years of age. 18.1 percent of respondents got married after the age of 18 years.

Out of 155 respondents, 85.8 percent are living in a joint family and 14.2 percent are living in nuclear families. Thus, a majority of respondents in the study area who are experiencing domestic violence live in a joint family. On the other hand, 80.6 percent of respondents are married through an arranged system and 19.3 percent of respondents are married through love marriage in the present study.

Table: 3 Socio-demographic characteristics of Respondents

Socio-Economic and Demographic Features	Number (%)
Total Number of Respondent	155
Age of respondent	
15-19	6 (3.9)
20-24	29 (18.2)
25-29	71 (45.8)
30-34	29 (18.7)
35-39	16 (10.3)
40-44	4 (2.6)

Mean age of Respondent	27.3 years
Religion and social composition	
Hindu	127 (81.9)
General	22 (14.3)
Scheduled caste (SC)	83 (53.5)
Scheduled tribe (ST)	18 (11.7)
Other backward class (OBC)	4 (2.6)
Muslim	28 (18.2)
Literacy Level of Respondent	
Illiterate	43 (27.7)
Class 1-5	38 (24.5)
Class 6-8	42 (27.1)
Class 9-10	20 (12.9)
Class 11-12	11 (7.1)
Graduate	1 (0.6)
Years of Schooling of Respondent	5.27 years
Marital status of the Respondent	
Divorcee	3 (1.9)
Married	83 (53.5)
Separated	69 (44.8)
Average Number of Children	2
Age at time of marriage	
12-14	20 (12.9)
15-17	102 (65.8)
18-20	26 (16.8)
21-23	2 (1.3)
24-26	5 (3.2)
Types of marriage	
Arrange marriage	125 (80.6)
Love marriage	30 (19.3)
Family Structure	
Joint family	133 (85.8)
Nuclear family	22 (14.2)

Source: Authors Calculation based on primary data.

Prevalence of Domestic violence against women

The present study found that women experienced more than one type of violence. Data shows that, 44.5 percent of women experienced four types (i.e., physical, sexual, emotional and economical violence) of violence in their married life. Almost all respondent said that they have experienced slapping, throwing something, pushing, twisting arms, pulling hair and

kicking, followed by 23.9 percent of respondents experienced choking and burning; 2.9 percent reported attacking with a knife or any sharp weapon. Husband is the main perpetrator of physical violence as reported by about 74.7 percent, followed by 14.9 percent husband and in-laws and 4.5 percent brother-in-law and sister-in-law are perpetrators of physical violence.

The analysis revealed that, almost all respondents i.e., 96.7 percent reported getting verbally aggressive or something to humiliate in front of others and getting angry of jealousy behavior when talking to other men or relatives. About 77.4 percent women reported threatening to leave or to commit suicide. Husband and mother-in-law are the main perpetrators of doing emotional violence i.e., 48.1 percent. It has also been reported that, 77.4 percent reported denial of basic needs; followed by 76.1 percent denial of access to food and 74.1 percent no control over resources and financial security and husband and in-laws are the main perpetrators of economical violence.

About 58.7 percent women are trying forcefully sexual relationship by husband; followed by 24.5 percent reported being hurt for unnatural sex and 11.6 percent faced unwanted pregnancy for sexual violence.

Table: 4 Percentage of respondents experienced types of Domestic Violence

Types of Domestic Violence	No. of respondents (%) (N=155)
One Types of Violence	4 (2.6)
Two Types of Violence	20 (12.9)
Three Types of Violence	62 (40)
Four Types of Violence	69 (44.5)

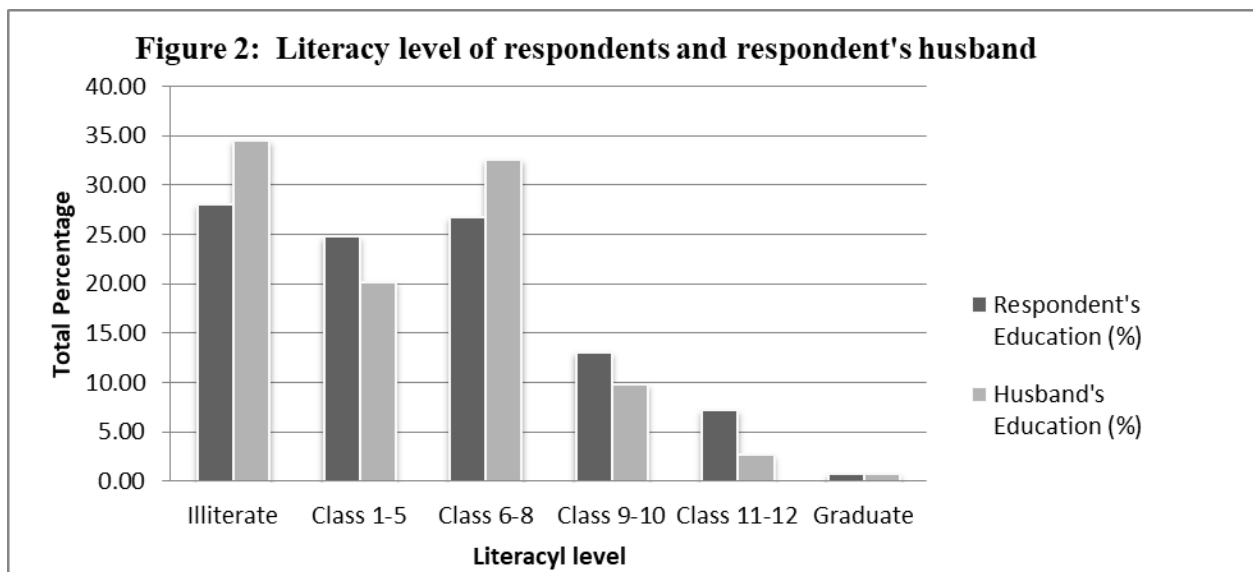
Source: Authors Calculation based on primary data.

Literacy level of respondent and respondents' husband

The figure 2 shows that, majority of respondents i.e., 27.7 per cent are illiterate, followed by 27.1 per cent of respondents have been literate up to higher primary level (class 6-8); 24.5 per cent respondents have been studied lower primary level (class 1-5); 12.9 per cent have been studied till secondary (class 9-10); very few respondents i.e., 7.1 per cent have been studied

up to higher secondary (class 11-12) and 0.6 per cent of respondents have been studied up to graduate level. Thus, a large number of respondents are illiterate.

On the other hand, if we see the husband's literacy level, it shows the similar trends. Maximum number of respondents' husbands are illiterate i.e., 34.4 per cent, followed by 32.5 per cent of respondents' husband have been literate up to higher primary level (class 6-8); 20.1 per cent respondents have been studied lower primary level (class 1-5), 9.7 per cent have been studied till secondary (class 9-10), very few respondents husband i.e., 2.6per cent have been studied up to higher secondary (class 11-12) and 0.6 per cent of respondents husband have been studied up to graduate level. It also seen that; a greater number of respondents have been studied up to secondary and higher secondary level than the husband. While comparing the mean years of education of the respondents and respondents' husbands, the present study found that the mean years of education of respondents is higher i.e., 5.3 years than husbands mean years of education i.e., 4.6 years.



Source: Authors Calculation based on primary data.

Marital status and types of Domestic violence

In the present study we have included marital status to evaluate the problem of domestic violence. In the most of the cases women are not divorced; they are staying with their husband and in-laws. And very few got divorced and staying with their parents at their natal

home. Table: 5 show the majority of married women experienced physical and emotional violence than sexual and economical violence in the study area.

Table 5: Showing Comparison between Marital Status and Domestic Violence against Women

Marital status	Types of Domestic Violence against Women (%) (N=155)			
	Physical violence	Sexual violence	Emotional violence	Economical violence
Married	81 (52.3)	51 (32.9)	77 (49.7)	49 (31.6)
Separated	68 (43.9)	39 (25.2)	67 (43.2)	65 (41.9)
Divorcee	3 (1.9)	1 (0.6)	3 (1.9)	2 (1.3)

Source: Authors Calculation based on primary data.

The above table clearly depicts that domestic violence is more in those are married housewives who are not going out for work and financially dependent on their husbands. Similarly, those who have separated from their husbands, they faced major economic difficulties for taking care of children in daily life. Due to this reason the maximum number of women goes to Kolkata for domestic service. When researchers asked respondents to describe their work, some of the respondents were silent on the kind of work that she was involved in Kolkata. However, Centre coordinator of Missing Link Trust said that, “*In Madhusudanpur village (Kultali Block), majority of women and adolescent girls are going for domestic work to Kolkata and surrounding urban areas. Some of these are working in the red-light area i.e., Sonagachi⁸, Kolkata. This is the forced migration⁹ towards urban areas like Kolkata and any other cities especially due to domestic violence, lack of income and availability of work in their local areas*”. Hence, dependency and economic constriction are found the major causes of domestic violence in the study area.

⁸Sonagachi is Asia's largest red-light area in Kolkata. The narrow, rat-infested lanes of Sonagachi are now home to some 11,000 sex workers (Deepanjan Ghosh, 2018).

⁹A simple term of Forced migration is when people are made to leave their home or homeland due to violence, persecution or any natural hazard.

Age at time of marriage and Domestic Violence

The table: 6 depicts, four types of domestic violence are higher in the before the legal marriageable age group of 15- 17 years. Almost 64.5 per cent of respondents are experienced physical violence, followed by 63.87 per cent of respondents are experienced emotional violence, 50.32 per cent of respondents are experienced economical violence and 41.94 per cent of respondents are experienced sexual violence in the study area. Similarly, this trend is continuous in the age group of 12-14 years. On the other hand, 18-20 years of marriageable age group also experienced four types of domestic violence than the higher age group of respondents those who have married after 20 years. Girls are married before the legal marriageable age and due to underage, they face major adjustment issues in their matrimonial homes and experienced domestic violence. Most of the girls were forced to come back to their natal family; family members of these girls' fear reporting domestic violence to police as their daughters were married before 18 years as they have a notion that police will punish them. However, this finding reveals that domestic violence is more prevalent in early age married women compared to older age married women.

Table 6: Showing Comparison between Age at time of marriage and Types of Domestic Violence against Women

Age at time of marriage	Types of Domestic Violence against Women (%) (N=155)			
	Physical violence	Sexual violence	Emotional violence	Economical violence
12-14	20 (12.9)	13 (8.4)	19 (12.3)	15 (9.7)
15-17	100 (64.5)	65 (41.9)	99 (63.9)	78 (50.3)
18-20	26 (16.8)	12 (7.7)	23 (14.8)	17 (11)
21-23	2 (2)	1 (0.6)	2 (1.3)	2 (1.3)
24-26	4 (2.6)	0.00	4 (2.6)	4 (2.6)

Source: Authors Calculation based on primary data.

Family structure and Domestic Violence

The cross tabulation shows that, in joint family domestic violence (physical, emotional and economical) is reported more than nuclear family in the study area. The main reason of violence in joint families is also because of lack of understanding between the spouses. The data also reveals that, domestic violence is lesser in nuclear families. In nuclear families the interference of mother-in-law and other family members are not very effective. In joint families one of the major problems is that everyone in the family listens only husband words and as a result the husband restricts his wife movements and control her activities. Majority of husbands take side of their mother listen to whatever they say without understanding their wife's viewpoint and react based on what they have been told. As Priya, (name changed) 26 years old, Sonatikri village said that, *“My mother-in-law has sexual relationship with other men in the village. She (mother-in-law) also forced me to do sexual relationship with them so that she will get more money. But I denied to do that, mother-in-law started physical violence on me and whenever my husband came back from Kolkata mother-in-law create a story that, I am not properly cook food, every time I am over phone with somebody, I don't listen to mother-in-law. My husband believed his mother's story and started torturing and arguing with me.”*

Table 7: Showing Comparison between Types of family structure and Domestic Violence against Women

Family Structure	Types of Domestic Violence against Women (%) (N=155)			
	Physical violence	Sexual violence	Emotional violence	Economical violence
Joint Family	130 (83.9)	81 (52.3)	128 (82.6)	100 (64.5)
Nuclear Family	22 (14.2)	10 (6.5)	19 (12.3)	16 (10.3)

Source: Authors Calculation based on primary data.

Types of Marriage and Domestic violence

The table 8 clearly reveals that, respondents with arrange marriage experienced more physical (78.7 per cent), emotional (76.1 per cent) and economical violence (59.4 per cent)

than sexual violence (45.2 per cent). Similarly, those with love marriage, they also experienced physical, emotional, economical and sexual violence. However, percentage of women experienced domestic violence are lesser in love marriage than arrange marriage.

Table 8: Showing Comparison between Types of Marriage and Domestic Violence

Types of Marriage	Types of Domestic Violence against Women (%) (N=155)			
	Physical violence	Sexual violence	Emotional violence	Economical violence
Arrange Marriage	122 (78.7)	70 (45.2)	118 (76.1)	92 (59.4)
Love Marriage	30 (19.4)	21 (13.5)	29 (18.7)	24 (15.5)

Source: Authors Calculation based on primary data.

Causes of Domestic violence against Women

The present study found that lack of understanding (jealousy, doubting, accusing etc.) between in-laws and husband was the major cause of domestic violence against women in the study area.

Table: 9 Showing the causes of Domestic Violence

Causes of Domestic Violence against Women	Responses (%) (N=155)
Household problems (cooking, taking care of children, elders etc.)	79 (51)
Lack of understanding between spouses (jealousy, doubting, accusing etc.)	109 (70.3)
Unsatisfied sexual relation	34 (21.9)
Economic constraints	58 (37.4)
Alcoholism	107 (69)
Disease	3 (1.9)
Extra marital relationship	71 (45.8)
Demand of dowry	106 (68.4)

Source: Authors Calculation based on primary data.

Similarly, 69 per cent respondents reported their husband's alcoholic habits. The women said that when the husband came home drunk, they would either physically hurt or would resort to the use of abusive language. About 68.3 per cent of women reported as for demand of dowry. As Shreya (name changed) 28 years old, Katamari village, Kultali Block said that, *“After a few weeks of marriage my mother-in-law started complaining regarding the dowry and demanding for more. My husband was an alcoholic who use to torture me physically for dowry. My mother-in-law and husband often sent me to my natal home asking me to return only with dowry that they demanded for constructed pond for fishing business and build a toilet in the house. Similarly, 79 Out of 155 women experienced domestic violence due to causes like not properly take care of children and elderly and cooking food etc. and 45.8 per cent women reported that they experienced domestic violence due to reasons like extra marital relationship of husbands. As Riya (name changed) 35 years old woman from Sonatikri village, Joynagar II block said, “I got to know that my husband has an affair with another woman. She is also married and staying near to my house. I decided to talk to my husband but he totally declined in front of me and family members. Due to this, he started beating me slapped, pushed, twisted my arms and kicked on my abdomen.”*

An economic constraint is a common problem of many families in the study area. Inadequate financial resources to meet the day-to-day expenditures are a source of stress and strained family relations. Domestic violence in the family due to economic constraints was also found to exist at 37.4 per cent. As Pallavi (name changed) from Katamari village, Kultali block said, *“The major part of my husband’s income goes into purchase of alcohol and gambling. I have no say in financial matters. His drinking habits the family is going through severe financial crisis.”*

Discussion

While describing the present study we must say, the cases of domestic violence are very important to understand the present situation of the study area. They all are unique, unusual in a number of ways and belongs to different caste, age group, education etc. but all are the victims of domestic violence. The study area is selected purposively in the South 24 Parganas district of West Bengal state. The economic profile of the study area is very poor as the

majority of population live by earning meagre income from agriculture. The female work participation and the per capita income in district are lower than the state. The data on domestic violence have been collected using sixteen questions and have been grouped into 4 categories namely, physical violence (7 questions on any form of physical abuse like pushing, slapping or beating kicking and the like), sexual violence (3 questions on forced sex, unnatural sex, and unwanted pregnancy), emotional violence (3 questions on insulting and humiliating in front of others and threatening) and economic violence (3 questions on denial of food, basic necessities and access to money). The qualitative data are used to substantiate the findings.

Thus, inferences of the study are significant. The domestic violence is high among younger women than the older and is associated negatively with age. It is higher among illiterates and less than primary educated one than those of attended secondary education. About 44.5 percent of the women have experienced three or more types of violence. The most common forms of physical violence reported by the majority of the respondents are slaps, hitting, kicking, twisting arm, forcibly putting oil into mouth and throwing objects. Despite, many women do not seek divorce accepting domestic violence as a part of their family life. They do not have enough knowledge or awareness about their legal rights. For that reason, they suffer domestic violence silently behind closed doors. The major causes of domestic violence are not having trust, feeling jealousy and accusing daughter-in-law, followed by male vices like alcohol as in 69 per cent of the cases and dowry in 68 per cent of the cases. The prevalence of domestic violence against women is also affected by marital status and household structure of the women. Those women who have been not separated from their husband, experienced more violence. Similarly, those women living in joint family, experienced more violence than the women who are residing nuclear family. Moreover, alcohol consumption of the husband has direct effect on domestic violence. Similarly, women belong to other backward class experienced more domestic violence than Scheduled caste and Scheduled tribe women.

In the present study, at the personal level it has been observed that, the intensity and incidence of domestic violence varies marginally among the victims of the different types; the worst experienced being wives of persons who have alcoholic by nature. In fact, one of them had made an attempt at suicide, but did not succeed. Hence, the victims of domestic

violence were found to be depressed and frustrated a lot. Particularly in the poor and marginalized families in these remote villages of Sundarbans, women form the backbone of the families, as they maintain the families in particular. This study also found that, the relationship with the child and husband was kept unaffected by most of the respondents. Still, they are doing all responsibilities of household chores silently. The home environment was affected in most of the cases and victims were increasingly estranged from the other members in the household and also victims were getting deprived of their basic needs. In the majority of cases victims are not allowed to talk with neighbors in the study area. It also noted that, the consequences of domestic violence negatively effects mental and physical health of women as well as the relationship with neighbors, friends and relatives.

Conclusion

“For every reported case there are several unreported ones. —They are just the tip of the iceberg”, - says Anuradha Kapoor, director of Swayam, a woman’s rights organization.

In patriarchal society like India, the phenomenon of domestic violence is rather intimate in nature that takes place within the domestic sphere and considers it as a private affair between spouses, it is impossible to observe such phenomenon directly. Added to this issue, identifying and addressing the victims and perpetrator of domestic violence is also difficult. Due to lack of awareness and culturally constructed notion of shame, the cases of domestic violence are underreported in India. A woman believes that entire responsibility of preserving the family as her duty; hence she makes all adjustments unilaterally in her husband’s home. In spite of the extreme physical and psychological violence meted out of many women, they do not seek divorce, as they feel their trauma and that of their children is too great a price to be paid instead. Thus, to a great extent she accepts domestic violence as part of her family life. Hence, there is an urgent need to strengthen the PWDV Act - 2005 by involving Police, Panchayat members and women organizations to provide counseling and justice on time to the victims of Domestic Violence. Further, they should boost the awareness in preventing and reducing Domestic violence at village level.

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Perception of Gender Role Attitudes among Adolescent Boys in Chandigarh, India

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Abstract

In this qualitative study set in urban India i.e. Chandigarh, an attempt has been made by the researcher to explore perceptions of gender role attitudes among adolescent boys. Semi-structured interviews were conducted among thirty one adolescent boys living in a rehabilitation colony for slum dwellers located in the city. Interview transcripts were coded by the author using predetermined and emergent codes to identify perceptions of adolescent boys relating to gender roles and privileges and restrictions for women/girls and men/boys. Major themes that were identified in the interviews included: (1) division of work; (2) decision making; and (3) parity in education. Results from the study reflected that the majority of the adolescent boys held equitable gender role attitudes. This could be endorsed by the fact that Chandigarh is ranked as one of the best performers in terms of gender equality in India.

Keywords: gender role attitudes, adolescent, boys, Chandigarh.

Introduction

Global Gender Gap Index (2021) ranks India 140th among 156 nations, taking into consideration gender parity in the areas of health, education, economic status and political participation. Women and girls occupy a lower social position in India, due to existing gender stereotypes prevalent in the country (Ministry of Women and Child Development, 2015). Gender based discrimination starts in India at the very birth of a child, where the birth of a son is celebrated; but birth of a girl child is considered to be a liability; which may even lead to female infanticide (Kishor and Gupta, 2009).

Inequitable gender role attitudes are an outcome of harmful perceptions revolving around masculinity (Das et al., 2014). Such harmful notions endorse traditional male role attitudes such as, all decisions should be made by male members of the family; and perpetration of

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violence against women and girls (Heilman et al., 2014).

Perceptions regarding egalitarian and in-egalitarian gender role attitudes are shaped during childhood and adolescence (Achyut et al., 2017). In the view of Thomas (2002) boys are taught stereotypical masculine attitudes which are associated with being, 'physically and emotionally strong, being competitive, dominating and controlling others' (as cited in Jaya et al., 2014). On the contrary, girls are taught to be timid, dutiful and submit to the decisions of their family (Jaya et al., 2014). Inequitable gender role attitudes developed during adolescence have adverse and long term effects on the lives of women and men, girls and boys (Vyas et al., 2020).

Comprehensive studies have been carried out in developed nations to find out perceptions related to gender norms held by young men and adolescent boys, but there exists a paucity of literature in this area in newly industrialized countries such as India (Landry et al., 2020; Yu et al., 2017). An attempt has been made in this study, to contribute to the existing literature on perceptions of gender role attitudes, among adolescent boys in India.

Study aims

The purpose of this study is to explore and understand perceptions relating to gender role attitudes among adolescent boys taking into consideration:

- (1) division of labour ; and
- (2) privileges and restrictions for women/girls and men/boys.

Method

Settings

Chandigarh is a Union Territory and is located in the north-western part of India. The city does not have its own government unlike states located in India; but instead it is governed by the Central Government of India (Mohapatra, 2012). It is capital to the states of Punjab and Haryana (north-western states of India).

NITI Aayog (National Institution for Transforming India, 2018) ranked Chandigarh and Andaman and Nicobar Islands as the best performers in terms of gender equality, amongst all the union territories of India.

The study was conducted in a colony located in the northern part of Chandigarh, in the month of December, 2017. The settlement is essentially one of rehabilitation colonies for slum dwellers; and it is located at the periphery of the city (Chandigarh Administration, 2018; Mohapatra, 2012).

Most of the residents living in the colony are working in the informal and unorganized sector (Chandigarh Administration, 2018). It becomes essential to mention here that being a lower income locality, a lot of women work as maids for minimum wages, in the nearby and more affluent neighbourhoods. Some of them run tea stalls; work in grocery stores; sell fruits and vegetables; and others do tailoring and repair work.

Study design

This research was conducted as a part of the process of designing gender sensitization intervention strategies specifically for adolescents. Qualitative survey research design was employed for the purpose of data collection.

Sampling and participants

Purposeful sampling technique was used in the study. Inclusion criteria were as follows: adolescents, identifying as male and living in the colony mentioned above. A total of 31 adolescent males were interviewed, to adequately reach saturation.

Before the interviews, participants were informed about the purpose of the study. They were also made aware about their rights as voluntary participants and the right to withdraw. Oral consent was taken from parents of participants who were below the age of 18 years.

Table 1: Demographics of the participants

Participant Number	Age	Has female sibling/siblings	Mother as earning member
Participant 1	13	No	Yes
Participant 2	13	Yes	No
Participant 3	13	No	Yes

Participant 4	14	Yes	Yes
Participant 5	14	Yes	No
Participant 6	14	Yes	Yes
Participant 7	14	Yes	Yes
Participant 8	14	No	Yes
Participant 9	14	No	No
Participant 10	15	Yes	No
Participant 11	15	Yes	Yes
Participant 12	15	No	No
Participant 13	15	Yes	No
Participant 14	16	Yes	Yes
Participant 15	16	Yes	Yes
Participant 16	16	Yes	No
Participant 17	16	Yes	Yes
Participant 18	16	Yes	Yes
Participant 19	16	Yes	Yes
Participant 20	16	Yes	No
Participant 21	17	Yes	No
Participant 22	17	Yes	Yes
Participant 23	17	Yes	No
Participant 24	17	Yes	No
Participant 25	18	No	No
Participant 26	18	No	Yes
Participant 27	18	Yes	No
Participant 28	18	No	Yes
Participant 29	18	Yes	No
Participant 30	18	No	Yes
Participant 31	18	Yes	No

Data collection

Data was collected by conducting face to face semi-structured interviews with the participants. Questions included in the interview guide were open ended and allowed scope for flexibility, so that participants could reflect and describe their own perceptions of what gender equality really meant to them. These mainly focused on role expectations from women and men, girls and boys; and the participants' opinions on gender rights, privileges and gender based discrimination. Interview guide was designed with the help of experts in the field.

Participants were interviewed in their homes or nearby locations. Interviews were conducted in Hindi, which lasted for 30 to 60 minutes with each participant. Word by word transcripts were noted down during the interviews, and later translated into English.

Data analysis

The researcher used methods drawn from directed content analysis (Hsieh and Shannon, 2005) to analyse the interviews. Existing theories and relevant research findings were consulted to develop the initial coding scheme. As the process of data analysis proceeded additional codes emerged; and necessary changes were made in the initial coding scheme. These codes were then arranged into categories of emergent themes and sub-themes.

An independent researcher, who had not been involved in the process of data collection and analysis, was requested to review the thematic data analysis. On the basis of suggestions made by the independent researcher a few modifications were made in the original analysis. Finally, the qualitative data was synthesised into three themes and their respective sub-themes.

Results

Researcher was able to draw out three major themes from the interviews with the adolescent boys: (1) division of work; (2) decision making; and (3) parity in education.

Division of work

This section explores the young boys' perceptions, opinions and experiences related to division of work, both inside and outside the house. It would be apt to mention here that a number of participants had mothers who were working outside the house for remuneration. At the time of data analysis two prominent sub-themes that emerged were: unpaid household work and paid work.

Unpaid household work

Majority of the boys were of the view that there is no difference between women and men, girls and boys; thus unpaid household work should be equally divided among female and male members of the family:

There is no difference between my sister and me. Whatever she can do, I can do; and whatever I can do, she can also do. So, both of us share household responsibilities given to us. (Participant-24)

In their opinion it was unfair to burden women and girls with all the household work:

Women and girls are not only meant for carrying out household work. As they are our family, we should also help in doing chorus around the house. (Participant – 1)

During due course of interviews, sharing of household work between sisters and brothers, as their mothers were working outside the house became evident:

When my mother goes out for work, my siblings and I, share and do the entire household work. (Participant-6)

In case those interviewed were the eldest sibling in their family, onus of undertaking household chores fell on them, when their parents were not present at home:

My sister is younger to me and my mother goes out to work from morning till early evening. So when ever my mother is not there, I do all the household chores and also look after my younger sister. She is too young to cook on the gas stove and carry heavy weight around the house. During holidays from school I stay at home and look after my younger sister. (Participant-17)

Those interviewed were of the view that they had learnt to do household work so that they become self-reliant:

When we help women to do household chorus, we also learn how to manage the house. (Participant – 9)

When my mother is away at work, I do household chorus that need to be taken care of at home. This way one learns how to take on responsibility and become independent. (Participant – 18)

Another advantage that became apparent while conversing with the boys was judicious use of manpower and time:

When all the members of the family help in doing housework, the work finishes faster; and members are able to take out time for other activities other than household chorus. (Participant 30)

Household chorus undertaken by boys included cooking, washing laundry, cleaning and dusting:

I like to clean my house, keep it neat and tidy. I can also cook but only a few things like omelette, parathas, chapattis and tea. (Participant-26)

I play a supportive role to my mother; I help her in doing the laundry. (Participant – 31)

One of them mentioned babysitting:

I help in looking after and taking care of my niece. (Participant- 25)

Excluding a few, most of the boys expressed egalitarian views about division of unpaid work among female and male members of the family, irrespective of the fact whether their mothers were working outside the house or not:

Everyone is equal in our country; no one is superior or inferior to others. Women not only perform housework, but some of them also take up work outside their homes to make ends meet. Men and boys should essentially help in doing chorus around the house. (Participant 5)

Paid work

A number of boys disagreed with the idea of fathers as sole breadwinners and mothers as dependent homemakers in the family. As one of the boys pointed out:

The idea of women as only house-wives is obsolete in today's contemporary society. (Participant- 15)

The boys who disagreed spoke about women and girls having equal rights to paid work just like men and boys in India:

Women and men enjoy equal rights in our country and society. The same goes for equal opportunities to paid work; the right to work and earn for a living. (Participant-19)

They were of the view that, it is for women and girls to decide on their own whether they want to take up paid work. Women and girls should have the right to choose between staying at home or working outside the house for remuneration and perks:

I want my sisters to decide for themselves if they want to work outside the house, but they should do so once they have finished their education. (Participant- 31)

Those with egalitarian views spoke about girls having similar aspirations for their future, just like boys:

Just like their brothers, sisters also have dreams about being able to earn their own money and become independent. Sisters also have aspirations about having their own source of income and being able to spend it the way they wish to. (Participant – 7)

In their view when women and girls took up paid work it helped to increase the total income of the family:

When women also contribute to income of the family, it helps to overcome financial crises in the family. (Participant-27)

The boys also viewed working outside the house as an opportunity for women and girls to get exposure outside of the domestic sphere:

When girls are gainfully employed outside the house they are busy. Sitting at home can make one become lazy and spoiled. (Participant-24)

When women work outside of their household boundaries, it helps to widen their horizons, as they get to interact with the outside world. It helps them to gain confidence; increase their knowledge; and learn as well as improve their work skills. (Participant-30)

All those interviewed unanimously agreed that irrespective of gender, there should be equal pay for equal work:

If both the employees are equally qualified and doing same amount of work; irrespective of gender, they should receive the same amount of remuneration. (Participant- 7)

Others spoke about the importance of women's rights at workplace:

It is illegal to discriminate among female and male employees at place of work. (Participant-5)

A number of participants endorsed the stereotype that, 'teaching in a school is the best job for women; as it doesn't involve long working hours and there are fewer chances of sexual harassment in this line of work':

The chances of a female school teacher being sexually harassed at school are almost impossible. While other work-place environments, may not be as safe for women and girls. (Participant 9)

School teacher's job is the best job for women and girls, they come back home early. Other jobs might involve long working hours. This could pose to be a problem, as it becomes difficult to have access to safe means of public transportation, late in the evening and at night. (Participant 27)

Out of those who did not agree with the stereotype, they were of the opinion that there is no difference between women and men, girls and boys. Thus women and girls should have the freedom to decide for themselves, their career paths and choices:

If the office is situated in a locality considered to be safe and the work place environment is good, women and girls will be able to peruse any profession, be it a school teacher's job or office job. Nowadays call centres have made it a priority to ensure safety of female employees at work and also provide transport facilities for them. (Participant-17)

At times women and girls are more brave and fearless than men. In India, many women decide to join the army and police force to serve the country. (Participant-30)

Decision making

This theme deals with perception of adolescent boys with regard to women and girls being an integral part of decision making process within the family; and also as independent decision-makers.

Family decision making

When asked whether only male members should take all important decisions concerning the family, or should all members participate in the process; barring a few, majority of the boys believed that everyone should be consulted. In their view women and girls are as capable as men in decision making:

Men are not superior to women; women can make decisions as good as men. (Participant- 19)

They were of the view that irrespective of gender all members of the family should take part in the decision making process.

It is important that women should also have an equal say in all the important decisions that have to be made in a family; as these decisions will effect each and every member of the family. (Participant- 13)

When everyone is consulted during the making of important decisions, all the members will know what is taking place at home. (Participant – 29)

Adolescent boys considered women to be better at making decisions related to home and family; they were of the view that women know more about the household than others:

At times women are capable of making better decisions than men, because they are better informed about certain issues; and men might be unaware of circumstances that women have an insight on. (Participant-21)

There were others for whom wisdom and experience of elders was more important than gender of the family member:

Elders in the family should be responsible for making decisions, whether it is our grandparents or parents. It is their wisdom and experience that matters, and not gender. (Participant – 24)

A common belief which resonated among most of those interviewed was that while making decisions concerning the family, it was better to be realistic and take into consideration opinions of female as well as male members of the family; rather than be patriarchal and let male members dominate the decision making process.

Taking advice from male members

A considerable number of adolescent boys agreed that it was essential for women and girls to rely on the opinion of male members of the family while making important decisions:

Male members of the family give objective advice based on facts and logic. At times they are emotionally more stable than female members of the family. (Participant- 12)

Many of the boys interviewed believed that women and girls should consult male members of the family at the time of making crucial decisions. They were of the view that fathers and brothers would give genuine and honest advice to women and girls in their family:

There is no harm if sisters take advice from brothers. This is because siblings share a common bond and it is also easier to communicate with them, as they are our contemporaries. (Participant- 3)

Male members of the family will give genuine advice to female members, because they will always have the female members' wellbeing in mind. (Participant – 20)

There were others who believed that men and boys are in a better position to give advice, as they spend more time outside the house than women and girls:

Men have more knowledge than women as they work outside the house. (Participant – 15)

A few of them who had younger sisters, believed it was essential that the elder brother be taken seriously. They gave a few reasons for their perception:

One should take advice from elders in the family as they have more experience. A younger sister should listen to her older male sibling as he knows better than her. (Participant – 5)

I am elder to my sister, so she should listen to me. (Participant- 24)

On the other hand there were many who did not think it was essential for women and girls to blindly adhere to advice given by male members of the family. Some of them were of the view that while making crucial decisions not only male members, but others members of the family should also be consulted:

All members of the family are wise enough to give good advice to others. Family members should listen to each other, have faith and trust in one other, rather than listen to outsiders. (Participant- 29)

There were others who considered wisdom of older members to be more valuable than gender:

It's good to take advice from older members of the family, as they are wiser than the youngsters. (Participant- 7)

Whoever is the older sibling should give advice, irrespective of gender; as older siblings know more than younger siblings. (Participant – 31)

Then there were those who thought that for making a sound decision, it was essential that educated family members be consulted, irrespective of gender:

Educated individuals will definitely give good and sound advice to their relatives, near and dear ones. (Participant – 6)

In the opinion of a few participants, it was not utmost essential that female members should strictly adhere to orders of male members. They were of the belief that female members are always at liberty to make their own choices:

Advice sought from male members of the family should not be blindly followed; women and girls must think for themselves; whether the advice will help them to fulfil their goals or no. (Participant – 8)

Advice should be given by male members of the family only when it is needed or asked for. They don't have to unnecessarily meddle into other peoples' business. (Participant-13)

Parity in education

There was a consensus among majority of the adolescent boys that both girls and boys have an equal right to education. Girls, their sisters, should in no way lag behind their male contemporaries when it came to access to education. They were of the view that parents should spend same amount of money and give the same kind of attention to their daughter's education, just like they would do for their son:

Sisters are as much a part of the family, like their brothers. Both of them should have equal access and opportunities to education. (Participant – 9)

Both girls and boys, sisters and brothers in a family, have the same right to education. Girls should not be deprived of their right to education. It has been given to them by our constitution so that they can secure their future; and lead a good, decent life. (Participant – 27)

Financial independence

In several of the interviews, adolescent boys viewed access to good education, as a means of providing necessary skills and knowledge to women and girls. This would lead to increase in employment opportunities for women and girls; and ultimately make them financially independent:

Good education is a means to well-paid and dignified job in the near future. Thus it's important that parents should invest similarly in their sons' and daughters' education. (Participant – 15)

There is no difference between sisters and brothers in a family. Just like boys are given access to education so that they can earn a decent living during their adult life, it should be the same for daughters. (Participant 25)

Daughters are more caring than sons

The boys believed that, at times daughters are more caring and affectionate towards parents, than sons:

Sometimes girls look after their parents and family more than boys do. It's essential that daughters be as educated as sons in the family; daughters are more affectionate towards their parents; and spend more time with them. They should not be neglected. (Participant-1)

Sharing responsibilities

Others were of the opinion that sisters and brothers must share responsibilities relating to their families:

It's important that girls and boys should have equal opportunities to education and employment. There are all possibilities that daughters might have a more successful career than their brothers. When sisters are made financially independent just like their brothers, they can also take up the responsibility of looking after and providing for their parents and family. (Participant-18)

Educational aspirations

There were others who spoke about educational aspirations of girls:

Girls also have aspirations to get a good education, which will eventually pave the way for their professional career. (Participant-20)

Better decision makers

Education was considered as a means for making knowledgeable decisions:

When a girl is well educated, she will make well-informed decisions not only for herself but also for her family. (Participant-30)

Social status

Education of women and girls was also considered as a means of elevating the status of one's family:

When women and girls in a family are well educated it adds to the prestige of the family in society. (Participant-29)

Desirable quality in a prospective bride

A few of them considered good education to be an asset for a prospective bride:

When men want their prospective wives to be well educated; then families must make sure their daughters are also well educated. So that when they get married, their in-laws and husbands take pride in them. (Participant – 28)

When my sisters are well educated, they will also get married to men who are well educated and well settled in life. (Participant – 31)

Expressing egalitarian attitudes, adolescent boys gave various reasons such as financial independence and sharing of family related responsibilities, for supporting equality in educational opportunities for both girls and boys.

Discussion

This qualitative study set in urban India i.e. Chandigarh, explores egalitarian and in-egalitarian perceptions relating to gender equality among adolescent boys living in a lower income neighbourhood. Using qualitative survey research design, semi-structured interviews were carried out among thirty-one adolescent boys to elicit their views on gender based parity. Three major themes were explored during analyses of qualitative data: (1) division of work; (2) decision making; and (3) parity in education. Based on these three major themes, ideas and opinions of the adolescent boys have been discussed further.

Majority of the adolescent boys were of the view that household work should be undertaken by both female and male members of the family. They were of the belief that it was insensitive to burden women and girls with all the work; they did not consider themselves to be a burden on others as they knew how to carry out household chorus and; more hands made the task of taking care of the family and house easier. During the interviews it became apparent that both sisters and brothers were equally responsible for household chorus delegated to them by their parents. If the adolescent boys were eldest sibling in their family, in addition to chorus they were also responsible for taking care of their younger siblings. They were not shy of discussing domestic tasks undertake by them which included cooking, baby-sitting, cleaning and dusting. These equitable beliefs could be attributed to the fact that being a lower income neighbourhood, a number of women undertook paid work, which made it necessary for all members of the family to do household chorus, irrespective of gender. These findings are in stark contrast to the findings of other studies carried out in Panjab, Haryana and other parts of India, where household chores and rearing children were categorized as feminine gender roles (International Institute for Population Sciences [IIPS] and Population Council, 2010; Nagaraj et al ., 2019).

Excluding a few, most of the participants were of the belief that women and girls have equal rights to paid work, just like their male counterparts. The boys strongly felt that irrespective

of gender there has to be 'equal pay for equal work' at work place. While discussing paid work many of the boys felt that it was important for women and girls to be financially independent. Such independence in their opinion helped women and girls to fulfil their aspirations and dreams. They were aware of the fact that this was a source of additional income for the family. Adolescent male participants supported the idea of women and girls being gainfully employed. This should not come as a surprise, but a considerable number of participants endorsed the stereotype that 'teaching in a school as the best job for women'. In India there is a widely held belief that 'teaching in a school is the best profession for women' as it helps them to maintain a healthy balance between their professional and personal life (Vajiravel, 2015).

These equitable beliefs could be attributed to the fact that being a lower income neighbourhood, number of women undertook paid work; as a result of which it became necessary for all members of the family to do household chores, irrespective of gender. Construction of gender attitudes during adolescents is heavily influenced by the gender norms followed within the family and community settings (Blum et al., 2017; Landry et al., 2020).

The above findings are in stark contrast to the findings of other studies carried out in Panjab, Haryana and other parts of India; where household chores and rearing children were categorized as feminine gender roles (International Institute for Population Sciences [IIPS] and Population Council, 2010; Nagaraj et al., 2019; Waghachavare et al., 2017); on the other hand paid work was considered to be a masculine role (Nagaraj et al., 2019; Sinha, 2007; Waghachavare et al., 2017). In many instances boys believed that there were chances of sexual harassment of women and girls at work place, thus they should avoid taking up paid work (Sinha, 2007).

A considerable number of boys advocated male as well as female participation in the household decision making process. They understood the value of tapping into the pool of knowledge that already existed in the family. They considered hands-on experience and wisdom as essential benchmarks' for qualifying as good household decision makers, rather than gender. On the other hand many boys were of the opinion that whenever women and girls had to make essential decisions about their life, they should take advise given by male

members of the family seriously. This was especially true for adolescent boys who had younger sisters. They endorsed this viewpoint as they believed that men and boys were more objective in their beliefs and they had more exposure to the outside world. Some believed that there was no harm in sisters discussing their problems with their brothers and taking advice from them; as are siblings were family, it was easier to communicate and understand each other better. At the same time there were participants who stated that they did not believe women and girls should blindly follow advice given by male members of the family. Egalitarian views of the adolescent males with regards to participation of women and girls in the decision making process and accepting their right as independent decision makers; do not go well with conservative family hierarchy found in parts many of India; where other members of the family (International Institute for Population Sciences [IIPS] and Population Council, 2010), fathers and brothers dominate the decision making process (Hebert et al., 2019).

The participants believed in parity of education between sisters and brothers in a family. They considered education as a means to lucrative employment in the near future. Some were of the view that girls were more affectionate and caring towards their parents than boys, thus in no way should girls' education be neglected. Many were of the view that when women and girls were well educated it helped to raise the social status of the family; others considered it to be an additional asset for girls who were about to enter the arranged marriage scenario. Expressing gender equitable norms the boys also validated their views by adding that when girls/ sisters were educated and earning just like their male counterparts, they could also financially contribute in taking care of the family and household. The financial responsibility would not exclusively fall on male members of the family.

These findings are consistent with a similar study carried out in backward districts of India; where adolescent boys believed that education was essential for girls as it increased their value in the job market; made them self-reliant ; stand up against oppression and exploitation; work towards gender equality in society and ; understand family dynamics better (Sinha , 2007). Contrary to the above, other studies in northern India revealed that, at times young men and adolescent male members of the family did not support the idea of women and girls

completing their education due to existing gender norms, lack of finances and sexual harassment (Hebert et al., 2019; Nagaraj et al., 2019).

Chandigarh has been rated high on gender equality (NITI Aayog, 2018). Adolescent male participants supported egalitarian views related to division of work, house hold decision making and equal opportunities in education for boys and girls. Though they supported the view 'being a school teacher is the best job for women and girls'. A number of participants also believed that women and girls must seriously consider genuine advice given to them by male members of the family, as male members are more worldly wise.

Strengths and limitations of the research

During the process of literature review, researchers were unable to find similar studies that may have been carried out in Chandigarh.

Coming to limitations, the research used semi-structured questionnaire designed by investigators for the purpose of data collection. Results of the study could have been strengthened through triangulation of data, by including research methods such as observation techniques and group discussions.

The adolescent male participants may have been hesitant in revealing, how they actually perceive gender equality as the researchers were women. Another limitation of the study was that sample was taken from only one lower income locality, therefore it might not be possible to generalise the findings to other communities.

Conclusion

An attempt has been made through this study to understand perception of gender equality and gender attitudes among adolescent boys in Chandigarh, India. Semi-structured interviews were used to collect data from the participants. Qualitative data was analysed by the researchers with the help of directed content analysis and by preparing a code book.

Chandigarh stands fairly well in comparison to other places in India, when it comes to measuring gender equality. This has been reflected in the egalitarian attitudes expressed by the adolescent boys. But at times the boys did speak about certain issues that reflect in-

egalitarian attitudes. There is a need to carry out further research in this area, which will help in designing gender sensitisation curriculum especially meant for adolescents.

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TRENDS IN DELIVERY OF FAMILY PLANNING SERVICES DURING COVID-19 PANDEMIC IN SELECTED STATES OF INDIA

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Abstract

The reduction in unmet need for family planning is one of the transformative successes of India in the domain of reproductive health to progress faster towards achieving Sustainable Development Goals. However, the spread of the COVID-19 pandemic put forth significant challenges in the continuation of delivery of essential health care services, particularly in low and middle income countries. Paying attention to the persistence presence of COVID-19, this study aims to understand the trends in delivery of family planning services (institutional and outreach) in selected states in India. The study has used secondary data from Health Management Information System (HMIS) of selected family planning methods published month wise across six high focused states. The relative change from April 2019 to June 2021 (including two COVID-19 waves) has calculated for pre-pandemic year and during pandemic for all selected states and has compared to understand the relative performance and recovery in delivery of services after first and second COVID-19 waves. It has found that in India, family planning services dropped by about 50% when compared to normal scenario. This implies that 50% fewer eligible couples used family planning services than last year. Results also show that there is low level of service resumption in both outreach and institutional services after the first wave, then a sharp drop in service during the second wave. In spite of being well-prepared and having the proper guidelines, the impact of covid-19 on the delivery of services could not be reduced during the second wave period.

Keywords: Family Planning, Outreach & Institutional Services, Recovering States, Lagging States, Relative Change

INTRODUCTION

In 2020, the entire world has faced the widespread spread of the Corona virus (COVID-19). On December 31, 2019, the virus's first case was found in Wuhan, China. Soon afterwards,

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corona virus cases were detected throughout the world. Due to the frightening development of COVID-19, the WHO labelled it a public health emergency of worldwide concern on 30th January 2020. On 30th January 2020, the WHO reported a total of 7818 confirmed cases worldwide. COVID-19 was declared a pandemic by the World Health Organization on 11 March 2020. Numerous governments throughout the world have implemented lockdown (full or partial restrictions) and quarantine procedures in order to control virus spread. However, as the widespread economic consequences of lockdown became apparent, a small number of countries quickly lifted lockdown measures. Till then the spread of virus has observed two major peaks. The first wave of virus has been observed soon after spread of virus at global level, then after the second wave has been observed during April-June 2021.

The first incidence of COVID-19 was reported in Kerala's Thrissur district on January 30th, 2020. As of that time, there have been 7,500 confirmed cases in 20 different countries throughout the world. In Alappuzha and Kasaragod districts, students returning from Wuhan, India registered its second and third COVID-19 cases. Within a month, India reported verified instances of COVID-19 in nearly all of its states, including Maharashtra, Delhi, Punjab, Rajasthan, Chhattisgarh, Odisha, Uttar Pradesh, Karnataka, and J&K (see below). As a whole, the country was put on lockdown for two and half months, with inter and intra-state travel bans issued in four separate periods. Before the initial shutdown, India had 606 cases and ten deaths linked to COVID-19. In month of June 2020, the things came back to normalcy. Huge number of people have been infected with the virus in India between April and May, 2021, with a high death rate. The public health system was in shambles during the second wave period. However, the restrictions imposed during the second wave were more lenient than those imposed prior to it.

Impact of covid-19 on family planning services

One of India's revolutionary breakthroughs in the domain of reproductive health has been the reduction in unmet demand for family planning, which has allowed the country to move more quickly towards the achievement of the Sustainable Development Goals. The development of the COVID-19 pandemic, on the other hand, posed considerable obstacles to the continuation of basic health-care services, particularly in low- and middle-income nations, where public

health services are already poorly distributed. Concerns regarding the influence of COVID-19 on women's capacity to continue using contraception were raised at the outset of the pandemic by tactics such as social distance, lockdown methods, and mobility restrictions, as well as anxiety of travelling to health facilities. The availability of family planning products and services was also challenged by disrupted global manufacturing and supply networks, as well as overburdened health facilities. It is possible that prioritising covid-19 and diverting resources from other health-care priorities in order to prevent the spread of the virus will adversely impact routine and necessary services such as family planning and reproductive health, particularly in states where access to family planning services is already limited. Corona virus' outbreak diverted the health care sector's attention solely to virus containment, which resulted in a significant decrease in attention to other health care needs for citizens. As a result, public trust in public health systems has been eroded due to stigma and misunderstanding surrounding the infection. There was a lot of turbulence in the delivery of public health services during the lockdown. Furthermore, the COVID-19 management cut back on outreach services, particularly family planning, by diverting front-line personnel. According to the National Family Health Survey-4, 69 percent of Indian couples have access to modern family planning methods through the public health system (NFHS-4, 2015-16). According NFHS-5 the unmet need for family has gone down in all almost all states, however few states still has long way to go (NFHS-5, 2019-20).

According to estimations by Das Gupta et al. (2020), pandemic might result in roughly 60 million fewer people using modern contraception by 2020. According to UNFPA's latest figures, due to service disruptions that lasted more than three months in most countries, 12 million women may have been unable to get family planning services. As a result, 1.4 million unwanted births may occur before women are able to resume using family planning services (Dasgupta, 2020; UNFPA, 2021; Riley, 2020). According to a policy brief published by a well-known non-governmental organisation, logistical concerns such as a lack of supply, human resource issues, and a lack of access will result in 26 million couples in India having unmet contraception needs if the current situation continues. 2.4 million unplanned pregnancies; 1.45 million abortions, of which more than half would be unsafe; and more than 1700 additional maternal deaths are expected as a result of this. If it hadn't been for the pandemic, more than 0.7 million tubal ligations would have been performed, almost 1 million

IUDs would have been implanted, and around 0.6 million injectable contraceptives would have been supplied during these six months (IPPF, 2020; Caruso, 2020; Church, 2020).

The COVID-19 epidemic has weakened the case for universal access to sexual and reproductive health care services, including family planning, by 2030. Once the interruptions caused by COVID-19 are overcome, contraceptive use – and hence the SDG 3.7.1. Indicator – may quickly revert to pre-disruption levels. For short-term methods, given that methods require frequent refill, the health system might theoretically return to pre-COVID-19 levels within a short amount of time once service operations began fully (Lindberg, 2020; Vora, 2020; Karavadra, 2020). However, with long-acting treatments, a longer period may be required to make up for services that were not supplied during the COVID-19 disturbances. Most importantly, the consequences are long-lasting for women – and their partners and families – who experienced an unwanted pregnancy as a result of a lack of access to birth control methods during COVID-19 disturbances. To ascertain the impact of COVID-19 disruptions on contraceptive services and use, governments and family planning service providers must continue collecting data via health management information systems, with a particular emphasis on data quality and completeness during the crisis (IPPF, 2020; Ullah, 2020). This is especially necessary now that major survey programmes have suspended field data collection. By the time surveys resume, some of the gaps in contraceptive usage may have resolved, as proven by research on contraceptive use during and after the West African Ebola epidemic and so the reduction in use recorded during the crisis may be lost in future surveys (Bastard, 2020; Bietsch, 2020).

Paying attention to the situation the present study aims to understand the trends in delivery of family planning services (institutional & outreach) in six high focused states (Bihar, UP, Assam, MP, Chhattisgarh, Rajasthan) of India. Further, this study attempts to quantify the gaps in delivery of services between pre-pandemic year (2019-20) and pandemic year (2020-21, first wave and second wave of COVID-19).

DATA & METHODOLOGY

Data

This study used secondary data of selected modern family planning indicators from Health Management Information System (HMIS) for high focused states. Data from the months of

March to June 2019 and 2020 were compared. Data on selected modern family planning methods was extracted from HMIS website 2019-20 and 2020-21. The selection of states have been done based on priority given at policy level. Therefore, five high focused states for family planning have been picked up for analysis. This study primarily focusing on the immediate impact assessment of COVID-19 on family planning service delivery. The various family planning methods have been clubbed into institutional and outreach services for the purpose of analysis.

Method

The relative change from April 2019 to Sep 2021 (including two COVID-19 waves) has calculated for pre-pandemic year and during pandemic for all selected states and has been compared to understand the relative performance and recovery in delivery of services after first and second COVID-19 waves. Further, time series graphs will be used to present chronological distribution of family planning services in same states.

The formula for relative change is explained below:

$$\text{Relative Change} = \frac{\text{Present Year} - \text{Base Year}}{\text{Base Year}} * 100$$

Here,

Base Year = 2019

Present Year= 2020 & 2021

To include the seasonality pattern of family planning services, the relative change has been calculated for three quarters of the year. Therefore, the entire year has been divided in to four quarters. The *first quarter* includes months of *April-May-June*; *second quarter* includes months of *July-August-September*; *third quarter* includes *October-November-December* and *fourth quarter* includes months of *January-February-March*.

The selection of states have been done keeping in mind two main criteria; first, the need for family planning methods (unmet need and total fertility rate); second, the number of covid-19 cases reported in these states. Therefore, the five high-focused states with high COVID-19

cases reported as well as relatively high unmet need for family planning have selected for the study to understand the trend of family planning services during entire pandemic timeline (till Sep 2021).

As per NFHS-5 the unmet need for contraception has reduced 4 percent for India from its previous level (NFHS-4, 13 %) (IIPS and ICF international , 2015-16). Further, almost all states in India has shown improving trend in fertility and family planning practices. For instance, states like Rajasthan and Madhya Pradesh has achieve replacement level of fertility according to NFHS-5 data release (IIPS & ICF International, 2019-20). Despite, improving trend Uttar Pradesh and Bihar yet need to achieve replacement level of fertility and satisfy unmet need for family planning for it's almost more than 11 percent eligible couples (*see table 1*). As of Jan, 2022, India ranks second in the world with 3.52 crore total reported confirmed cases after USA. Among the selected high focused state Uttar Pradesh has reported highest number of COVID-19 cases followed by Chhattisgarh and Rajasthan. Bihar relatively has reported relatively less number of COVID-19 cases. Looking at the fatality rate, it's visible from table 1 that despite low reported cases the fatality rate is higher than all other selected states. Similarly, in Assam too fatality rate is relatively higher. In UP and Chhattisgarh, the fatality rate remain higher that national average. In Rajasthan despite high number of reported cases the deaths due to COVID-19 remain low in state.

Table 1: Number of reported cases, deaths and fatality rate of COVID-19 at Global and State level as on 07/01/2022

	Country/States	Total Cases	Death	Fatality Rate (%)	NFHS- 4 (unmet need)	NFHS-5 (unmet need)	NFHS-4(TFR)	NFHS-5 (TFR)
1	USA	5.85cr	8.32L	1				
2	India	3.51cr	4.82L	1	13	9	2	2
3	Chhattisgarh	10.1 lac	6174	1	11	8	2	2
4	MP	7.95lac	13605	2	12	8	2	2
5	Rajasthan	9.6 lac	8967	2	12	8	2	2
6	UP	17.2 lac	22916	1	18	13	3	2
7	Bihar	7.3 lac	10535	1	21	14	3	3

Source: <https://www.mygov.in/corona-data/covid19-statewise-status/>, NFHS-4 & NFHS 5

RESULTS

STATE-WISE TRENDS IN INSTITUTIONAL & OUTREACH SERVICES

India

Lockdowns inside cities, regions, and surrounding borders were among the first steps taken by all countries to halt the outbreak of this virus. Due to the lockdown and suspended transportation, individuals had limited access to routine healthcare services. This had an impact on healthcare use. The measures to stop the spread of infection among the population have disrupted supply chain operations, making commodities and supplies for family planning inaccessible. Due to a significant reduction in human resources, particularly at primary health facilities, the pandemic has had a negative impact on access to contraception. Human resources, personal protective equipment, and all other essential health facilities were diverted to the prevention of COVID-19 infection (Ullah, 2020).

It's evident from *fig 1* that during first wave period the institutional and outreach services has noticed decline, however, the institutional services are the largely affected during both first and second wave of pandemic. Similar trend of service decline can be observed in both round of COVID-19 peaks. It's interesting to note here that both institutional and outreach services has showed recovering trend in post first wave period, however the institutional services noticed same level of dip during second wave of COVID-19. The trend analysis highlights that despite preparedness and proper guideline during second wave of COVID-19 the family planning services decline sharply. Seeing at fact, for India, the second wave was more severe in terms of number of reported cases, hospitalization and death rate. The given chaotic situation and increased hospitalization has resulted into burdened and collapsing public and private health infrastructure. Further, the stigma and fear of infection has resulted into decreased demand for institutional family planning services. However, the available data only give insight about the supply side picture of family planning services during pandemic timeline.

Recovering States

Uttar Pradesh

Fig 1 highlights that during first peak of COVID-19 the services reduced up to 70 percent from its previous year level. However, from the month of May onwards the outreach services has shown improving trend and showed 74 percent positive change in second quarter (JUL-SEP) just after first wave of COVID-19. The institutional services showed positive change in third quarter relatively more than outreach services. The decline in both institutional and outreach services has been noticed in the month of April (during second wave). However, comparison between two waves highlights that the highest reduction services has been noticed during first wave of COVID-19, despite least number of COVID-19 cases reported in same duration. This can be explained by the fact that the lack of preparedness and restrictions on mobility due to lockdown resulted in more disruption in delivery and accessibility of essential health services, rather than the actual severity and spread of virus.

Chhattisgarh

Compared to all other high focused states Chhattisgarh has reported relatively less disruption of both institutional and outreach services (*see fig 1*). However, it's also worth noticeable here that in Chhattisgarh the delivery of both institutional and outreach services followed almost a stationary pattern with slight ups and down. Through pandemic period the institutional services followed negative trend during entire pandemic period and showed no recovering trend in post first wave period. The outreach services in states showed a positive trend even during lockdown and second wave period which highlights that the disruption in outreach service is very less compared to institutional services (*see fig 1*).

Lagging States

Bihar

In Bihar the institutional services followed negative trend throughout pandemic and post pandemic period. During first wave of COVID-19 the services declined more than 65 percent to its previous year level. However, institutional services showed recovery in decline inflicted

from first wave, but that too remain negative compared to previous year level. Looking at distribution of outreach services during pandemic period, it's evident from the graph (*see fig 2*) that outreach services has showed less disruption and better recovery compared to institutional services. Notwithstanding, during entire pandemic period (first wave to second wave) the level of family planning services in Bihar followed negative trend compared to previous year (2019-base year). However, in second wave period the outreach services witnessed less disruption in delivery compared to first wave period.

Madhya Pradesh

Looking at the distribution of family planning services in Madhya Pradesh during COVID-19, the fig highlights that the institutional services has reduced up to 50 percent to its previous year level during both first and second waves of COVID-19. The institutional services showed a recovering trend in 2nd quarter of year 2020-21, however again showing declining trend in second wave period (2021-22). Looking at the relative coverage of outreach services it's evident that outreach services were relatively better in both covid-19 wave periods (*see fig 2*). The exceptional decline in outreach in 3rd quarter of (2020-21) might be because of discrepancies in data reporting for particular month. The results highlight that despite better preparedness and proper guidelines on delivery of essential health services during lockdown period, the delivery of services showed similar trend in both first and second wave of lockdown.

Rajasthan

The scenario of family planning service delivery in Rajasthan showing a fluctuating trend with changing situation of COVID-19 spread in the State. During first wave when lockdown measures and restrictions on mobility were high the institutional services noticed almost 60 percent reduction in month of April (2020-21) and 51 percent in the month of May (2020-21). During second wave period highest reduction (54 percent) in institutional services have been noticed in month of May. The huge surge in institutional services in fourth quarter highlights the pending demand of family planning services during first wave lockdown period. In general looking at the trend of family planning services during COVID-19 it is evident that compared to previous year 50 percent less couple availed institutional services during peak

months of COVID-19 waves (*see fig 2*). Further, comparing institutional and outreach services, the institutional services witnessed disruption of up to 55 percent, however, outreach services noticed decline of 15 -26 percent to its previous level during entire COVID-19 period. Which highlights that the need for limiting methods affected more compared to need for spacing.

Figure 1: Relative change in institutional and outreach services during 2019-2020 & 2020-21 in India/ states in India

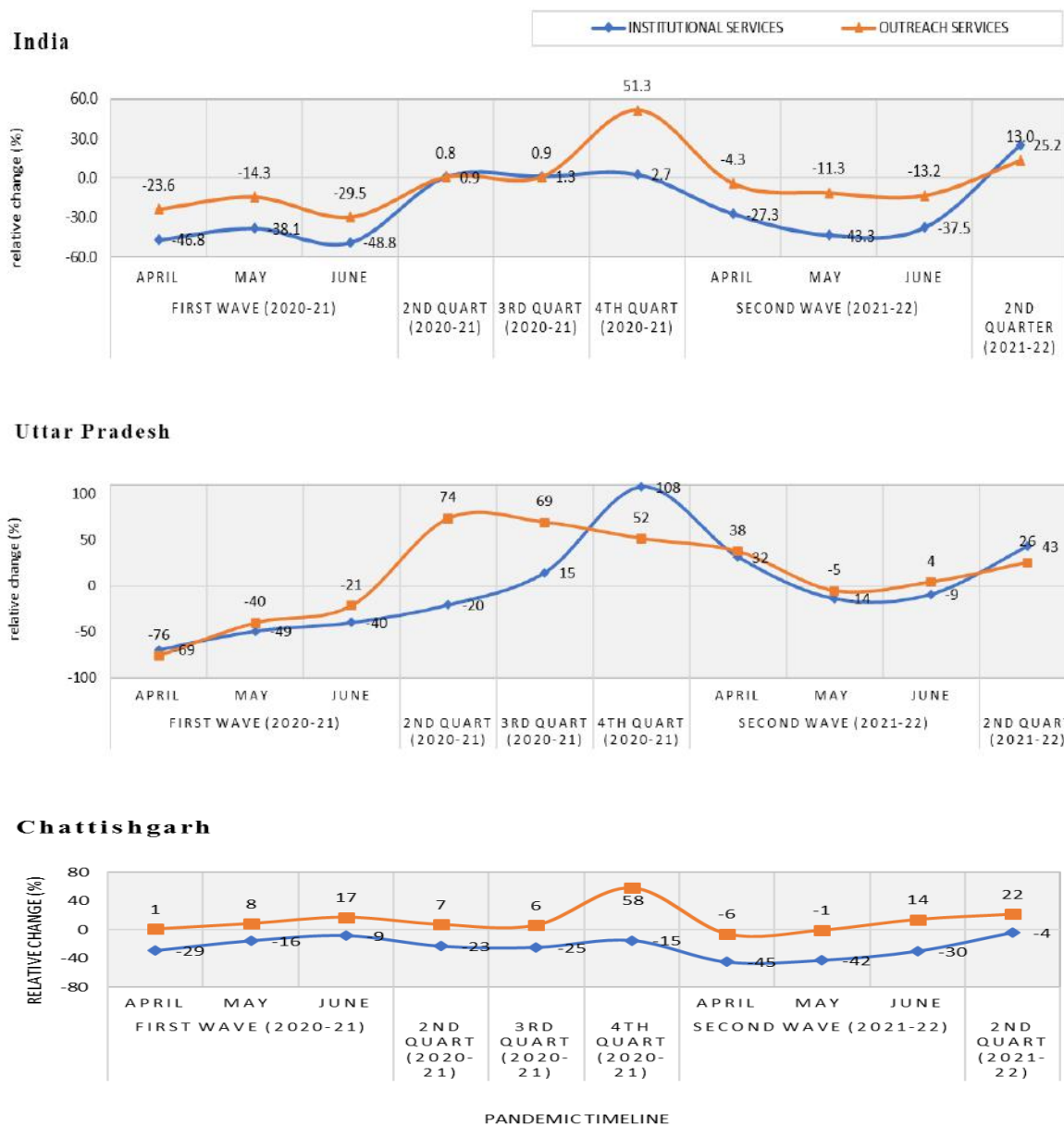
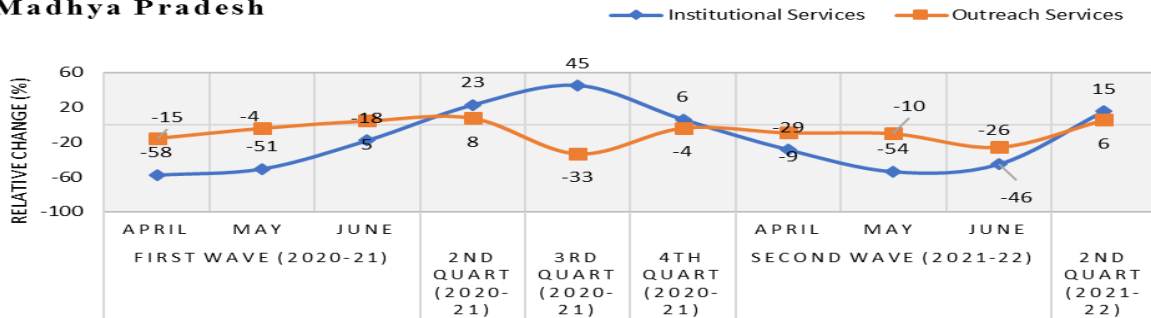
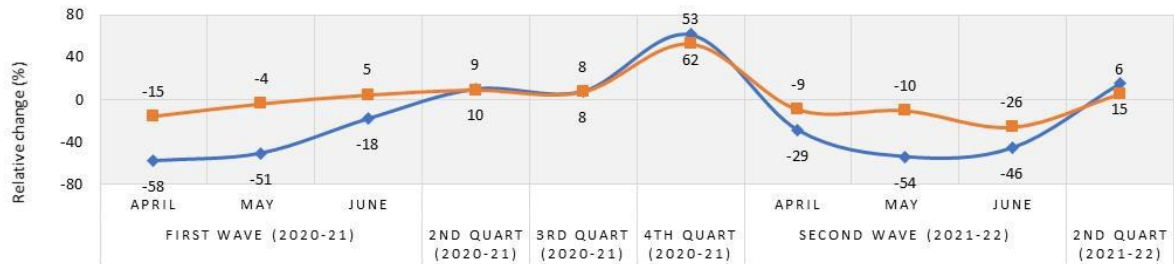


Figure 2: Relative change in institutional and outreach services during 2019-2020 & 2020-21 in states in India

Madhya Pradesh



Rajasthan



Bihar



PandemicTimeline

COVERAGE OF VARIOUS FAMILY PLANNING METHODS

Male Sterilization

Fig 3 highlights that the relative change in male sterilization followed negative trend in all three quarters of the year. Exceptionally UP has recorded positive trend in second quarter,

however negative trend continued for third and fourth quarter. In first quarter (April-June) the relative change in the male sterilization shows negative trend for all six states. The highest downfall have been notices for Chhattisgarh (-94 percent). Although, in second quarter (July-Sep) of the year the improvement has been noticed in Bihar, MP and Rajasthan. It's evident from *fig 3* that the reduction occurred in male sterilization during COVID-19 did not notice any recovering trend to its previous level in last quarter of the year too when the lockdown measures were lifted and virus infection slowed down in the country.

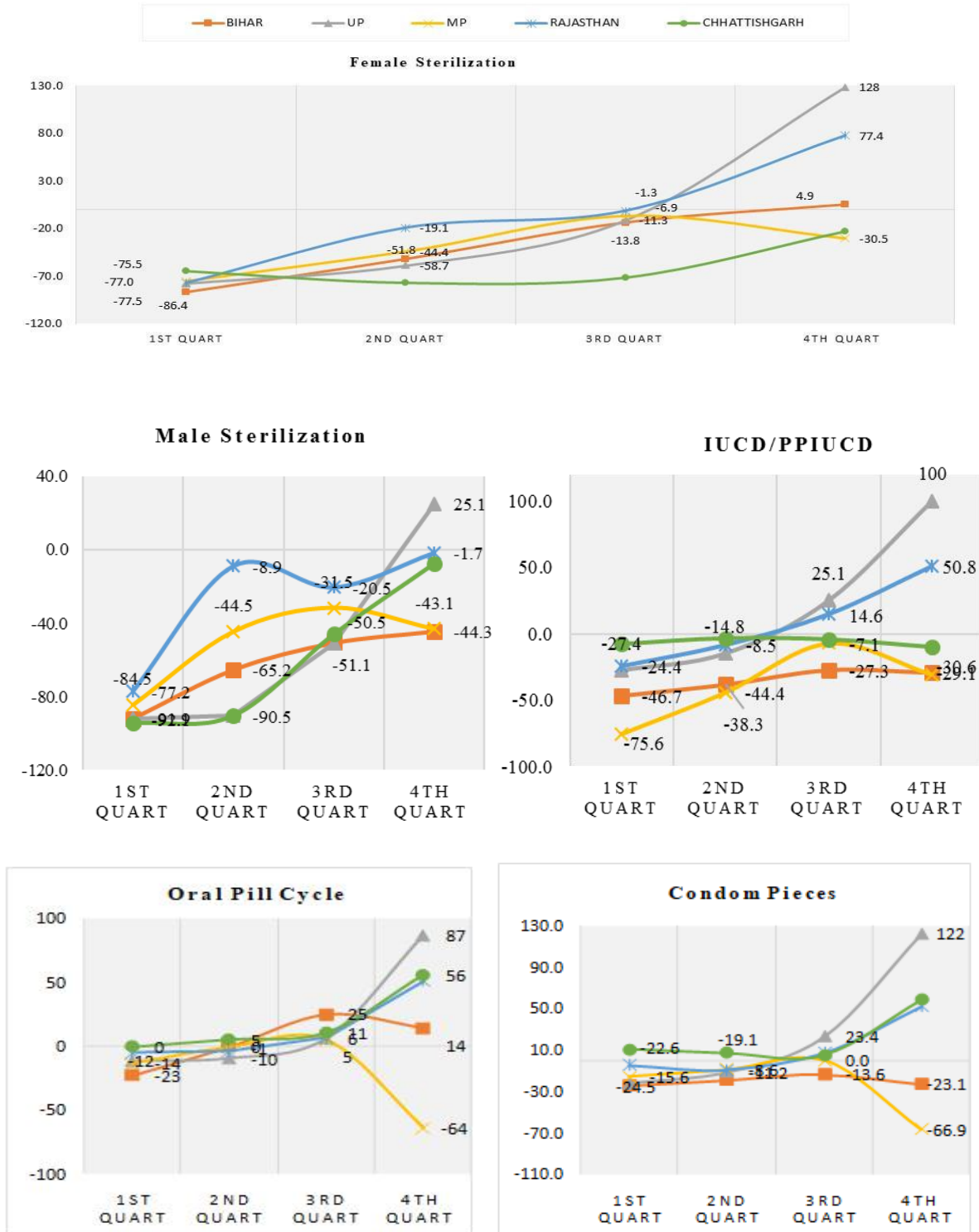
Female Sterilization

Female sterilization is one of the popular family planning method across India. The relative change in female sterilization during COVID and Pre-COVID highlights that till three quarters female sterilization services has followed negative trend across all high focused states. Further, Fig 3 highlights that the highest reduction has been noticed in first quarter of the year when COVID-19 outbreak has been noticed in entire country and lockdown measures has been implemented. The coverage of female sterilization has noticed improving trend in later quarters of the year, despite improvement the coverage followed negative trend for all states except UP, Rajasthan. Looking at across states reduction in female sterilization, it's evident that the highest reduction has been noticed in Chhattisgarh (*see fig 3*).

IUCD Insertion

Looking at coverage of IUCD insertion surprisingly the highest reduction have been noticed in third quarter of year across all high focused states. Similar to other intuitional based family planning services, the highest drop has been noticed in Chhattisgarh compared to other selected states. It evident that UP, MP and Rajasthan has recovered positively from its previous year level in IUCD insertion in fourth quarter of the year (*see fig 3*). Further, In Chhattisgarh, the IUCD insertion has remain constant during all four quarters of year. The highest reduction in IUCD insertion has been noticed in Madhya Pradesh almost across all quarters of the year compare to previous year (2019-20).

Figure 3: Relative Change in Various Family Planning Methods between 2019-20 & 2020-21



Oral Pill Cycle

Fig 3 highlights the relative change in distribution of Oral Pill cycles during 2019 and 2020 for all six high focused states. Relative change highlights that this is least affected family planning method in all states. The variation remains constant during three quarters of years and noticed a recovering trend in last quarter of the year. However, in Madhya Pradesh the negative trend has been observed for last quarter of the year. Looking at relative change state wise the highest downfall has been noticed in Uttar Pradesh for initial three quarters of the year, nevertheless, noted highest recovery in last quarter of the year.

Condom Pieces

Looking at relative change in distribution of condom pieces fig 3 highlights that in most of the states (Bihar and MP) negative pattern remain unchanged throughout the year. However, states like UP, Chhattisgarh and Rajasthan has witnessed relatively less disruption in first three quarters and faster recovery during last quarters has been observed, exceptionally, MP which has noticed a dip of 66 percent during last quarter of the year. Further, across all high focused states in Bihar the distribution of Condoms covered 25 percent less couple during first quarter of the year, which includes strict lockdown measures and mobility restrictions across country (*see fig 3*). Besides this the figure highlights that the states did not notice any positive change in last quarter of the year. In UP, Chhattisgarh and Rajasthan the distribution of condom pieces has covered more couples than previous year distribution.

SUMMARY AND CONCLUSION

At the inception of COVID-19 outbreak, procedures such as social isolation, lockdown methods, and movement restrictions, as well as dread of visiting health facilities, prompted concerns about COVID-19's impact on women's capacity to continue taking contraceptives (Lindberg, 2020; Church, 2020). Further, country like India which shows huge inequality in utilization of family planning services across states, needs greater care during pandemic to address the differing family planning needs of couples. Given the context, the pandemic time

has turn out to be difficult and crucial to monitor the delivery of services, particularly in these high priority states. The analysis from this study highlights that in India family planning services noticed dip of around 50 percent compare to normal situation, which indicate that 50 percent less eligible couples have availed family planning services compare to previous year. Therefore, reduced level of modern contraception might manifest in form of untimed and unwanted pregnancies, poor child health due to low birth interval or reproductive tract infections. Besides, result highlights the poor level of resumption of services during post first wave period in both outreach and institutional services, followed by sharp decline during second wave period. Despite, preparedness and proper guidelines the impact of covid-19 on delivery of services could not be reduced during second period too. It's important to notice here that other than continuous presence of virus, the other factors behind decline in family planning services in both wave periods are bit different. Notwithstanding, the second wave were characterised with shattering public health system, rapid spread of virus and higher loss of life, though less strict restrictions on mobility and delivery of services. Among selected states, only Uttar Pradesh has shown a recovering trend after first wave of COVID-19 and less disruption in second wave period in both institutional and outreach services. Though Uttar Pradesh is state which was severely hit during second wave reported high number of cases and fatality. Other states like Bihar and Assam which were reported relatively less number of cases but higher disruption of services and no signs of recovering trend in delivery of services. It's concerning here that Bihar, which showed relatively highly disrupted family planning services continuously might affect the fertility and family planning programmes in shorter or also at longer run. The state like MP and Chhattisgarh also fall in same category with low resumption in services. Most of institutional services i.e. male sterilization, female sterilization and IUCD remain low in all states throughout year. This pose a great challenge on women's fertility behaviours and country's preparedness to deal with its probable implications.

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Declining Child Sex Ratio of India: A Matter of Concern!

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Abstract

This study analyses the impact of socio-cultural and developmental variables on 'Declining Child Sex Ratio of India' with the help of statistical tools such as correlation and multiple regressions. It studies Total CSR (TCSR), along with Rural CSR (RCSR) and Urban CSR (UCSR) at the district level, using census data of 2011, to examine rural-urban differences. Socio-cultural variables include percentage of Scheduled Castes (SC%), Scheduled Tribes (ST%) and 'Others' (OTHRS%). Developmental variables are related to Literacy, Work Participation, Other Workers and Urbanisation.

The major findings are: a) Impact of socio-cultural and developmental variables on CSR was significant at the district level in 2011; b) percentage of SCs and 'Others' had significant negative effect but percentage of STs had significant positive impact; c) literacy-related variables influenced UCSR more positively than TCSR and RCSR; d) among literacy-related variables, only literacy sex ratio affected TCSR, RCSR and UCSR, while remaining ones influenced only UCSR very positively and; male literacy rate had significant negative impact on TCSR and RCSR; e) among work-related variables, male work participation rate, female work participation rate and percentage of workers recorded a significant positive impact on TCSR, RCSR and UCSR; f) impact of a greater number of non-agricultural jobs to women in relation to men was significant positive on rural CSR.

The study suggests that, CSR of India can be improved by encouraging female literacy and reducing a gap between male and female literacy, creating more work opportunities in general and non-agricultural jobs to women in relation to men in rural areas; and by creating a positive attitude towards a girl child among men and women.

Introduction

India experienced economic, scientific and technological development in the twentieth century. It also showed an improvement in many social indicators like infant and maternal

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mortality, life expectancy and literacy over a period of time. In the last two decades, its sex ratio also improved because of better medical and health care facilities, exhibiting the improved women's conditions. However, it experienced a steep fall in Child Sex Ratio (CSR) during the same period, implying deterioration in the well-being of the female children. Though, Sex Ratio improved from 927 in 1991 to 933 in 2001 and 943 in 2011, CSR declined from 945 in 1991 to 927 in 2001 and to 919 in 2011 (Refer Table 1). This paradox of declining CSR with economic growth and improvement in demographic variables calls for an in-depth research to find out the reasons behind a fall in CSR and also the solutions to improve it in future.

Table 1: Sex Ratio and Child Sex Ratio of India (1991 – 2011)

Year	1991	2001	2011
Sex Ratio	927	933	943
Child Sex Ratio	945	927	919

Source: Census of India 1991, 2001 and 2011.

The issue of declining child sex ratio was also faced by many south Asian countries and recently, by eastern European countries. Researchers have come to the conclusion that, the main reasons of decline in Child Sex Ratio (CSR) are, son preference (patriarchal society), decline in fertility and sex selective abortions (Guilmoto, 2010). These three reasons are also applicable to a decline in CSR of India and are explained below:

1 Decline in fertility: Over time, people started realizing benefits of having small families. According to NFHS-3 in 2005-06, among married women and men with two or more children, at least four out of five did not want to have any more children. Two thirds of Indian women and men considered the ideal family size to be two children or less. This thinking led to a decline in total fertility rate (TFR) from 3.39 according to NFHS-1 in 1991-92 to 2.0 according to NFHS-5 in 2019-21.

2 Son preference: Though fertility declined over time, son preference remained intact. According to NFHS-3, twenty percent couples told that, they would like to have more sons than daughters, while only two or three percent wanted to have more daughters than sons. For every number of children, the percentage of women who wanted to stop childbearing, was

lowest if a woman did not have any sons. Among women with two living children, 90% wanted to stop childbearing if both their living children were sons and 87% wanted to stop their childbearing if they had one son and one daughter, whereas only 61% wanted to stop childbearing if they had two daughters and no son. However, it is noteworthy that, the proportion of women with two daughters and no sons who wanted no additional children, increased rapidly from 37% in NFHS-1 to 47% in NFHS-2 to 61% in NFHS-3.

3 Sex selective abortions: The growth of the small family norm or planning the family meant planning for sons and preferably without daughters and certainly not more than one daughter. Thus, preventing the birth of daughters became more deliberate in recent times. Women carry the responsibility and burden for producing the correct 'family' if necessary, through repeated conception and abortion. Therefore, female infanticide in the past was replaced by sex selective abortions of female foetus by going through an ultrasound test. It has been noted that India has more ultrasound machines per population than the west (John et al. 2009).

In recent years, there has been an increased prevalence of mobile private sex determination clinics using ultrasound technology which also often provide abortion services. The mobile clinics displayed advertisement such as "Pay Rs. 50 now and save Rs. 50,000 later" (George, 1997). Thus, widespread use of sex selective techniques and sex selective abortions seemed to have led to a steep decline in CSR. Kelly (2008) argued that around 10 million female foetuses may have been aborted in India over the last two decades. According to the recent figures published in *Lancet*, around 500,000 female foetuses were aborted every year. In the last two decades, child sex ratio fell so low that there is a general agreement that sex selective abortions are largely responsible for it.

The researchers agree that the basic reason of declining CSR is 'Son preference', followed by gender discrimination, which is the culmination of both economic and socio-cultural factors and it has not changed, along with economic and social changes. The reasons for son preference given by the people are that they need to have a son to provide them with support in old age and carry on the family name and also to give them social status. It is also a fact that sons inherit property in the patrilineal culture. In contrast, daughters are perceived as liabilities, mainly because of dowry. (Larsen, 2011). Because of son preference, as family

size decreases owing to decline in fertility, total number of children that couples desire falls more rapidly than the total number of desired sons, thus increasing the proportion of sons per couple (Clark, 2000).

In this context, Miller (1981) discussed 'North-South Divide' while explaining the differences in sex ratio. She believed that there were broadly two cultures at work. The northern culture was more masculinist and the southern one more feminist or at least more egalitarian. She considered the relatively low rates of work participation in agriculture in the north - "Work is worth" in her famous phrase and high marriage costs and dowry as a serious threat for daughters. In addition to it, Dyson and Moore (1983) attributed the north-south divide to differential kinship arrangements. They explained further that northern and western states are characterized by exogamous marriage system (bride being away from her natal home resulting in extreme isolation from her natal kin), lower autonomy, no share in inherited property and greater discrimination as compared with their southern counterparts. It leads to lower sex ratio in the north than that in the south. In contrast, southern and eastern states are characterized by relatively low fertility, late age at first marriage, lower marital fertility, lower infant and child mortality, share in inherited property, sometimes familiarity with the patrilineal household and greater autonomy and favourable status. It leads to higher sex ratio.

However, it is suggested by researchers that CSR can be improved by urbanization and industrialization to increase jobs, improve incomes and retirement savings, which will reduce dependence on son. (Chung and Dasgupta, 2007). Further, by promoting education and employment among women, their economic value will increase and will lead to less discrimination against girl child, resulting in high CSR (Agnihotri, 2002). He also observed that, wherever the proportion of Scheduled Tribes is high, CSR tends to be higher. In contrast, CSR of upper castes is lower than that of lower castes.

According to the researcher's knowledge, a comprehensive District-Level study of 'Declining Child Sex Ratio of India', considering both socio-cultural and developmental factors has not been undertaken so far, so the present study focuses on this aspect, trying to find out its reasons and explore solutions to improve it.

Methodology

Nature of Study: This study briefly analyses the levels, trend and pattern, shown by CSR of India in three types i.e., Total CSR (TCSR), Rural CSR (RCSR) and Urban CSR (UCSR) to assess rural-urban differences, if any. It also analyses the levels and pattern shown by CSR of three types at the district level for the year 2011. The present study is analytical and it has used statistical tools such as correlation and multiple regressions. Correlation is used to examine the relationship between CSR and different variables individually. These variables are classified into two, socio-cultural variables and economic or developmental variables. Socio-cultural variables include percentage of Scheduled Castes, Scheduled Tribes and 'Others' (Upper Castes). To examine the impact of these socio-cultural variables on CSR individually, this study analyses CSR in three different cases i.e., SCs, STs and Others along with four combinations of developmental variables, using multiple regressions. Developmental variables are related to literacy, work participation, non-agricultural (Other) workers and urbanization. The list of the variables used for the analysis mentioned above, with their abbreviations is given in Table 4. The whole analysis of correlation and multiple regressions is conducted at the district level to bring authenticity to the results because of its large sample size (640 districts). It also aims to study how the socio-cultural and developmental variables are related with and influence not only TCSR but also RCSR and UCSR separately. It will help to understand which of these variables have similar or different impact on RCSR and UCSR and to what extent.

Since declining CSR is a gender issue, this study analyses the impact of gender neutral as well as gender specific developmental variables on CSR separately in four types of multiple regressions. The first type includes gender neutral variables like the percentage of workers, percentage of literates, percentage of other workers and percentage of urbanization. The second and third type include gender specific variables like male literacy rate and male work participation rate; and female literacy rate and female work participation rate respectively. To understand the condition of women in relation to men and CSR being a ratio, the fourth type includes different ratios such as sex ratio of literacy, sex ratio of work participation and sex ratio of other workers. This analysis ascertains the factors which have a positive or negative

impact on CSR, thus enabling us to find out the reasons behind the fall in CSR and also recommend solutions to improve the same in future.

Area and period of study: This study briefly analyses CSR of India in three types i.e., Total CSR (TCSR), Rural CSR (RCSR) and Urban CSR (UCSR) for the years 1991, 2001 and 2011 (Refer Table 2). It also analyses all three types of CSR for the year 2011, using census data for its districts. The number of districts of India are shown in Table 3. The whole analysis of the three types of CSR, using correlation and multiple regressions, is conducted at the district level for the year 2011.

The states and union territories are grouped as follows:

Northern states and union territories: J&K., H.P., Uttarakhand, Punjab, Haryana, Chandigarh, NCT of Delhi, U.P. Rajasthan, M.P., Bihar.

North western states and union territories: Gujarat, Maharashtra, Daman & Diu, Dadra & Nagar Haveli.

North eastern states: Sikkim, Arunachal Pradesh, Meghalaya, Nagaland, Tripura, Manipur, Mizoram, Assam.

Eastern states: West Bengal, Jharkhand, Chhattisgarh, Odisha.

Southern States and union territories: Goa, Karnataka, A.P., T.N., Kerala, Puducherry Lakshadweep, Andaman & Nicobar.

Table 2: CSR of India: 1991, 2001, 2011

CSR	1991	2001	2011
TCSR	945	927	919
RCSR	948	934	923
UCSR	935	906	905

Source: Census of India, 1991, 2001, 2011.

Table 3: Number of States and Districts of India (2011)

Type	Total	Rural	Urban
Districts	640	631	637

Source: Census of India, 2011.

Table 4: List of variables used for the analysis

Socio Cultural Variables	Abbreviations
% of scheduled cast population	SC %
% of scheduled tribes population	ST %
% of "others" population	OTHS%
Developmental Variables	Abbreviations
% of Literates	LIT %
% of Workers	W %
% of Other Workers	OW %
% of Urbanization	URBN %
Male Literacy Rate	MLITRT
Female Literacy Rate	FLITRT
Male Work Participation Rate	MWPRT
Female Work Participation Rate	FWPRT
Literacy Sex Ratio	LSR
Work Participation Sex Ratio	WPSR
Other Workers Sex Ratio	OWSR
Dependent Variables	Abbreviations
Total Child Sex Ratio	TCSR
Rural Child Sex Ratio	RCSR
Urban Child Sex Ratio	UCSR

In India, Child Sex Ratio is defined as number of female children per thousand male children (0-6 years), whereas, internationally, it is defined as number of male children per hundred female children.

Limitations of study: The study is based on secondary data collected from the census reports, selecting those relevant variables whose data is available in the census. The researcher is aware that there are many other variables affecting CSR of India, but due to non-availability of such data, these are not considered.

Results

District level analysis of CSR of India (2011 census):

Analysis of CSR of districts of India: Levels and Pattern

According to census 2011, among 640 districts, the lowest TCSR was shown by Mahendragarh (775) from Haryana, and there were six districts, showing TCSR below 800, four from Haryana and two from J & K. The number of districts having TCSR 900 or below,

was 177 and were mostly from the northern and north western states, barring three from Odisha, two from Tamil Nadu and one each from north eastern states like Nagaland, Manipur and Arunachal Pradesh. The district Lahul and Spiti from Himachal Pradesh recorded the highest TCSR (1033) and one each from Chhattisgarh and Arunachal Pradesh also had TCSR above 1000. There were 209 districts, having TCSR 950 or above. Mostly they were from the north eastern, eastern and southern states, barring seven each from M.P. and Bihar, four from H.P. three from Maharashtra and two from Gujarat.

According to census 2011, among 631 districts, East of the NCT of Delhi recorded the lowest RCSR (716) and there were eleven districts showing RCSR 800 or below, five of them were from Haryana, three from NCT of Delhi, two from J&K and one from Maharashtra. The number of districts having RCSR 900 or below was 160 and were mostly from the northern and north western states, except four from T.N., two from Odisha and one each from Manipur and Arunachal Pradesh. The district Lahul and Spiti of H.P. showed the highest RCSR (1033) and five more districts had RCSR above 1000, of which three were from Arunachal Pradesh and two from Chhattisgarh. There were 223 districts, registering RCSR 950 or above. Mostly they were from the southern, eastern and north eastern states, barring eight from M.P., seven from Bihar, six from Maharashtra, four from H.P., two from Gujarat and one from U.P.

According to census 2011, among 637 districts, the lowest UCSR was shown by Pithoragarh(724) from Uttarakhand and ten districts had UCSR below 800. These included four from Haryana, three from J&K, two from Uttarakhand and one from Gujrat. The number of districts showing UCSR 900 or below was 239 in 2011. These were mostly from the northern and north western states, barring seven from Odisha, three each from Arunachal Pradesh and Jharkhand and one from Sikkim. The district Anjaw from Arunachal Pradesh recorded the highest UCSR (1128), followed by North and Middle Andaman district (1110), having UCSR even above 1100 in 2011. There were seven districts, registering UCSR above 1000, of which three were from Arunachal Pradesh, two each from Nagaland and Meghalaya. There were 133 districts, having UCSR 950 or above. Mostly these belonged to the north eastern, eastern and southern states, except three from Bihar, two from J&K and one each from M.P. and U.P.

Correlation analysis of district level CSR of India (2011 census):

It is evident from **Table 5** that, among socio-cultural variables, SC (per cent) and OTHRS (per cent) were negatively correlated to a significant extent, while ST (per cent) per cent had a significant positive correlation, with TCSR, RCSR and UCSR of India in 2011. It was good to see that, UCSR had significant positive correlation with all developmental variables related to literacy and work, except with the percentage of other workers. Among literacy-related variables, only literacy sex ratio had a significant positive correlation with TCSR, RCSR and UCSR, but surprisingly, the percentage of literates and male literacy rate had a significant negative correlation with TCSR and RCSR. All work-related variables, except the percentage of other workers, correlated positively to a significant extent, with TCSR, RCSR and UCSR.

Table 5: Correlation summary of district level CSR of India (2011)

Variables	2011		
	TCSR	RCSR	UCSR
SC (per cent)	(0.35***)	(0.35***)	(0.33***)
ST (per cent)	0.41***	0.41***	0.38***
OTHRS (per cent)	(0.35***)	(0.34***)	(0.31***)
LIT (per cent)	(0.10*)	(0.13*)	0.17**
W (per cent)	0.34***	0.33***	0.28***
OW (per cent)	-0.07	-0.03	0.07
M LITRT	(0.17**)	(0.21**)	0.11*
F LITRT	-0.03	-0.04	0.23**
MWPRT	0.21**	0.24**	0.12*
FWPRT	0.37***	0.34***	0.44***
LSR	0.29***	0.26***	0.43***
WPSR	0.38***	0.35***	0.46***
OWSR	0.47***	0.35***	0.46***
URBN (per cent)	(0.18**)	NA	NA

Note: ***, **, and * significant 1per cent, 5per cent and 10per cent levels. Figures in parentheses indicate negative t-values. NA: Not applicable.

Analysis of District level TCSR of India (2011 census)

It is clear from **Table 6** that, among socio-cultural variables, SC (per cent) and OTHRS (per cent) had a significant negative impact, while ST (per cent) had a significant positive impact on TCSR. Among literacy-related developmental variables, only literacy sex ratio had a significant positive impact; and female literacy rate had a positive impact in the case of ST (per cent) and OTHRS (per cent) while a significant positive one in the case of SC (per cent). However, the percentage of literates influenced TCSR negatively and male literacy rate had a significant negative impact on TCSR in 2011. Among work-related variables, the percentage of workers, male work participation rate, female work participation rate, work participation sex ratio and other workers sex ratio influenced TCSR positively to a significant extent, while the percentage of other workers showed significant positive impact only in the first and third type in the case of ST (per cent) and OTHRS (per cent) but not so in the case of SC (per cent). The impact of the percentage of urbanization was significant negative.

Analysis of District level RCSR of India (2011 census)

It is observed from **Table 7** that, the impact of SC (per cent) and OTHRS (per cent) was significant negative, while that of ST (per cent) was significant positive on RCSR in 2011. Among literacy-related developmental variables, only literacy sex ratio had a significant positive impact on RCSR, while male literacy rate and the percentage of literates had significant negative impact; and female literacy rate had no significant positive or negative rate on RCSR. Among work-related developmental variables, male and female work participation rate, percentage of workers, work participation sex ratio and other workers sex ratio RCSR very positively, but only percentage of other workers had no significant positive or negative impact on RCSR in 2011.

Table 6: Regression of determinants of District level TCSR of India (2011)

TYPE - 1								
Variables	Sched.Castes		Variables	Sched. Tribes		Variables	OTHERS	
	Coeff 2011	t stat		Coeff 2011	t stat		Coeff 2011	t stat
TSC (%)	-1.43	(8.52***)	TST (%)	0.49	7.74***	TOTHRS (%)	-0.44	(5.50***)
TLIT (%)	-0.10	-0.55	TLIT (%)	-0.16	-0.88	TLIT (%)	-0.21	-1.08
TW (%)	1.54	6.73***	TW (%)	1.01	4.01***	TW (%)	1.20	4.58***
TOW (%)	0.27	0.71	TOW (%)	0.84	2.22**	TOW (%)	0.90	2.28**
URBN%	-0.35	(2.79***)	URBN%	-0.38	(3.01***)	URBN%	-0.37	(2.92***)
Adj. R Sq.	0.21		Adj. R Sq.	0.20		Adj. R Sq.	0.16	
TYPE - 2								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
TSC (%)	-1.71	(10.34***)	TST (%)	0.56	9.70***	TOTHRS (%)	-0.52	(7.31***)
TMLITRT	-0.56	(2.77***)	TMLITRT	-0.54	(2.62***)	TMLITRT	-0.64	(3.08***)
TMWPRT	2.68	7.85***	TMWPRT	1.99	5.80***	TMWPRT	1.88	5.28***
TOW (%)	-0.36	-0.92	TOW (%)	0.38	0.97	TOW (%)	0.60	1.49
URBN%	-0.33	(2.74***)	URBN%	-0.34	(2.79***)	URBN%	-0.37	(2.96***)
Adj. R Sq.	0.24		Adj. R Sq.	0.22		Adj. R Sq.	0.18	
TYPE - 3								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
TSC (%)	-1.33	(7.76***)	TST (%)	0.46	6.95***	TOTHRS (%)	-0.39	-4.73
TFLITRT	0.27	1.75*	TFLITRT	0.18	1.47	TFLITRT	0.19	1.19
TFWPRT	0.93	6.59***	TFWPRT	0.65	4.06***	TFWPRT	0.82	5.05***
TOW (%)	0.34	0.92	TOW (%)	0.80	2.13**	TOW (%)	0.83	2.16**
URBN%	-0.40	(3.23***)	URBN%	-0.41	(3.32***)	URBN%	0.41	(3.19***)
Adj. R Sq.	0.22		Adj. R Sq.	0.20		Adj. R Sq.	0.17	
TYPE - 4								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
TSC (%)	-1.06	(6.62***)	TST (%)	0.33	5.22***	TOTHRS (%)	-0.24	(3.14***)
TLSR	0.09	5.90***	TLSR	0.09	5.98***	TLSR	0.09	5.90***
TWPSR	0.02	2.58***	TWPSR	0.01	1.49	TWPSR	0.02	2.26**
TOWSR	0.12	5.49***	TOWSR	0.12	5.27***	TOWSR	0.13	5.7***
URBN%	-0.43	(5.51***)	URBN%	-0.37	(4.7***)	URBN%	-0.35	(4.46***)
Adj. R Sq.	0.33		Adj. R Sq.	0.31		Adj. R Sq.	0.29	

Note: Figures in parentheses indicate absolute negative t-values; ***, ** and * significant 1 per cent, 5 per cent and 10 per cent levels respectively.

Table 7: Regression of determinants of District level RCSR of India (2011)

TYPE - 1								
Variables	Sched.Castes		Variables	Sched. Tribes		Variables	OTHERS	
	Coeff 2011	t stat		Coeff 2011	t stat		Coeff 2011	t stat
RSC (%)	-1.29	(8.07***)	RST (%)	0.50	8.06***	ROTHRS (%)	-0.47	(5.93***)
RLIT (%)	-0.45	(2.54**)	RLIT (%)	-0.45	(2.54**)	RLIT (%)	-0.51	(2.82***)
RW (%)	1.53	7.54***	RW (%)	1.08	4.89***	RW (%)	1.23	5.43***
ROW (%)	0.08	0.25	ROW (%)	0.48	1.50	ROW (%)	0.58	1.75*
Adj. RSq.	0.20		Adj. RSq.	0.20		Adj. RSq.	0.16	
TYPE - 2								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
RSC (%)	-1.53	(9.84***)	RST (%)	0.55	9.58***	ROTHRS (%)	-0.52	(7.17***)
RMLITRT	-0.95	(4.98***)	RMLITRT	-0.83	(4.26***)	RMLITRT	-0.95	(4.77***)
RMWPRT	2.66	8.64***	RMWPRT	2.01	6.47***	RMWPRT	1.95	6.01***
ROW (%)	-0.51	-1.61	ROW (%)	0.06	0.18	ROW (%)	0.21	0.65
Adj. RSq.	0.24		Adj. RSq.	0.23		Adj. RSq.	0.18	
TYPE - 3								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
RSC (%)	-1.23	(7.50***)	RST (%)	0.51	7.80***	ROTHRS (%)	-0.47	-5.75
RFLITRT	0.01	0.01	RFLITRT	-0.07	-0.48	RFLITRT	-0.08	-0.50
RFWPRT	0.91	7.03***	RFWPRT	0.63	4.44***	RFWPRT	0.77	5.34***
ROW (%)	-0.05	-0.15	ROW (%)	0.35	1.04	ROW (%)	0.43	1.27
Adj. RSq.	0.18		Adj. RSq.	0.19		Adj. RSq.	0.15	
TYPE - 4								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
RSC (%)	-1.03	(6.51***)	RST (%)	0.41	6.49***	ROTHRS (%)	-0.36	(4.59***)
RLSR	0.07	4.93***	RLSR	0.07	4.98***	RLSR	0.08	5.20***
RWPSR	0.04	5.18***	RWPSR	0.03	3.43***	RWPSR	0.04	4.27***
ROWSR	0.08	4.33***	ROWSR	0.07	3.95***	ROWSR	0.08	4.10***
Adj. RSq.	0.26		Adj. RSq.	0.26		Adj. RSq.	0.23	

Note: Figures in parentheses indicate absolute negative t-values; ***, ** and * significant 1 per cent, 5 per cent and 10 per cent levels respectively.

Table 8: Regression of determinants of District level UCSR of India (2011)

TYPE - 1								
Variables	Sched.Castes		Variables	Sched. Tribes		Variables	OTHERS	
	Coeff 2011	t stat		Coeff 2011	t stat		Coeff 2011	t stat
USC (%)	-1.92	(7.77***)	UST (%)	-7.77	7.48***	UOTHR (%)	-0.54	(5.43***)
ULIT (%)	1.16	4.04***	ULIT (%)	4.04	2.63***	ULIT (%)	0.87	2.90***
UW (%)	3.88	7.88***	UW (%)	7.88	6.29***	UW (%)	3.58	6.85***
UOW (%)	-2.54	(5.77***)	UOW (%)	-5.77	(4.04***)	UOW (%)	-2.10	(4.47***)
Adj. R Sq.	0.20		Adj. R Sq.	0.20		Adj. R Sq.	0.17	
TYPE - 2								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
USC (%)	-2.55	(9.83***)	UST (%)	1.03	12.11***	UOTHR (%)	-0.95	(9.48***)
UMLITRT	0.84	2.41**	UMLITRT	0.03	0.08	UMLITRT	0.13	0.37
UMWPRT	3.21	5.47***	UMWPRT	4.07	7.01***	UMWPRT	3.42	5.74***
UOW (%)	-2.20	(4.05***)	UOW (%)	-2.39	(4.54***)	UOW (%)	-1.94	(3.57***)
Adj. R Sq.	0.15		Adj. R Sq.	0.21		Adj. R Sq.	0.14	
TYPE - 3								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
USC (%)	-1.49	(6.01***)	UST (%)	0.39	4.14***	UOTHR (%)	-0.23	(2.13**)
UFLITRT	0.77	3.57***	UFLITRT	0.63	2.81***	UFLITRT	0.75	3.29***
UFWPRT	2.73	9.64***	UFWPRT	2.49	7.72***	UFWPRT	2.84	8.85***
UOW (%)	-0.82	(2.67***)	UOW (%)	-0.61	(1.91*)	UOW (%)	-0.78	(2.40**)
Adj. R Sq.	0.25		Adj. R Sq.	0.23		Adj. R Sq.	0.21	
TYPE - 4								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
USC (%)	-1.63	(6.87***)	UST (%)	0.50	5.41***	UOTHR (%)	-0.32	(3.07***)
ULSR	0.15	7.64***	ULSR	0.16	7.86***	ULSR	0.15	7.21***
UWPSR	0.11	4.00***	UWPSR	0.10	3.49***	UWPSR	0.11	4.04***
UOWSR	-0.01	-0.29	UOWSR	-0.04	-0.90	UOWSR	-0.02	-0.46
Adj. R Sq.	0.33		Adj. R Sq.	0.31		Adj. R Sq.	0.29	

Note: Figures in parentheses indicate absolute negative t-values; ***, ** and * significant 1 per cent, 5 per cent and 10 per cent levels respectively.

Analysis of District level UCSR of India (2011 census)

It is evident from **Table 8** that, among socio-cultural variables, SC (per cent) and OTHRS (per cent) had a significant negative impact, while ST (per cent) had a significant positive impact on UCSR in 2011. Among literacy-related developmental variables, the percentage of literates, female literacy rate and literacy sex ratio influenced UCSR very positively in all three cases, but male literacy rate affected very positively only in the case of SC (per cent). Among work-related developmental variables, the percentage of workers, male work participation rate, female work participation rate and work participation sex ratio affected UCSR positively to a significant extent. Surprisingly, the percentage of other workers had a significant negative impact and the negative impact of other workers sex ratio was not significant on UCSR.

Discussions and Conclusion:

The district-level analysis exhibits a particular pattern regarding the level of TCSR, RCSR and UCSR among the states of India according to census 2011. It clearly shows that mostly, the northern and north western states showed low CSR, whereas, the north eastern, eastern and southern states exhibited high CSR, barring a few exceptions.

The impact of the socio-cultural variables on CSR was noteworthy at the district level. The significant negative correlation of SC% and OTHRS% and their strong negative impact on CSR of all three types implies that scheduled castes and upper castes are more patriarchal in nature; and have strong son preference and a negative attitude towards a girl child, which may result in daughter aversion through sex-selective abortions. In contrast, ST%, had a very positive correlation and had a significant positive impact on CSR of all three types, because scheduled tribes are on the periphery of a patriarchal system and female labour is regarded as a valuable source of income and so they have a positive attitude towards a girl child. Thus, individually, socio-cultural variables had a uniform impact, either positive or negative, on both RCSR and UCSR. It shows a strong cultural system prevailing in India.

However, in the case of the correlation and an impact of the developmental variables, dichotomy was evident between rural and urban areas. Due to the relatively higher economic and social development in the urban areas as compared to the rural areas, a greater number of developmental variables exhibited highly positive correlation with and significant positive impact on UCSR than in the case of RCSR.

Among literacy-related developmental variables, all four variables, i.e., percentage of literates, male literacy rate, female literacy rate and literacy sex ratio had a very positive correlation with and a significant positive impact on UCSR. It shows that, the spread of literacy and the relatively higher level of education in the urban areas, will create a positive attitude among both men and women, towards a girl child and that will help to improve UCSR in future. In contrast, only one among four literacy-related variables, i.e. literacy sex ratio had a very positive correlation with and a significant positive impact on RCSR. It suggests that, it is not only encouraging female literacy but more importantly, by ensuring that, increase in the female literacy rate is more than increase in the male literacy rate, i.e., by reducing a gap between male and female literacy, women in rural areas will develop a positive attitude towards a girl child, which in turn will result in an improvement in RCSR. On the contrary, male literacy rate had very negative correlation with and a significant negative impact on RCSR, which implies that, literate rural men remain patriarchal and continue to have a negative attitude towards a girl child. Thus, it can be concluded that, RCSR can be improved, only if the rate of increase in female literacy is higher than that of male literacy, which is a reflection of the relative status of women compared to men.

Among work-related variables, it was observed that, except percentage of other workers, all other work-related variables like percentage of workers, male work participation rate, female work participation rate, work participation sex ratio, had significant positive correlation with and very positive impact on all three types of CSR. It implies that, more work opportunities for men and women in rural areas will lead to more acceptance of a daughter and so it will have a positive impact on RCSR and UCSR. The variable other workers sex ratio had significant positive impact on RCSR, but not so in the case of UCSR. Therefore, by creating

more non-agricultural jobs for women in relation to men in rural areas, RCSR can be improved. The variable percentage of urbanization had significant negative impact on TCSR.

It can be concluded that, by encouraging female education, creating employment for both men and women and non-agricultural jobs in rural areas, especially for women, CSR of India can be improved. Coupled with these measures, legal measures such as banning female feticide, protecting women against violence and giving them property rights, effectively implementing Dowry Prohibition Act, will be in the interest of women in general and girls in particular. Government schemes for girls to educate them and the role of media in creating awareness about the value of a girl child as well as a positive attitude towards her, will have far-reaching impact on bringing gender balance and gender equality in the society.

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Prevalence of Consanguineous Marriages and its Determinants in Tamil Nadu: An Analysis of NFHS-4 Data

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Abstract

Marrying close blood relatives (consanguineous marriages) is a long held practice in southern states of India, more particularly in Tamil Nadu. Such practice is almost usually treated as a taboo in north Indian kinship system, though there are examples in the ages of Mahabharatha. But several studies conducted around the World and in India have established that consanguineous marriages to a large extent result into adverse reproductive outcomes such as spontaneous abortions, miscarriages and still births and even under 5 & under 18 mortality rates, besides genetic abnormalities. In spite these risks, still in southern states of India (except in Kerala) these types of marriages are used to be celebrated to a sizeable extent. Keeping this scenario in mind, in this paper, the researcher has made an attempt to examine the prevalence of consanguineous marriages in Tamil Nadu state and what are the major factors that are likely to influence (or determinants) such marriages. To fulfil these objectives, data is drawn from the National Family Health Survey-4 (2015-16) for Tamil Nadu state. The sample consists of 22,614 currently married women and living with (present) husband. Overall, about 32.8 per cent of the marriages reported to be consanguineous type (marrying with close blood relatives). Cross-tabular analysis results showed that the prevalence of consanguineous marriages noted to be conspicuously decreasing with calendar year of marriage (from 1990 to 2015), and also with an increase in their educational level and wealth index of the households. On the other hand, such marriages are noted as lower among those who are residing in urban areas, have faith in Islam religion followed by the Christianity and also among those who belonged to Scheduled Castes / Tribes than their respective counterparts. Logistic regression analysis reiterated that the likelihood of consanguineous marriages is pertinently lower among those who got married during 1996-2005 and 2006-2015 ($p < 0.001$ for both), residing in urban areas ($p < 0.001$), belonged to the Christianity ($p < 0.001$) and non-SC/ST communities ($p < 0.001$)

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than their respective counterparts. On the other hand, while women who have studied up to higher secondary school & above level have exhibited lesser odds of marrying close blood relatives ($p < 0.01$), women who have completed secondary school education have showed a positive likelihood of consanguineous marriages ($p < 0.10$) as against to those who are illiterates. Probable causes / reasons for such marriages and policy recommendations are presented in a crisp manner.

Keywords: Consanguineous Marriages, NFHS-4, Tamil Nadu, Logistic Regression, Determinants.

Introduction

In south Indian states, marrying blood (close) relatives, which is popularly known as consanguineous marriage (or consanguinity), is used to be a long time socio-cultural practice. Tamil Nadu is pioneering in adhering to such practice than other states of south India, which the people believe a Dravidian preferential marriage pattern. Among such marriages, the most preferred ones are between uncle-niece (marrying mostly younger brother of mother) and cross-cousin marriages (either on mother's side or father's side) depending upon their availability of groom at the time of marriage to the brides. But such practices are almost treated as a taboo in the north Indian kinship system, though there are examples in the ages of *Mahabharatha* (Audinarayana, 1990).

Several studies carried out by health care providers, Genetic Specialists and Population Scientists argued and empirically supported that such marriages would result increased genetic disorders to the offspring, besides adverse reproductive outcomes such as spontaneous abortions, miscarriages and still births and even under 5 and 18 mortality rates (for details see Bittles et al., 2001; Hamamy, 2012; Kuntla et al., 2013; Fareed et al., 2017; Prakasam, 2018a). In spite of these consequences, consanguineous marriages are preferred among people mainly due to socio-cultural reasons such as obligation to marry such mates, besides the influence / persuasion by parents / relatives. Other reasons include couples' stability in marriage due to higher compatibility between husband and wife who share the same social relationships after marriage as before marriage as well as the compatibility between the couple and other family members. It is also argued in consanguineous marriages,

wife (newly married bride) will have better relationship with her in-laws due to higher women's status / autonomy, besides daughter-in-law will have better relationship with her in-laws and thereby, they would support her in time of need. There is a general belief that marrying within the family reduces the possibilities of hidden uncertainties in health and financial issues and strengthens family ties and enforces family solidarity, in addition preferring to keep the property within the family by wealthy landlords. Further, premarital negotiations regarding financial matters of marriage are more easily taken care as both the families know well about their economic status (prior to marriage) and in fact, at times the cost will be minimized / much less. Moreover, wife's parents prefer to have their daughter living nearer to them and also to enjoy the presence of their grandchildren (Audinarayana, 1990; Bittles, 2001; Hamamy, 2012).

Earlier Research on Magnitude of Consanguineous Marriages and its Correlates

Few localised micro-level studies conducted in Tamil Nadu have come out with the conclusion that consanguineous marriages are most preferred ones and the magnitude of such marriages range somewhere between 25–50 per cent (Rao and Inbaraj, 1977; Rao, 1983; Richard, 1995; Prakasam, 2018b). The analysis of NFHS-1 data for Tamil Nadu by Krishnamoorthy and Audinarayana (2001) highlighted that about 46.5 per cent of marriages of the currently married women (aged 15-49) are consanguineous type. Another large-scale study, the India Human Development Survey (IHDS), 2004-2005 also showed that the magnitude of consanguineous marriages among the women aged 15-49 in Tamil Nadu is 38 per cent (Kuntla et al., 2013).

Some of the studies have tried to examine the associations or correlations between selected background factors and the prevalence / magnitude of consanguineous marriages. The study by Rao and Inbaraj (1977) and Rao (1983) in Tamil Nadu and Audinarayana in Andhra Pradesh (2000) have found that there is a high incidence of consanguineous marriages among the Scheduled Castes (who are said to be lower in their socio-economic status) and also to some extent among the Most Backward and Backward Castes than those who belonged to Forward Castes (socio-economically better off). Audinarayana and Krishnamoorthy's (2000) analysis of NFHS-1 data for four south Indian states revealed that the magnitude of

consanguineous marriages appeared to be decreasing with an increase in their year of marriage and level of education. On the other hand, such magnitude is noted to be higher among those who are residing in rural areas as against in urban areas, belonged to Scheduled Castes / Tribes (SC/STs) followed by non-SC/ST Hindus as against Muslims and the lowest prevalence is found among the non-SC/ST Christians. The analysis of all India IHDS, 2004-05 data by Kuntla et al. (2013) highlighted that the occurrence of consanguineous marriages is higher among Muslims as against the Hindus and other religious groups like Sikhs, Jains, etc. Likewise, such marriages are observed to be higher among those who belonged to Other Backward Castes and Scheduled Castes than those belonged to Scheduled Tribes and other communities. Contrary to the expectation, such prevalence is noted to be higher among those who are relatively younger in age (25-34 years) as against to those who are in the age group of 35 years & above, and also among those who are residing in urban areas as against those dwelling in rural areas. On the other hand, the analysis also indicates that a larger proportion of less educated women and belonging to households of poor and middle economic status got married to their blood relatives compared to women with higher education and belonging to rich economic status households. The analysis of NFHS-4 data for Karnataka by Prakasam (2018a) illustrated that the prevalence of consanguinity appears to be decreasing with an increase in women's education and wealth index of the households. On the other hand, such marriages tend to be higher among those who are living in rural areas as against in urban areas and also among those who are adhering to Hindu religion in comparison to those who have faith in other religions including Islam and Christianity. However, the magnitude of consanguineous marriages didn't vary much across the current age of women and caste background. Similarly, Prakasam's (2018b) micro-level study in Tamil Nadu showed that the magnitude of consanguinity has significantly decreased with an increase in women's educational level, whereas such marriages are noted as higher among those living in rural areas as against to those residing in urban areas. But in this study too, the extent of consanguinity didn't vary much across the current age of women and also across their religious beliefs. Taking into the stock of these earlier researches, the researcher planned this paper with the following objectives.

Objectives:

1. To study the magnitude and patterns (type) of consanguineous marriages of the currently married women in Tamil Nadu,
2. To comprehend the differentials, if any, exists in the magnitude of consanguineous marriages of the currently married women across their selected background characteristics in Tamil Nadu, and
3. To identify the principal determinants of consanguineous marriages of the currently married women in Tamil Nadu.

Data and Methods

Data for this study is drawn from the National Family Health Survey, 4 (NFHS-4), Tamil Nadu State, which was carried out during 2014-15 (IIPS and ICF, 2017). In this survey, 28,820 women aged 15-49 have been interviewed from 26,033 sample households. From this data set, information about 'whether the woman is related to current husband prior to marriage' and 'if yes, type of relationship' is considered for analysis in this paper. In response to these questions, in all about, 22,614 currently women provided information. Data related to these women only analysed here excluding the missing cases for some variables (details are provided in the Tables).

Description of the Variables

Dependent Variable: The dependent variable considered here is 'whether woman married a blood relative or not'; in other words whether the woman's marriage is 'consanguineous type or not'. As stated earlier, out of the 22,614 sample women who provided information about the type relative they got married. These include close relatives such as 'First Cousin on Father's side', 'First Cousin from Mother's side', 'Second Cousin', 'Uncle', 'Other Blood relative', 'Brother-in-law' and 'Other non-Blood Relative'. Of these, in this paper, the data related to those marriages with first five types of relatives (7424 cases) are treated as 'consanguineous marriages'. Thus, those marriages with last two types of relatives (216 cases) have been merged with non-consanguineous marriages as their exact nature of relationship is not clearly known (for details see Table 1).

Independent Variables: The independent (explanatory) variables taken into consideration here are place of residence, year of marriage, religion, caste / community background,

educational level of women and wealth index of the households. The details of these variables are mostly self explanatory, except in the case of wealth index of the households (see table 2). In all the four rounds of NFHS, it is the usual practice to compute the wealth index of the households in which the respondents are residing at the time of survey. In NFHS-4, *wealth index of households* has been computed based on 33 household assets and housing characteristics. For this purpose, each household asset is assigned a weight (factor score) generated through principal components analysis, and the resulting asset scores are standardized in relation to a normal distribution with a mean of zero and standard deviation of one. Each household is then assigned a score for each asset, and all these individual scores are summed for each household, and then the sample women are individually ranked according to the score of the household in which they reside. The sample women is then divided into quintiles i.e., five groups with an equal number of individuals (20 percent) in each at national level, though this is not necessarily true at the state level. For the present analysis, this variable is slightly modified into three categories, viz., merging the 1st & 2nd quintiles as 'Poor' (i.e., Poorest and Poorer as per NFHS-4), 3rd quintile as 'Middle' and combining 4th & 5th quintiles as 'Rich' (i.e., Richer and Richest as per NFHS-4).

With regard to the analysis of data, firstly, the background characteristics as well as the prevalence / patterns of consanguineous marriages are computed through frequency tables. The associations between the selected background characteristics and 'consanguineous marriages or not' are examined making use of the cross-tabular analysis with Chi-square test of significance. Finally, the binary logistic regression analysis is adopted to identify the principal factors that are likely to determine / influence the tendency to marry (close) blood relatives (consanguineous marriages). IBM SPSS software (Version 20.0) is employed to carry out all these analyses.

Results

Prevalence and Patterns of Consanguineous Marriages

As stated earlier, for the present paper, women who got married close blood relatives only are treated as 'consanguineous marriages'. Among the total sample women of Tamil Nadu, slightly less than one-third of them (32.8%) reported to be married as consanguineous type (panel 1 of Table 1). Of those who entered into consanguineous marriages (panel 2), the share of marriages with 'first cousin from mother's side' is relatively higher (41%) closely

followed by 'first cousin on father's side (33%). Marrying uncle (mother's brother, most preferred one in Tamil Nadu) constitute about 11 per cent followed by other blood relatives (9%) and second cousin. Compared to the figures of NFHS-1 (1992-93) of Tamil Nadu (Krishnamoorthy and Audinarayana, 2001), there is a substantial decline in overall percentage of consanguineous marriages in 2014-15 (NFHS-4), i.e. from 46.5% to 32.8% (-41.8%). Another notable point here is that while the percentage of marriages with first cousin on father's side is higher in NFHS-1 (29.5%), such place goes to marriages with first cousin on mother's side in NFHS-4 (40.7%), were as the second place is reversed in these regard between NFHS-1 and NFHS-4 (24.2% for first cousin from mother's side as against 32.8% for first cousin from father's side). On the other hand, in the case of other three types of consanguineous marriages, the figures are relatively higher in the NFHS-1 (17.6, 15.7 and 13.4%, respectively for 'other blood relatives', uncle and second cousin). However, it is conspicuous to note that while, the percentage of those married 'other blood relatives' is higher as against the other two types of marriages in NFHS-1, the percentage of those married uncle is higher in NFHS-4 as against the other two type of consanguineous marriages under consideration.

Table 1: Prevalence / Patterns of Consanguineous Marriages in Tamil Nadu

Prevalence / Type of Consanguineous Marriages	Per Cent	Frequency
Prevalence of Consanguineous Marriages		
No	67.2	15190
Yes	32.8	7424
Total	100.0	22614
Type of Consanguineous Marriage		
First Cousin on Father's Side	32.8	2436
First Cousin on Mother's Side	40.7	3023
Second Cousin	6.4	473
Uncle	11.0	817
Other Blood Relatives	9.1	675
Total	100.0	7424

Background Characteristics of the Sample Women

Among the sample women of Tamil Nadu (columns 2-3, Table 2), around 56 per cent of them are residing in rural areas and the remaining of them (44%) living in urban areas. A simple

majority of them got married in the calendar years of 1995 or before (36%), whereas about 31.5 and 33 per cent got married during 1996–2005 and 2006–2015, respectively. An overwhelming percentage of sample women are Hindus (90%) and just about 5 per cent each of them are adhering to Islam and Christianity, respectively. A little over 30 per cent of the sample women in Tamil Nadu belonged to Scheduled Castes / Tribes (SC/STs) and the remaining are from non-SC/ST communities (i.e., Most Backward, Backward and Forward Castes / Communities). Around 21 per cent of sample women have no education (Illiterates), whereas more than half of them (52%) have completed secondary school education (6-10 standards). Conversely, 14 and 13 per cent of them, respectively have reported to be studied up to primary school level (1-5 standards) and higher secondary school and above (11th standard & above). While a little over half of them (51%) observed to be living in households that are categorised as ‘Rich’ in terms of wealth index, 19 per cent and 30 per cent of them, respectively belonged to households that are categorised as ‘Poor’ and ‘Middle’ on the basis wealth index.

Differentials in the Magnitude of Consanguineous Marriages across Selected Background Characteristics

Information provided in Table 2 (columns 4-8), by and large, shows that the magnitude / prevalence of consanguineous marriages vary conspicuously across the selected background characteristics of the respondents. For example, from panel 1, it can be seen that the percentage of respondents who married their blood relatives (consanguineous type) is noted as higher among those who are residing in rural areas as against their urban counterparts (36% vs. 29%). It is conspicuous to note that (panel 2) the magnitude of consanguineous marriages appears to be consistently decreasing with calendar year of marriage (from 36.7% in 1995 or before to 31.9 in 1996-2005 and then to 29.2% in 2015). From panels 3 and 4, it is evident that while the percentage of consanguineous marriages reported as fairly higher among those who belonged to Hindu religion (34%) as against to those who are adhering to Islam and Christianity religious faiths (29% and 21%, respectively), such magnitude is higher among those who are from SC / ST communities as against those belonged to non-SC/ST communities (37% vs. 31%). Another noteworthy result here is that (panel 5) the prevalence of marrying blood relatives has decreased with an increase in their educational level (from

36.7% for no education to 25% for those who completed higher education). Likewise, there seems to be (panel 6) a consistent decrease in the prevalence of marriages with an increase in wealth index of the households (from 36.0% for those who belonged to households of 'poor' wealth quintile to 31% for those who belonged to households of 'rich' wealth quintile). Further, it is striking to note that the Chi-square test results in all these regard have been turned out as highly significant ($p < 0.001$).

Table 2: Percentage Distribution of Background Characteristics of Women and Consanguineous & Non-Consanguineous Marriages by Selected Background Characteristics, Tamil Nadu

Selected Background Characteristics of Women	%	N	Consanguineous Marriages		Non-Consanguineous Marriages		χ^2 - Value; Sig. Level
			%	Fre.	%	Fre.	
Place of Residence							
Rural	55.7	12602	36.0	4531	64.0	8071	126.085; 0.001
Urban	44.3	10012	28.9	2893	71.1	7119	
Year of Marriage							
1995 or before	35.8	7938	36.7	2912	63.3	5026	98.540; 0.001
1996 – 2005	31.5	6994	31.9	2232	68.1	6994	
2006 – 2015	32.7	7250	29.2	2120	70.8	7250	
Religion							
Hindu	90.3	20240	33.7	6881	66.3	13559	83.323; 0.001
Muslim	4.9	1103	29.0	320	71.0	1103	
Christian	4.8	1062	20.8	221	79.2	1062	
Caste							
SC / ST	69.3	6931	36.6	2535	63.4	4396	62.888; 0.001
Non-SC/ST	30.7	15619	31.2	4873	68.8	10746	
Educational Level							
No Education	20.6	4648	36.7	1706	63.3	2942	110.978; 0.001
Primary	14.2	3222	33.4	1075	66.6	2147	
Secondary	52.0	11754	33.1	3889	66.9	7865	
Higher	13.2	2990	25.2	754	74.8	2236	
Wealth Index of Households							
Poor	18.9	4282	36.0	1541	64.0	2741	126.085; 0.001
Middle	30.1	6881	34.6	2355	65.4	4456	
Rich	51.0	11521	30.6	3528	69.4	7993	
Total	100.0	22614	32.8	7424	67.2	15190	

Note: 432, 9 and 64 cases are missing for Year of Marriage, Religion and Caste, respectively. %s & Frequencies for those who got married consanguineous and non-consanguineous types are computed horizontally for each category of the Background Characteristics of Women.

Results Based on Logistic Regression Analysis

Binary logistic regression analysis (Table 3) reiterated that, controlling for the other background characteristics under consideration, the likelihood of consanguineous marriages is conspicuously lower among those who are residing in urban areas as against to those living in urban areas (OR=0.775; $p<0.001$), who got married during 1996-2005 and 2006-2015 as against to those who got married 1996 and earlier (OR=0.810 and 0.719; $p<0.001$ and $p<0.001$, respectively), who belonged to Christianity as against to those adhering to Hindu religion (OR=0.583; $p<0.001$) and non-SC/ST communities compared to those from SC/ST communities (OR=0.839; $p<0.001$). Likewise, while the tendency to enter into marriage with close relatives is appeared to be significantly lower among those who studied up to higher secondary school & above as against those who have no formal education (OR=0.855; $p<0.01$), such inclination is noted as little higher among those who have completed secondary school education; however, the t-test results in this regard have turned out as significant to a lesser extent (OR=1.081; $p<0.10$). On the other hand, as expected the odds ratios of marrying close relatives are observed as lower among those who belonged to households of ‘middle’ and ‘rich’ wealth quintiles as against to those who belonged to households of ‘poor’ wealth quintile, but the t-test results in these regard didn’t turn out as statistically significant.

Table 3: Results of Binary Logistic Regression Analysis on the Extent of Consanguineous Marriages in Tamil Nadu

Explanatory Variables	Beta Coeff.	Exp (B)	Level of Sig.
Place of Residence (<i>Ref: Rural</i>)	--	1.000	--
Urban	-0.255	0.775	0.000
Year of marriage (<i>Ref: 1995 or before</i>)	--	1.000	--
1996 – 2005	-0.210	0.810	0.000
2006 – 2015	-0.329	0.719	0.000
Religion (<i>Ref: Hindu</i>)	--	1.000	--
Muslim	-0.042	0.959	0.561
Christian	-0.540	0.583	0.000
Caste (<i>Ref: SC / ST</i>)	--	1.000	--
Non-SC / ST	-0.175	0.839	0.000
Education of Women (<i>Ref: No Education</i>)	--	1.000	--
Primary	-0.051	0.950	0.308
Secondary	0.078	1.081	0.10
Higher	-0.157	0.855	0.01

Wealth Index of Households (Ref: Poor)	--	1.000	--
Middle	-0.015	0.985	0.719
Rich	-0.036	0.964	0.411
-2 Log Likelihood	27632.138		
Chi-square Value, (d.f.)	341.068, (11)		
p-value, N	0.000, 22112		

Conclusions and Discussion

The NFHS-4 (2014-15) data for Tamil Nadu state (south India) reported marrying close blood relatives (consanguineous marriages) accounted for about one-third of the all marriages among sample women, though there is some evidence that such magnitude has declined to a moderate extent in comparison to NFHS-1 (1992-93). Several studies cited under the section on 'earlier research' have corroborated that the prevalence of consanguineous marriages is much higher in Tamil Nadu at various time periods as compared to other States of India. Further, taking the year of marriage (instead of current age) into consideration, Audinarayana and Krishnamoorthy (2000) and Krishnamoorthy and Audinarayana (2001) have conclusively proved that the incidence of consanguinity in Tamil Nadu has declined over a period of time. Such finding also holds good with NFHS-4 data for Tamil Nadu as noted here. There is also a clear support for the contention that 'women have lesser tendency to marry close blood relatives with an increase in their level of education' from both localized and large-scale studies mentioned earlier. The findings of this study also suggest that women belonged to SC/ST communities and residing in rural areas are getting married close blood relatives to a higher extent than their counterparts. These findings are also corroborating with several studies carried out in Tamil Nadu as well as in India. The present study highlighted that the magnitude of consanguineous marriages is higher among the Hindus as compared to the Muslims and the Christians. While many studies supported this finding, the analysis of IHDS, 2014-15 data for all India (Kuntla et al., 2013) as well as a micro-level study in Tamil Nadu (Prakasam, 2018b) refuted it by showing higher incidence of consanguineous marriages among the Muslims than among the Hindus. In this study, economic status (wealth index of the households in the present context) tends to lowers the magnitude of consanguineous marriages among women for which there is also some support from the earlier studies carried out by Kuntla et al. (2013) and Prakasam (2018a).

At the policy front, this study emphasizes the need for imparting knowledge about the higher incidence of consanguineous marriages in Tamil Nadu and the adverse effects in terms of genetic as well as health risks associated with such marriages. Such steps may be largely taken up in rural areas and especially among those who belonged to lower socio-economic strata.

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DOMESTIC VIOLENCE AGAINST WOMEN – A STUDY FROM SUNDARBANS REGION OF WEST BENGAL

Anamika Das¹ and C M Lakshmana²

Abstract

This paper reflects the present situation of Domestic Violence against women in West Bengal in general and in Sundarbans region of South 24 Parganas district in particular. The study utilizes primary data; One Hundred Fifty-Five (155) ever-married women (15-49 years) with at least one child (0-14 years) interviewed who had ever experienced domestic violence. The result shows 44.5 percent of women experienced four types of domestic violence i.e., physical, sexual, emotional and economical violence in their married life. The most common forms of physical violence reported by the majority of the respondents are slaps, hitting, kicking, twisting arm, forcibly putting oil into mouth and throwing objects. Moreover, the intensity and incidence of domestic violence varies marginally among the victims, the worst experiences being wives of persons who have alcoholic by nature, jealousy, and extra-marital affairs. The victims of domestic violence were found to be depressed and helpless. Hence, there is an urgent need to strengthen the PWDV Act - 2005 by involving Police, Panchayat members and women organizations to provide counseling and justice on time to the victims of Domestic Violence. Further, they should boost the awareness in preventing and reducing Domestic violence at village level.

Keywords: Domestic Violence, Prevalence, Causes, Sundarbans Region, West Bengal

Introduction

Domestic Violence against Women (DVAW) is considered as universal and a public health issue that occurs in every culture and social group in society. In the early 1970s 'familial violence' began to be perceived as widespread and taking place in the context of a long patriarchal tradition of male power and sexual privilege (Elliot, 1995). Initially, public

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concern focused on the physical abuse of children by their parents and women by their husbands. However, intimate partner violence has moved to the Centre stage. In the year 1994 Cairo Conference, on “Population and Development (ICPD)” recognizes, “*Violence impact on women’s reproductive and sexual health*”. The Fourth United Nations World Conference on Women, 1995 in Beijing stated that, “*Violence against Women (VAW) is a manifestation of the historically unequal power relation between men and women*”; and the 1996 UN World Health Assembly declared, “*Violence against women as an important public health problem*”.

There is an excess of terms that are used for domestic violence, sometimes interchangeably, to describe the same phenomenon¹ (Smith, 1989). Although there is no particular profile of a victim of domestic violence, it is generally seen that the victims are usually women. A study by (Coleman et al., 2007) has revealed that, women are more likely than men to have experienced all types of intimate violence i.e., partner abuse, family abuse, sexual assault and stalking since the age of sixteen. World Health Organization’s (2013) global figures of domestic violence indicate that worldwide about one in every three (35 percent) women have experienced physical and/or sexual violence by intimate partner or non-partner, in their lifetime. Six countries such as, Bangladesh, Bolivia, the Democratic Republic of the Congo, Rwanda, Uganda, and Zambia half or more of married women (50-65 percent) reported that, they have experienced physical and/or sexual violence by their intimate partner and 64 percent of married women in the Democratic Republic of the Congo have experienced physical and/or sexual forms of intimate partner violence (Sara K. Head, 2014).

In India, domestic violence against women forms a large part of all crimes against women. (Vani S Kulkarni et al., 2013) has estimated that, cases of violence against women at home comprise over 43 percent of all crimes against women. In view of the prevalence as well as the pervasiveness of domestic violence, many researchers have attempted to assess the prevalence of spousal violence besides its causes and consequences. A study conducted by the International Clinical Epidemiologists Network (International Clinical Epidemiologists Network, 2000) found that, spousal violence is the major problem of women in India,

¹ A variety of phrases have been used to describe such violence: family violence, domestic disputes, spouse abuse, wife abuse, battered wives, battered women etc.

irrespective of age, education, social class and religion. About 40 per cent women had experienced at least one form of physical violence in their married life. Another study conducted by (Murthy, 2004) found that, numbers of family members, type of marriage and husband's education besides menstrual problems have significant influence on domestic violence. According to the National Family Health Survey (International Institute for Population Sciences, 2015-16) in India almost one-third (31 percent) of ever-married women have ever experienced spousal physical, sexual, or emotional violence by their current husband (for currently married women) or their most recent husband (for formerly married women).

Domestic Violence against Women in West Bengal

The National Crime Records Bureau (NCRB- 2013) statistics revealed that, West Bengal ranked third in crimes against women, followed by Andhra Pradesh, Uttar Pradesh and Rajasthan. The rate of incidence of domestic violence is very high in West Bengal; women in rural areas have more experiencing domestic violence than those in the urban areas. According to the recently released National Crime Record Bureau's 'Crime in India, 2020' annual report, more than 1.1 lakh cases of domestic violence were recorded across the country, with West Bengal recording the highest number at 19,962. It was followed by Uttar Pradesh with 14,454 cases and Rajasthan at 13,765 cases. In West Bengal, district South 24 Parganas has highest i.e., 3504 cases registered under cruelty by husband and relatives, among all crime against women in the district (National Crime Records Bureau, 2014). During the time span of 2005 – 2007, Sundarbans region recorded as highest cases of crime against women. In case of crimes against women, Joynagar I and II block ranks highest, followed by Kultali Block (Development and Planning Department Government of West Bengal, 2009). Hence, the present study examines the prevalence of domestic violence in Sundarbans region of south 24 Parganas district of West Bengal. As Anuradha Kapoor² said that, *“in West Bengal domestic violence is widespread and cuts across class, caste, religion, education and socioeconomic backgrounds. The home that is supposed to be the safest place for women is actually the site where they face immense violence”*.

² Anuradha Kapoor is the Founder and Director of Swayam, West Bengal. A feminist organization committed to advancing women's rights and ending gender inequality and violence against women, established in May 1995.

Objective

This study is undertaken with the aim of meeting the following objective:

To understand the present situation of Domestic Violence against women in the study area.

Data Source

The present study utilized primary data, collected from field survey conducted in six villages of two blocks of South 24 Parganas district of West Bengal with the help of local Non-Governmental Organizations (NGO) namely, Sundarban Janasramajibi Mancha³, Samadhan⁴ and Missing link Trust⁵. The Primary data was collected by using an interview schedule (*refer to see annexure-1*). Mainly, close ended and open-ended questions were asked for the data collection.

Methodology

The Data collection for the study was conducted between the periods of December, 2018 to March 2019. The present study has used purposive sampling technique to select the women who faced domestic violence in their married life. Selection of respondents carried out three stages. In the first stage, two blocks namely Kultali and Joynagar II from South 24 Parganas district has been selected purposively, as large number of incidences of domestic violence has been reported according to the data given by the NCRB. In the second stage, three villages from each block namely, Madhusudanpur, Katamari, and Baikunthapur in Kultali Block; Nalgora, Sonatikri, and Chuprijhara in Joynagar II Block selected purposively, as high

³Sundarbans Janasramajibi Mancha is a civil organization. They have worked with different rights related to the unskilled workers of the Sundarbans area, established the laws of fisheries Act 2006, the right to save lives and foods and to organize social security and social welfare for the peoples of Sundarbans region. And also, they have working to provide awareness and necessary co-operation, as well as to the community with basic rights of non-violence activities such as women and child trafficking, domestic violence against women, prevention of child marriage, and preventing illegal drinking and drinking alcohol in the area. This organization interlace with Missing Link Trust NGO.

⁴Samadhan is a Non-Governmental Organization in South 24 Parganas District. They are functioning for Child Education, Child Welfare, Child Rights, Child trafficking and Women Empowerment.

⁵ Missing Link Trust is the non-profit organization, mainly civic and social organization founded in 2015 by Leena Kejriwal. They are working for anti-trafficking campaign using art and technology to create awareness against sex trafficking. They educate and empower the most vulnerable children, women and girls in the Sundarbans through skill training such as tailoring, computer training and spoken English classes.

incidence of domestic violence is observed by local NGOs. In the third stage, random sampling method has been used for selection of households to collect the data from ever-married women (EMW) who faced domestic violence. Total 155 EMWs interviewed for the present study. The Sample size of each village is as follows: -

Table 1: Showing the Village wise Sample Size

Community Development Block Name	Village name	Sample Size
Kultali	Baikunthapur	23
	Madhusudanpur	26
	Katamari	30
Joynagar II	Nalgora	21
	Sonatikri	30
	Chuprijhara	25
TOTAL		155

Operational Definition of Dependent Variables

Following definitions are referred from the National Family Health Survey Report.

Table 2: Operational definition of different types of Domestic Violence against Women

Violence type	Respondent questions
Physical	a. throwing something, pushing, shaking b. slapping c. twisting arms, pulling hair d. punching or something that could hurt you e. kicking, dragging or beating f. choking and burning g. attacking with a knife or any sharp weapon

Sexual	<ul style="list-style-type: none"> a. trying forcefully sexual relationship with him b. unnatural sex you did not want to c. faced unwanted pregnancy
Emotional	<ul style="list-style-type: none"> a. verbally aggressive or something to humiliate in front of others b. threaten to hurt or harm you or someone close to you or commit suicide c. insult you or make you feel bad about yourself
Economical ⁶	<ul style="list-style-type: none"> a. Denial of access to food b. Denial of access to basic necessities c. Denial of access to financial security

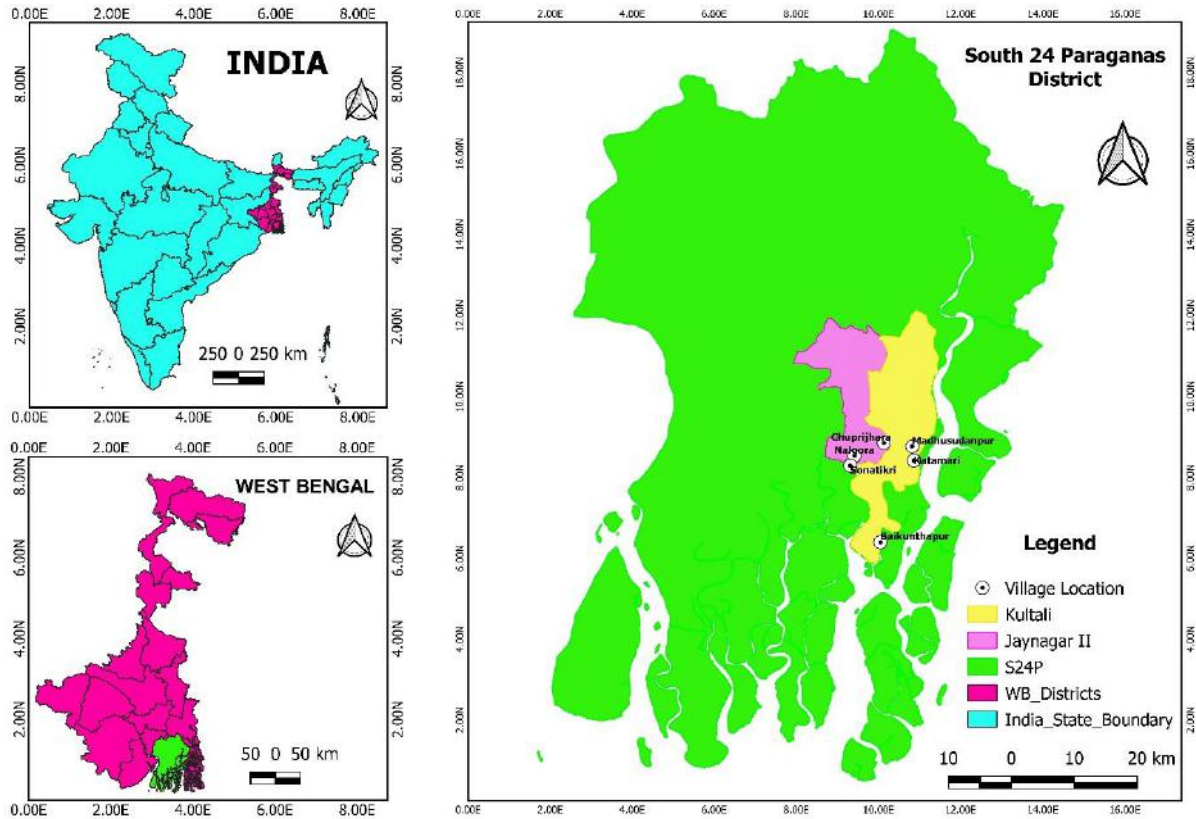
The study area and villages

The district of South 24 Parganas has been selected for the study situated between latitude 21°29'00" N to 22°33'45" N and 88°03'45" E to 89°04'50" N longitude approximately. South Twenty-Four Parganas is the largest district of West Bengal state comprising 29 C.D. Blocks and the second most populous district (8.1 million out of which, 4.1 million male and 3.9 million female populations). The highest Scheduled Caste Population of the State, located at the South-East corner of the State. The Sex Ratio of the District is 956 (No. of females per 1000 males) which is higher than the State's Sex Ratio i.e., 950. The district has a literacy rate of 77.5 percent which is higher than the State average of 76.3 percent (Census of India, West Bengal, 2011). To achieve the goal, six villages (Madhusudanpur, Katamari, Baikunthapur, Nalgora, Sonatikri, and Chuprijhara) from two blocks- namely Kultali and Joynagar II⁷ were selected purposively for the study (Fig: 1).

⁶Economic violence referred from the definition of Protection of Women from Domestic Violence Act (PWDVA, 2005).

⁷Joynagar II and Kultali are two Community Development Blocks among the 13 community development blocks of Sundarbans in South 24 Parganas.

Figure: 1 Location Map of study region of South 24 Parganas District



Source: Author extracted the above map with the help of Geographic Information System (GIS).

Results

The Table-2 shows the socio-demographic characteristics of respondents. Women who have experienced domestic violence after their marriage had the mean age of 27.3 years with the range of 15 years to 49 years. Prevalence was high in the age group of 25-29 years i.e., 45.8 percent, followed by 18.7 percent in the age group of 30-34; 18.2 percent in the age group of 20-24; 10.3 percent respondents in the age group of 35-39 years; 3.9 percent in the age group of 15-19 years and 2.6 percent in the age group of 40-44 years.

Out of 155 women, the majority of women belong to Hindu religion 127 (81.9 percent). In Hindu religion 53.5 percent women came under Scheduled Caste category, followed by 14.3 percent in general; 11.7 percent in Scheduled tribe and 2.6 percent in OBC category. On the other hand, 18.2 percent women are belonging to Muslim religion.

This study shows that, majority of respondents i.e., 27.7 percent are illiterate, followed by 27.1 percent of respondents have been studied up to higher primary level (class 6-8); 24.5 percent respondents have been studied lower primary level (class 1-5); 12.9 percent have been studied till secondary (class 9-10); very few respondents i.e., 7.1 percent have been studied up to higher secondary (class 11-12) and 0.6 percent of respondents have been studied up to graduate level. Thus, a large number of respondents are illiterate.

The finding depicts, majority of respondents are married, in these maximum respondents are home maker. It has followed by 44.8 percent respondents are separated from their matrimonial home due to domestic violence, but they have not got divorce from their husbands. Only 3 respondents, i.e., 1.9 percent of respondents got divorce by their husbands and the average number of children was two, in that majority of respondents had girl child than the boy child. The finding also revealed that, 78.7 percent of 155 respondents got married before 18 years and 65.8 percent among them are in the age of 15-17 years, followed by 12.9 percent in 12-14 years of age. 18.1 percent of respondents got married after the age of 18 years.

Out of 155 respondents, 85.8 percent are living in a joint family and 14.2 percent are living in nuclear families. Thus, a majority of respondents in the study area who are experiencing domestic violence live in a joint family. On the other hand, 80.6 percent of respondents are married through an arranged system and 19.3 percent of respondents are married through love marriage in the present study.

Table: 3 Socio-demographic characteristics of Respondents

Socio-Economic and Demographic Features	Number (%)
Total Number of Respondent	155
Age of respondent	
15-19	6 (3.9)
20-24	29 (18.2)
25-29	71 (45.8)
30-34	29 (18.7)
35-39	16 (10.3)
40-44	4 (2.6)

Mean age of Respondent	27.3 years
Religion and social composition	
Hindu	127 (81.9)
General	22 (14.3)
Scheduled caste (SC)	83 (53.5)
Scheduled tribe (ST)	18 (11.7)
Other backward class (OBC)	4 (2.6)
Muslim	28 (18.2)
Literacy Level of Respondent	
Illiterate	43 (27.7)
Class 1-5	38 (24.5)
Class 6-8	42 (27.1)
Class 9-10	20 (12.9)
Class 11-12	11 (7.1)
Graduate	1 (0.6)
Years of Schooling of Respondent	5.27 years
Marital status of the Respondent	
Divorcee	3 (1.9)
Married	83 (53.5)
Separated	69 (44.8)
Average Number of Children	2
Age at time of marriage	
12-14	20 (12.9)
15-17	102 (65.8)
18-20	26 (16.8)
21-23	2 (1.3)
24-26	5 (3.2)
Types of marriage	
Arrange marriage	125 (80.6)
Love marriage	30 (19.3)
Family Structure	
Joint family	133 (85.8)
Nuclear family	22 (14.2)

Source: Authors Calculation based on primary data.

Prevalence of Domestic violence against women

The present study found that women experienced more than one type of violence. Data shows that, 44.5 percent of women experienced four types (i.e., physical, sexual, emotional and economical violence) of violence in their married life. Almost all respondent said that they have experienced slapping, throwing something, pushing, twisting arms, pulling hair and

kicking, followed by 23.9 percent of respondents experienced choking and burning; 2.9 percent reported attacking with a knife or any sharp weapon. Husband is the main perpetrator of physical violence as reported by about 74.7 percent, followed by 14.9 percent husband and in-laws and 4.5 percent brother-in-law and sister-in-law are perpetrators of physical violence.

The analysis revealed that, almost all respondents i.e., 96.7 percent reported getting verbally aggressive or something to humiliate in front of others and getting angry of jealousy behavior when talking to other men or relatives. About 77.4 percent women reported threatening to leave or to commit suicide. Husband and mother-in-law are the main perpetrators of doing emotional violence i.e., 48.1 percent. It has also been reported that, 77.4 percent reported denial of basic needs; followed by 76.1 percent denial of access to food and 74.1 percent no control over resources and financial security and husband and in-laws are the main perpetrators of economical violence.

About 58.7 percent women are trying forcefully sexual relationship by husband; followed by 24.5 percent reported being hurt for unnatural sex and 11.6 percent faced unwanted pregnancy for sexual violence.

Table: 4 Percentage of respondents experienced types of Domestic Violence

Types of Domestic Violence	No. of respondents (%) (N=155)
One Types of Violence	4 (2.6)
Two Types of Violence	20 (12.9)
Three Types of Violence	62 (40)
Four Types of Violence	69 (44.5)

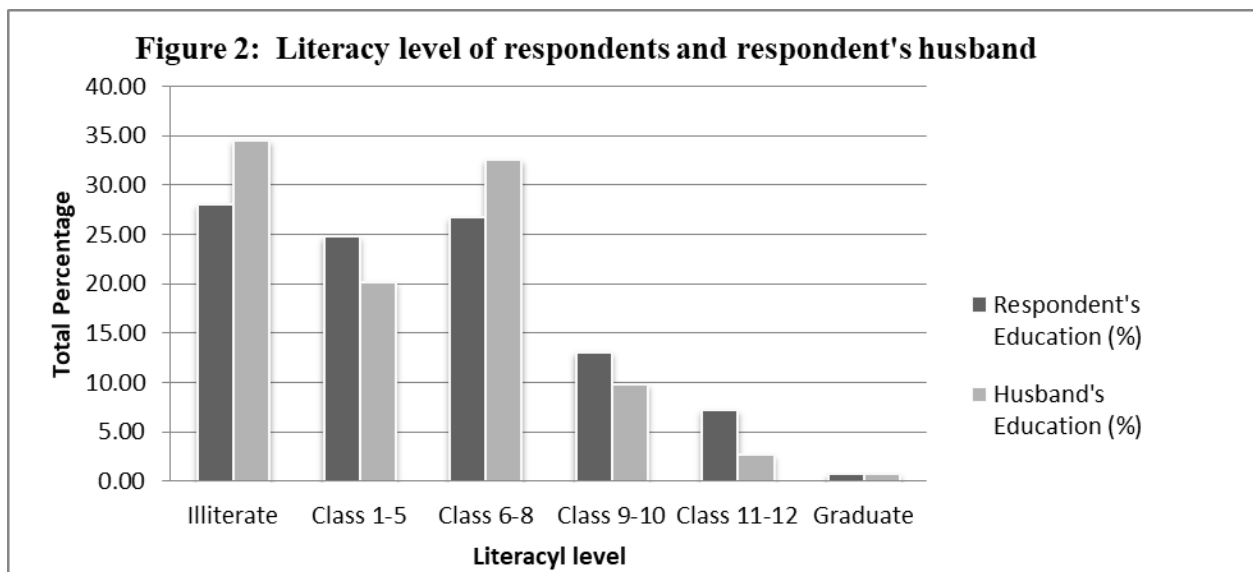
Source: Authors Calculation based on primary data.

Literacy level of respondent and respondents' husband

The figure 2 shows that, majority of respondents i.e., 27.7 per cent are illiterate, followed by 27.1 per cent of respondents have been literate up to higher primary level (class 6-8); 24.5 per cent respondents have been studied lower primary level (class 1-5); 12.9 per cent have been studied till secondary (class 9-10); very few respondents i.e., 7.1 per cent have been studied

up to higher secondary (class 11-12) and 0.6 per cent of respondents have been studied up to graduate level. Thus, a large number of respondents are illiterate.

On the other hand, if we see the husband's literacy level, it shows the similar trends. Maximum number of respondents' husbands are illiterate i.e., 34.4 per cent, followed by 32.5 per cent of respondents' husband have been literate up to higher primary level (class 6-8); 20.1 per cent respondents have been studied lower primary level (class 1-5), 9.7 per cent have been studied till secondary (class 9-10), very few respondents husband i.e., 2.6per cent have been studied up to higher secondary (class 11-12) and 0.6 per cent of respondents husband have been studied up to graduate level. It also seen that; a greater number of respondents have been studied up to secondary and higher secondary level than the husband. While comparing the mean years of education of the respondents and respondents' husbands, the present study found that the mean years of education of respondents is higher i.e., 5.3 years than husbands mean years of education i.e., 4.6 years.



Source: Authors Calculation based on primary data.

Marital status and types of Domestic violence

In the present study we have included marital status to evaluate the problem of domestic violence. In the most of the cases women are not divorced; they are staying with their husband and in-laws. And very few got divorced and staying with their parents at their natal

home. Table: 5 show the majority of married women experienced physical and emotional violence than sexual and economical violence in the study area.

Table 5: Showing Comparison between Marital Status and Domestic Violence against Women

Marital status	Types of Domestic Violence against Women (%) (N=155)			
	Physical violence	Sexual violence	Emotional violence	Economical violence
Married	81 (52.3)	51 (32.9)	77 (49.7)	49 (31.6)
Separated	68 (43.9)	39 (25.2)	67 (43.2)	65 (41.9)
Divorcee	3 (1.9)	1 (0.6)	3 (1.9)	2 (1.3)

Source: Authors Calculation based on primary data.

The above table clearly depicts that domestic violence is more in those are married housewives who are not going out for work and financially dependent on their husbands. Similarly, those who have separated from their husbands, they faced major economic difficulties for taking care of children in daily life. Due to this reason the maximum number of women goes to Kolkata for domestic service. When researchers asked respondents to describe their work, some of the respondents were silent on the kind of work that she was involved in Kolkata. However, Centre coordinator of Missing Link Trust said that, “*In Madhusudanpur village (Kultali Block), majority of women and adolescent girls are going for domestic work to Kolkata and surrounding urban areas. Some of these are working in the red-light area i.e., Sonagachi⁸, Kolkata. This is the forced migration⁹ towards urban areas like Kolkata and any other cities especially due to domestic violence, lack of income and availability of work in their local areas*”. Hence, dependency and economic constriction are found the major causes of domestic violence in the study area.

⁸Sonagachi is Asia's largest red-light area in Kolkata. The narrow, rat-infested lanes of Sonagachi are now home to some 11,000 sex workers (Deepanjan Ghosh, 2018).

⁹A simple term of Forced migration is when people are made to leave their home or homeland due to violence, persecution or any natural hazard.

Age at time of marriage and Domestic Violence

The table: 6 depicts, four types of domestic violence are higher in the before the legal marriageable age group of 15- 17 years. Almost 64.5 per cent of respondents are experienced physical violence, followed by 63.87 per cent of respondents are experienced emotional violence, 50.32 per cent of respondents are experienced economical violence and 41.94 per cent of respondents are experienced sexual violence in the study area. Similarly, this trend is continuous in the age group of 12-14 years. On the other hand, 18-20 years of marriageable age group also experienced four types of domestic violence than the higher age group of respondents those who have married after 20 years. Girls are married before the legal marriageable age and due to underage, they face major adjustment issues in their matrimonial homes and experienced domestic violence. Most of the girls were forced to come back to their natal family; family members of these girls' fear reporting domestic violence to police as their daughters were married before 18 years as they have a notion that police will punish them. However, this finding reveals that domestic violence is more prevalent in early age married women compared to older age married women.

Table 6: Showing Comparison between Age at time of marriage and Types of Domestic Violence against Women

Age at time of marriage	Types of Domestic Violence against Women (%) (N=155)			
	Physical violence	Sexual violence	Emotional violence	Economical violence
12-14	20 (12.9)	13 (8.4)	19 (12.3)	15 (9.7)
15-17	100 (64.5)	65 (41.9)	99 (63.9)	78 (50.3)
18-20	26 (16.8)	12 (7.7)	23 (14.8)	17 (11)
21-23	2 (2)	1 (0.6)	2 (1.3)	2 (1.3)
24-26	4 (2.6)	0.00	4 (2.6)	4 (2.6)

Source: Authors Calculation based on primary data.

Family structure and Domestic Violence

The cross tabulation shows that, in joint family domestic violence (physical, emotional and economical) is reported more than nuclear family in the study area. The main reason of violence in joint families is also because of lack of understanding between the spouses. The data also reveals that, domestic violence is lesser in nuclear families. In nuclear families the interference of mother-in-law and other family members are not very effective. In joint families one of the major problems is that everyone in the family listens only husband words and as a result the husband restricts his wife movements and control her activities. Majority of husbands take side of their mother listen to whatever they say without understanding their wife's viewpoint and react based on what they have been told. As Priya, (name changed) 26 years old, Sonatikri village said that, *“My mother-in-law has sexual relationship with other men in the village. She (mother-in-law) also forced me to do sexual relationship with them so that she will get more money. But I denied to do that, mother-in-law started physical violence on me and whenever my husband came back from Kolkata mother-in-law create a story that, I am not properly cook food, every time I am over phone with somebody, I don't listen to mother-in-law. My husband believed his mother's story and started torturing and arguing with me.”*

Table 7: Showing Comparison between Types of family structure and Domestic Violence against Women

Family Structure	Types of Domestic Violence against Women (%) (N=155)			
	Physical violence	Sexual violence	Emotional violence	Economical violence
Joint Family	130 (83.9)	81 (52.3)	128 (82.6)	100 (64.5)
Nuclear Family	22 (14.2)	10 (6.5)	19 (12.3)	16 (10.3)

Source: Authors Calculation based on primary data.

Types of Marriage and Domestic violence

The table 8 clearly reveals that, respondents with arrange marriage experienced more physical (78.7 per cent), emotional (76.1 per cent) and economical violence (59.4 per cent)

than sexual violence (45.2 per cent). Similarly, those with love marriage, they also experienced physical, emotional, economical and sexual violence. However, percentage of women experienced domestic violence are lesser in love marriage than arrange marriage.

Table 8: Showing Comparison between Types of Marriage and Domestic Violence

Types of Marriage	Types of Domestic Violence against Women (%) (N=155)			
	Physical violence	Sexual violence	Emotional violence	Economical violence
Arrange Marriage	122 (78.7)	70 (45.2)	118 (76.1)	92 (59.4)
Love Marriage	30 (19.4)	21 (13.5)	29 (18.7)	24 (15.5)

Source: Authors Calculation based on primary data.

Causes of Domestic violence against Women

The present study found that lack of understanding (jealousy, doubting, accusing etc.) between in-laws and husband was the major cause of domestic violence against women in the study area.

Table: 9 Showing the causes of Domestic Violence

Causes of Domestic Violence against Women	Responses (%) (N=155)
Household problems (cooking, taking care of children, elders etc.)	79 (51)
Lack of understanding between spouses (jealousy, doubting, accusing etc.)	109 (70.3)
Unsatisfied sexual relation	34 (21.9)
Economic constraints	58 (37.4)
Alcoholism	107 (69)
Disease	3 (1.9)
Extra marital relationship	71 (45.8)
Demand of dowry	106 (68.4)

Source: Authors Calculation based on primary data.

Similarly, 69 per cent respondents reported their husband's alcoholic habits. The women said that when the husband came home drunk, they would either physically hurt or would resort to the use of abusive language. About 68.3 per cent of women reported as for demand of dowry. As Shreya (name changed) 28 years old, Katamari village, Kultali Block said that, *“After a few weeks of marriage my mother-in-law started complaining regarding the dowry and demanding for more. My husband was an alcoholic who use to torture me physically for dowry. My mother-in-law and husband often sent me to my natal home asking me to return only with dowry that they demanded for constructed pond for fishing business and build a toilet in the house. Similarly, 79 Out of 155 women experienced domestic violence due to causes like not properly take care of children and elderly and cooking food etc. and 45.8 per cent women reported that they experienced domestic violence due to reasons like extra marital relationship of husbands. As Riya (name changed) 35 years old woman from Sonatikri village, Joynagar II block said, “I got to know that my husband has an affair with another woman. She is also married and staying near to my house. I decided to talk to my husband but he totally declined in front of me and family members. Due to this, he started beating me slapped, pushed, twisted my arms and kicked on my abdomen.”*

An economic constraint is a common problem of many families in the study area. Inadequate financial resources to meet the day-to-day expenditures are a source of stress and strained family relations. Domestic violence in the family due to economic constraints was also found to exist at 37.4 per cent. As Pallavi (name changed) from Katamari village, Kultali block said, *“The major part of my husband’s income goes into purchase of alcohol and gambling. I have no say in financial matters. His drinking habits the family is going through severe financial crisis.”*

Discussion

While describing the present study we must say, the cases of domestic violence are very important to understand the present situation of the study area. They all are unique, unusual in a number of ways and belongs to different caste, age group, education etc. but all are the victims of domestic violence. The study area is selected purposively in the South 24 Parganas district of West Bengal state. The economic profile of the study area is very poor as the

majority of population live by earning meagre income from agriculture. The female work participation and the per capita income in district are lower than the state. The data on domestic violence have been collected using sixteen questions and have been grouped into 4 categories namely, physical violence (7 questions on any form of physical abuse like pushing, slapping or beating kicking and the like), sexual violence (3 questions on forced sex, unnatural sex, and unwanted pregnancy), emotional violence (3 questions on insulting and humiliating in front of others and threatening) and economic violence (3 questions on denial of food, basic necessities and access to money). The qualitative data are used to substantiate the findings.

Thus, inferences of the study are significant. The domestic violence is high among younger women than the older and is associated negatively with age. It is higher among illiterates and less than primary educated one than those of attended secondary education. About 44.5 percent of the women have experienced three or more types of violence. The most common forms of physical violence reported by the majority of the respondents are slaps, hitting, kicking, twisting arm, forcibly putting oil into mouth and throwing objects. Despite, many women do not seek divorce accepting domestic violence as a part of their family life. They do not have enough knowledge or awareness about their legal rights. For that reason, they suffer domestic violence silently behind closed doors. The major causes of domestic violence are not having trust, feeling jealousy and accusing daughter-in-law, followed by male vices like alcohol as in 69 per cent of the cases and dowry in 68 per cent of the cases. The prevalence of domestic violence against women is also affected by marital status and household structure of the women. Those women who have been not separated from their husband, experienced more violence. Similarly, those women living in joint family, experienced more violence than the women who are residing nuclear family. Moreover, alcohol consumption of the husband has direct effect on domestic violence. Similarly, women belong to other backward class experienced more domestic violence than Scheduled caste and Scheduled tribe women.

In the present study, at the personal level it has been observed that, the intensity and incidence of domestic violence varies marginally among the victims of the different types; the worst experienced being wives of persons who have alcoholic by nature. In fact, one of them had made an attempt at suicide, but did not succeed. Hence, the victims of domestic

violence were found to be depressed and frustrated a lot. Particularly in the poor and marginalized families in these remote villages of Sundarbans, women form the backbone of the families, as they maintain the families in particular. This study also found that, the relationship with the child and husband was kept unaffected by most of the respondents. Still, they are doing all responsibilities of household chores silently. The home environment was affected in most of the cases and victims were increasingly estranged from the other members in the household and also victims were getting deprived of their basic needs. In the majority of cases victims are not allowed to talk with neighbors in the study area. It also noted that, the consequences of domestic violence negatively effects mental and physical health of women as well as the relationship with neighbors, friends and relatives.

Conclusion

“For every reported case there are several unreported ones. —They are just the tip of the iceberg”, - says Anuradha Kapoor, director of Swayam, a woman’s rights organization.

In patriarchal society like India, the phenomenon of domestic violence is rather intimate in nature that takes place within the domestic sphere and considers it as a private affair between spouses, it is impossible to observe such phenomenon directly. Added to this issue, identifying and addressing the victims and perpetrator of domestic violence is also difficult. Due to lack of awareness and culturally constructed notion of shame, the cases of domestic violence are underreported in India. A woman believes that entire responsibility of preserving the family as her duty; hence she makes all adjustments unilaterally in her husband’s home. In spite of the extreme physical and psychological violence meted out of many women, they do not seek divorce, as they feel their trauma and that of their children is too great a price to be paid instead. Thus, to a great extent she accepts domestic violence as part of her family life. Hence, there is an urgent need to strengthen the PWDV Act - 2005 by involving Police, Panchayat members and women organizations to provide counseling and justice on time to the victims of Domestic Violence. Further, they should boost the awareness in preventing and reducing Domestic violence at village level.

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Perception of Gender Role Attitudes among Adolescent Boys in Chandigarh, India

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Abstract

In this qualitative study set in urban India i.e. Chandigarh, an attempt has been made by the researcher to explore perceptions of gender role attitudes among adolescent boys. Semi-structured interviews were conducted among thirty one adolescent boys living in a rehabilitation colony for slum dwellers located in the city. Interview transcripts were coded by the author using predetermined and emergent codes to identify perceptions of adolescent boys relating to gender roles and privileges and restrictions for women/girls and men/boys. Major themes that were identified in the interviews included: (1) division of work; (2) decision making; and (3) parity in education. Results from the study reflected that the majority of the adolescent boys held equitable gender role attitudes. This could be endorsed by the fact that Chandigarh is ranked as one of the best performers in terms of gender equality in India.

Keywords: gender role attitudes, adolescent, boys, Chandigarh.

Introduction

Global Gender Gap Index (2021) ranks India 140th among 156 nations, taking into consideration gender parity in the areas of health, education, economic status and political participation. Women and girls occupy a lower social position in India, due to existing gender stereotypes prevalent in the country (Ministry of Women and Child Development, 2015). Gender based discrimination starts in India at the very birth of a child, where the birth of a son is celebrated; but birth of a girl child is considered to be a liability; which may even lead to female infanticide (Kishor and Gupta, 2009).

Inequitable gender role attitudes are an outcome of harmful perceptions revolving around masculinity (Das et al., 2014). Such harmful notions endorse traditional male role attitudes such as, all decisions should be made by male members of the family; and perpetration of

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violence against women and girls (Heilman et al., 2014).

Perceptions regarding egalitarian and in-egalitarian gender role attitudes are shaped during childhood and adolescence (Achyut et al., 2017). In the view of Thomas (2002) boys are taught stereotypical masculine attitudes which are associated with being, 'physically and emotionally strong, being competitive, dominating and controlling others' (as cited in Jaya et al., 2014). On the contrary, girls are taught to be timid, dutiful and submit to the decisions of their family (Jaya et al., 2014). Inequitable gender role attitudes developed during adolescence have adverse and long term effects on the lives of women and men, girls and boys (Vyas et al., 2020).

Comprehensive studies have been carried out in developed nations to find out perceptions related to gender norms held by young men and adolescent boys, but there exists a paucity of literature in this area in newly industrialized countries such as India (Landry et al., 2020; Yu et al., 2017). An attempt has been made in this study, to contribute to the existing literature on perceptions of gender role attitudes, among adolescent boys in India.

Study aims

The purpose of this study is to explore and understand perceptions relating to gender role attitudes among adolescent boys taking into consideration:

- (1) division of labour ; and
- (2) privileges and restrictions for women/girls and men/boys.

Method

Settings

Chandigarh is a Union Territory and is located in the north-western part of India. The city does not have its own government unlike states located in India; but instead it is governed by the Central Government of India (Mohapatra, 2012). It is capital to the states of Punjab and Haryana (north-western states of India).

NITI Aayog (National Institution for Transforming India, 2018) ranked Chandigarh and Andaman and Nicobar Islands as the best performers in terms of gender equality, amongst all the union territories of India.

The study was conducted in a colony located in the northern part of Chandigarh, in the month of December, 2017. The settlement is essentially one of rehabilitation colonies for slum dwellers; and it is located at the periphery of the city (Chandigarh Administration, 2018; Mohapatra, 2012).

Most of the residents living in the colony are working in the informal and unorganized sector (Chandigarh Administration, 2018). It becomes essential to mention here that being a lower income locality, a lot of women work as maids for minimum wages, in the nearby and more affluent neighbourhoods. Some of them run tea stalls; work in grocery stores; sell fruits and vegetables; and others do tailoring and repair work.

Study design

This research was conducted as a part of the process of designing gender sensitization intervention strategies specifically for adolescents. Qualitative survey research design was employed for the purpose of data collection.

Sampling and participants

Purposeful sampling technique was used in the study. Inclusion criteria were as follows: adolescents, identifying as male and living in the colony mentioned above. A total of 31 adolescent males were interviewed, to adequately reach saturation.

Before the interviews, participants were informed about the purpose of the study. They were also made aware about their rights as voluntary participants and the right to withdraw. Oral consent was taken from parents of participants who were below the age of 18 years.

Table 1: Demographics of the participants

Participant Number	Age	Has female sibling/siblings	Mother as earning member
Participant 1	13	No	Yes
Participant 2	13	Yes	No
Participant 3	13	No	Yes

Participant 4	14	Yes	Yes
Participant 5	14	Yes	No
Participant 6	14	Yes	Yes
Participant 7	14	Yes	Yes
Participant 8	14	No	Yes
Participant 9	14	No	No
Participant 10	15	Yes	No
Participant 11	15	Yes	Yes
Participant 12	15	No	No
Participant 13	15	Yes	No
Participant 14	16	Yes	Yes
Participant 15	16	Yes	Yes
Participant 16	16	Yes	No
Participant 17	16	Yes	Yes
Participant 18	16	Yes	Yes
Participant 19	16	Yes	Yes
Participant 20	16	Yes	No
Participant 21	17	Yes	No
Participant 22	17	Yes	Yes
Participant 23	17	Yes	No
Participant 24	17	Yes	No
Participant 25	18	No	No
Participant 26	18	No	Yes
Participant 27	18	Yes	No
Participant 28	18	No	Yes
Participant 29	18	Yes	No
Participant 30	18	No	Yes
Participant 31	18	Yes	No

Data collection

Data was collected by conducting face to face semi-structured interviews with the participants. Questions included in the interview guide were open ended and allowed scope for flexibility, so that participants could reflect and describe their own perceptions of what gender equality really meant to them. These mainly focused on role expectations from women and men, girls and boys; and the participants' opinions on gender rights, privileges and gender based discrimination. Interview guide was designed with the help of experts in the field.

Participants were interviewed in their homes or nearby locations. Interviews were conducted in Hindi, which lasted for 30 to 60 minutes with each participant. Word by word transcripts were noted down during the interviews, and later translated into English.

Data analysis

The researcher used methods drawn from directed content analysis (Hsieh and Shannon, 2005) to analyse the interviews. Existing theories and relevant research findings were consulted to develop the initial coding scheme. As the process of data analysis proceeded additional codes emerged; and necessary changes were made in the initial coding scheme. These codes were then arranged into categories of emergent themes and sub-themes.

An independent researcher, who had not been involved in the process of data collection and analysis, was requested to review the thematic data analysis. On the basis of suggestions made by the independent researcher a few modifications were made in the original analysis. Finally, the qualitative data was synthesised into three themes and their respective sub-themes.

Results

Researcher was able to draw out three major themes from the interviews with the adolescent boys: (1) division of work; (2) decision making; and (3) parity in education.

Division of work

This section explores the young boys' perceptions, opinions and experiences related to division of work, both inside and outside the house. It would be apt to mention here that a number of participants had mothers who were working outside the house for remuneration. At the time of data analysis two prominent sub-themes that emerged were: unpaid household work and paid work.

Unpaid household work

Majority of the boys were of the view that there is no difference between women and men, girls and boys; thus unpaid household work should be equally divided among female and male members of the family:

There is no difference between my sister and me. Whatever she can do, I can do; and whatever I can do, she can also do. So, both of us share household responsibilities given to us. (Participant-24)

In their opinion it was unfair to burden women and girls with all the household work:

Women and girls are not only meant for carrying out household work. As they are our family, we should also help in doing chorus around the house. (Participant – 1)

During due course of interviews, sharing of household work between sisters and brothers, as their mothers were working outside the house became evident:

When my mother goes out for work, my siblings and I, share and do the entire household work. (Participant-6)

In case those interviewed were the eldest sibling in their family, onus of undertaking household chores fell on them, when their parents were not present at home:

My sister is younger to me and my mother goes out to work from morning till early evening. So when ever my mother is not there, I do all the household chores and also look after my younger sister. She is too young to cook on the gas stove and carry heavy weight around the house. During holidays from school I stay at home and look after my younger sister. (Participant-17)

Those interviewed were of the view that they had learnt to do household work so that they become self-reliant:

When we help women to do household chorus, we also learn how to manage the house. (Participant – 9)

When my mother is away at work, I do household chorus that need to be taken care of at home. This way one learns how to take on responsibility and become independent. (Participant – 18)

Another advantage that became apparent while conversing with the boys was judicious use of manpower and time:

When all the members of the family help in doing housework, the work finishes faster; and members are able to take out time for other activities other than household chorus. (Participant 30)

Household chorus undertaken by boys included cooking, washing laundry, cleaning and dusting:

I like to clean my house, keep it neat and tidy. I can also cook but only a few things like omelette, parathas, chapattis and tea. (Participant-26)

I play a supportive role to my mother; I help her in doing the laundry. (Participant – 31)

One of them mentioned babysitting:

I help in looking after and taking care of my niece. (Participant- 25)

Excluding a few, most of the boys expressed egalitarian views about division of unpaid work among female and male members of the family, irrespective of the fact whether their mothers were working outside the house or not:

Everyone is equal in our country; no one is superior or inferior to others. Women not only perform housework, but some of them also take up work outside their homes to make ends meet. Men and boys should essentially help in doing chorus around the house. (Participant 5)

Paid work

A number of boys disagreed with the idea of fathers as sole breadwinners and mothers as dependent homemakers in the family. As one of the boys pointed out:

The idea of women as only house-wives is obsolete in today's contemporary society. (Participant- 15)

The boys who disagreed spoke about women and girls having equal rights to paid work just like men and boys in India:

Women and men enjoy equal rights in our country and society. The same goes for equal opportunities to paid work; the right to work and earn for a living. (Participant-19)

They were of the view that, it is for women and girls to decide on their own whether they want to take up paid work. Women and girls should have the right to choose between staying at home or working outside the house for remuneration and perks:

I want my sisters to decide for themselves if they want to work outside the house, but they should do so once they have finished their education. (Participant- 31)

Those with egalitarian views spoke about girls having similar aspirations for their future, just like boys:

Just like their brothers, sisters also have dreams about being able to earn their own money and become independent. Sisters also have aspirations about having their own source of income and being able to spend it the way they wish to. (Participant – 7)

In their view when women and girls took up paid work it helped to increase the total income of the family:

When women also contribute to income of the family, it helps to overcome financial crises in the family. (Participant-27)

The boys also viewed working outside the house as an opportunity for women and girls to get exposure outside of the domestic sphere:

When girls are gainfully employed outside the house they are busy. Sitting at home can make one become lazy and spoiled. (Participant-24)

When women work outside of their household boundaries, it helps to widen their horizons, as they get to interact with the outside world. It helps them to gain confidence; increase their knowledge; and learn as well as improve their work skills. (Participant-30)

All those interviewed unanimously agreed that irrespective of gender, there should be equal pay for equal work:

If both the employees are equally qualified and doing same amount of work; irrespective of gender, they should receive the same amount of remuneration. (Participant- 7)

Others spoke about the importance of women's rights at workplace:

It is illegal to discriminate among female and male employees at place of work. (Participant-5)

A number of participants endorsed the stereotype that, 'teaching in a school is the best job for women; as it doesn't involve long working hours and there are fewer chances of sexual harassment in this line of work':

The chances of a female school teacher being sexually harassed at school are almost impossible. While other work-place environments, may not be as safe for women and girls. (Participant 9)

School teacher's job is the best job for women and girls, they come back home early. Other jobs might involve long working hours. This could pose to be a problem, as it becomes difficult to have access to safe means of public transportation, late in the evening and at night. (Participant 27)

Out of those who did not agree with the stereotype, they were of the opinion that there is no difference between women and men, girls and boys. Thus women and girls should have the freedom to decide for themselves, their career paths and choices:

If the office is situated in a locality considered to be safe and the work place environment is good, women and girls will be able to peruse any profession, be it a school teacher's job or office job. Nowadays call centres have made it a priority to ensure safety of female employees at work and also provide transport facilities for them. (Participant-17)

At times women and girls are more brave and fearless than men. In India, many women decide to join the army and police force to serve the country. (Participant-30)

Decision making

This theme deals with perception of adolescent boys with regard to women and girls being an integral part of decision making process within the family; and also as independent decision-makers.

Family decision making

When asked whether only male members should take all important decisions concerning the family, or should all members participate in the process; barring a few, majority of the boys believed that everyone should be consulted. In their view women and girls are as capable as men in decision making:

Men are not superior to women; women can make decisions as good as men. (Participant- 19)

They were of the view that irrespective of gender all members of the family should take part in the decision making process.

It is important that women should also have an equal say in all the important decisions that have to be made in a family; as these decisions will effect each and every member of the family. (Participant- 13)

When everyone is consulted during the making of important decisions, all the members will know what is taking place at home. (Participant – 29)

Adolescent boys considered women to be better at making decisions related to home and family; they were of the view that women know more about the household than others:

At times women are capable of making better decisions than men, because they are better informed about certain issues; and men might be unaware of circumstances that women have an insight on. (Participant-21)

There were others for whom wisdom and experience of elders was more important than gender of the family member:

Elders in the family should be responsible for making decisions, whether it is our grandparents or parents. It is their wisdom and experience that matters, and not gender. (Participant – 24)

A common belief which resonated among most of those interviewed was that while making decisions concerning the family, it was better to be realistic and take into consideration opinions of female as well as male members of the family; rather than be patriarchal and let male members dominate the decision making process.

Taking advice from male members

A considerable number of adolescent boys agreed that it was essential for women and girls to rely on the opinion of male members of the family while making important decisions:

Male members of the family give objective advice based on facts and logic. At times they are emotionally more stable than female members of the family. (Participant- 12)

Many of the boys interviewed believed that women and girls should consult male members of the family at the time of making crucial decisions. They were of the view that fathers and brothers would give genuine and honest advice to women and girls in their family:

There is no harm if sisters take advice from brothers. This is because siblings share a common bond and it is also easier to communicate with them, as they are our contemporaries. (Participant- 3)

Male members of the family will give genuine advice to female members, because they will always have the female members' wellbeing in mind. (Participant – 20)

There were others who believed that men and boys are in a better position to give advice, as they spend more time outside the house than women and girls:

Men have more knowledge than women as they work outside the house. (Participant – 15)

A few of them who had younger sisters, believed it was essential that the elder brother be taken seriously. They gave a few reasons for their perception:

One should take advice from elders in the family as they have more experience. A younger sister should listen to her older male sibling as he knows better than her. (Participant – 5)

I am elder to my sister, so she should listen to me. (Participant- 24)

On the other hand there were many who did not think it was essential for women and girls to blindly adhere to advice given by male members of the family. Some of them were of the view that while making crucial decisions not only male members, but others members of the family should also be consulted:

All members of the family are wise enough to give good advice to others. Family members should listen to each other, have faith and trust in one other, rather than listen to outsiders. (Participant- 29)

There were others who considered wisdom of older members to be more valuable than gender:

It's good to take advice from older members of the family, as they are wiser than the youngsters. (Participant- 7)

Whoever is the older sibling should give advice, irrespective of gender; as older siblings know more than younger siblings. (Participant – 31)

Then there were those who thought that for making a sound decision, it was essential that educated family members be consulted, irrespective of gender:

Educated individuals will definitely give good and sound advice to their relatives, near and dear ones. (Participant – 6)

In the opinion of a few participants, it was not utmost essential that female members should strictly adhere to orders of male members. They were of the belief that female members are always at liberty to make their own choices:

Advice sought from male members of the family should not be blindly followed; women and girls must think for themselves; whether the advice will help them to fulfil their goals or no. (Participant – 8)

Advice should be given by male members of the family only when it is needed or asked for. They don't have to unnecessarily meddle into other peoples' business. (Participant-13)

Parity in education

There was a consensus among majority of the adolescent boys that both girls and boys have an equal right to education. Girls, their sisters, should in no way lag behind their male contemporaries when it came to access to education. They were of the view that parents should spend same amount of money and give the same kind of attention to their daughter's education, just like they would do for their son:

Sisters are as much a part of the family, like their brothers. Both of them should have equal access and opportunities to education. (Participant – 9)

Both girls and boys, sisters and brothers in a family, have the same right to education. Girls should not be deprived of their right to education. It has been given to them by our constitution so that they can secure their future; and lead a good, decent life. (Participant – 27)

Financial independence

In several of the interviews, adolescent boys viewed access to good education, as a means of providing necessary skills and knowledge to women and girls. This would lead to increase in employment opportunities for women and girls; and ultimately make them financially independent:

Good education is a means to well-paid and dignified job in the near future. Thus it's important that parents should invest similarly in their sons' and daughters' education. (Participant – 15)

There is no difference between sisters and brothers in a family. Just like boys are given access to education so that they can earn a decent living during their adult life, it should be the same for daughters. (Participant 25)

Daughters are more caring than sons

The boys believed that, at times daughters are more caring and affectionate towards parents, than sons:

Sometimes girls look after their parents and family more than boys do. It's essential that daughters be as educated as sons in the family; daughters are more affectionate towards their parents; and spend more time with them. They should not be neglected. (Participant-1)

Sharing responsibilities

Others were of the opinion that sisters and brothers must share responsibilities relating to their families:

It's important that girls and boys should have equal opportunities to education and employment. There are all possibilities that daughters might have a more successful career than their brothers. When sisters are made financially independent just like their brothers, they can also take up the responsibility of looking after and providing for their parents and family. (Participant-18)

Educational aspirations

There were others who spoke about educational aspirations of girls:

Girls also have aspirations to get a good education, which will eventually pave the way for their professional career. (Participant-20)

Better decision makers

Education was considered as a means for making knowledgeable decisions:

When a girl is well educated, she will make well-informed decisions not only for herself but also for her family. (Participant-30)

Social status

Education of women and girls was also considered as a means of elevating the status of one's family:

When women and girls in a family are well educated it adds to the prestige of the family in society. (Participant-29)

Desirable quality in a prospective bride

A few of them considered good education to be an asset for a prospective bride:

When men want their prospective wives to be well educated; then families must make sure their daughters are also well educated. So that when they get married, their in-laws and husbands take pride in them. (Participant – 28)

When my sisters are well educated, they will also get married to men who are well educated and well settled in life. (Participant – 31)

Expressing egalitarian attitudes, adolescent boys gave various reasons such as financial independence and sharing of family related responsibilities, for supporting equality in educational opportunities for both girls and boys.

Discussion

This qualitative study set in urban India i.e. Chandigarh, explores egalitarian and in-egalitarian perceptions relating to gender equality among adolescent boys living in a lower income neighbourhood. Using qualitative survey research design, semi-structured interviews were carried out among thirty-one adolescent boys to elicit their views on gender based parity. Three major themes were explored during analyses of qualitative data: (1) division of work; (2) decision making; and (3) parity in education. Based on these three major themes, ideas and opinions of the adolescent boys have been discussed further.

Majority of the adolescent boys were of the view that household work should be undertaken by both female and male members of the family. They were of the belief that it was insensitive to burden women and girls with all the work; they did not consider themselves to be a burden on others as they knew how to carry out household chorus and; more hands made the task of taking care of the family and house easier. During the interviews it became apparent that both sisters and brothers were equally responsible for household chorus delegated to them by their parents. If the adolescent boys were eldest sibling in their family, in addition to chorus they were also responsible for taking care of their younger siblings. They were not shy of discussing domestic tasks undertake by them which included cooking, baby-sitting, cleaning and dusting. These equitable beliefs could be attributed to the fact that being a lower income neighbourhood, a number of women undertook paid work, which made it necessary for all members of the family to do household chorus, irrespective of gender. These findings are in stark contrast to the findings of other studies carried out in Panjab, Haryana and other parts of India, where household chores and rearing children were categorized as feminine gender roles (International Institute for Population Sciences [IIPS] and Population Council, 2010; Nagaraj et al ., 2019).

Excluding a few, most of the participants were of the belief that women and girls have equal rights to paid work, just like their male counterparts. The boys strongly felt that irrespective

of gender there has to be 'equal pay for equal work' at work place. While discussing paid work many of the boys felt that it was important for women and girls to be financially independent. Such independence in their opinion helped women and girls to fulfil their aspirations and dreams. They were aware of the fact that this was a source of additional income for the family. Adolescent male participants supported the idea of women and girls being gainfully employed. This should not come as a surprise, but a considerable number of participants endorsed the stereotype that 'teaching in a school as the best job for women'. In India there is a widely held belief that 'teaching in a school is the best profession for women' as it helps them to maintain a healthy balance between their professional and personal life (Vajiravel, 2015).

These equitable beliefs could be attributed to the fact that being a lower income neighbourhood, number of women undertook paid work; as a result of which it became necessary for all members of the family to do household chores, irrespective of gender. Construction of gender attitudes during adolescents is heavily influenced by the gender norms followed within the family and community settings (Blum et al., 2017; Landry et al., 2020).

The above findings are in stark contrast to the findings of other studies carried out in Panjab, Haryana and other parts of India; where household chores and rearing children were categorized as feminine gender roles (International Institute for Population Sciences [IIPS] and Population Council, 2010; Nagaraj et al., 2019; Waghachavare et al., 2017); on the other hand paid work was considered to be a masculine role (Nagaraj et al., 2019; Sinha, 2007; Waghachavare et al., 2017). In many instances boys believed that there were chances of sexual harassment of women and girls at work place, thus they should avoid taking up paid work (Sinha, 2007).

A considerable number of boys advocated male as well as female participation in the household decision making process. They understood the value of tapping into the pool of knowledge that already existed in the family. They considered hands-on experience and wisdom as essential benchmarks' for qualifying as good household decision makers, rather than gender. On the other hand many boys were of the opinion that whenever women and girls had to make essential decisions about their life, they should take advise given by male

members of the family seriously. This was especially true for adolescent boys who had younger sisters. They endorsed this viewpoint as they believed that men and boys were more objective in their beliefs and they had more exposure to the outside world. Some believed that there was no harm in sisters discussing their problems with their brothers and taking advice from them; as are siblings were family, it was easier to communicate and understand each other better. At the same time there were participants who stated that they did not believe women and girls should blindly follow advice given by male members of the family. Egalitarian views of the adolescent males with regards to participation of women and girls in the decision making process and accepting their right as independent decision makers; do not go well with conservative family hierarchy found in parts many of India; where other members of the family (International Institute for Population Sciences [IIPS] and Population Council, 2010), fathers and brothers dominate the decision making process (Hebert et al., 2019).

The participants believed in parity of education between sisters and brothers in a family. They considered education as a means to lucrative employment in the near future. Some were of the view that girls were more affectionate and caring towards their parents than boys, thus in no way should girls' education be neglected. Many were of the view that when women and girls were well educated it helped to raise the social status of the family; others considered it to be an additional asset for girls who were about to enter the arranged marriage scenario. Expressing gender equitable norms the boys also validated their views by adding that when girls/ sisters were educated and earning just like their male counterparts, they could also financially contribute in taking care of the family and household. The financial responsibility would not exclusively fall on male members of the family.

These findings are consistent with a similar study carried out in backward districts of India; where adolescent boys believed that education was essential for girls as it increased their value in the job market; made them self-reliant ; stand up against oppression and exploitation; work towards gender equality in society and ; understand family dynamics better (Sinha , 2007). Contrary to the above, other studies in northern India revealed that, at times young men and adolescent male members of the family did not support the idea of women and girls

completing their education due to existing gender norms, lack of finances and sexual harassment (Hebert et al., 2019; Nagaraj et al., 2019).

Chandigarh has been rated high on gender equality (NITI Aayog, 2018). Adolescent male participants supported egalitarian views related to division of work, house hold decision making and equal opportunities in education for boys and girls. Though they supported the view 'being a school teacher is the best job for women and girls'. A number of participants also believed that women and girls must seriously consider genuine advice given to them by male members of the family, as male members are more worldly wise.

Strengths and limitations of the research

During the process of literature review, researchers were unable to find similar studies that may have been carried out in Chandigarh.

Coming to limitations, the research used semi-structured questionnaire designed by investigators for the purpose of data collection. Results of the study could have been strengthened through triangulation of data, by including research methods such as observation techniques and group discussions.

The adolescent male participants may have been hesitant in revealing, how they actually perceive gender equality as the researchers were women. Another limitation of the study was that sample was taken from only one lower income locality, therefore it might not be possible to generalise the findings to other communities.

Conclusion

An attempt has been made through this study to understand perception of gender equality and gender attitudes among adolescent boys in Chandigarh, India. Semi-structured interviews were used to collect data from the participants. Qualitative data was analysed by the researchers with the help of directed content analysis and by preparing a code book.

Chandigarh stands fairly well in comparison to other places in India, when it comes to measuring gender equality. This has been reflected in the egalitarian attitudes expressed by the adolescent boys. But at times the boys did speak about certain issues that reflect in-

egalitarian attitudes. There is a need to carry out further research in this area, which will help in designing gender sensitisation curriculum especially meant for adolescents.

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TRENDS IN DELIVERY OF FAMILY PLANNING SERVICES DURING COVID-19 PANDEMIC IN SELECTED STATES OF INDIA

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Abstract

The reduction in unmet need for family planning is one of the transformative successes of India in the domain of reproductive health to progress faster towards achieving Sustainable Development Goals. However, the spread of the COVID-19 pandemic put forth significant challenges in the continuation of delivery of essential health care services, particularly in low and middle income countries. Paying attention to the persistence presence of COVID-19, this study aims to understand the trends in delivery of family planning services (institutional and outreach) in selected states in India. The study has used secondary data from Health Management Information System (HMIS) of selected family planning methods published month wise across six high focused states. The relative change from April 2019 to June 2021 (including two COVID-19 waves) has calculated for pre-pandemic year and during pandemic for all selected states and has compared to understand the relative performance and recovery in delivery of services after first and second COVID-19 waves. It has found that in India, family planning services dropped by about 50% when compared to normal scenario. This implies that 50% fewer eligible couples used family planning services than last year. Results also show that there is low level of service resumption in both outreach and institutional services after the first wave, then a sharp drop in service during the second wave. In spite of being well-prepared and having the proper guidelines, the impact of covid-19 on the delivery of services could not be reduced during the second wave period.

Keywords: Family Planning, Outreach & Institutional Services, Recovering States, Lagging States, Relative Change

INTRODUCTION

In 2020, the entire world has faced the widespread spread of the Corona virus (COVID-19). On December 31, 2019, the virus's first case was found in Wuhan, China. Soon afterwards,

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corona virus cases were detected throughout the world. Due to the frightening development of COVID-19, the WHO labelled it a public health emergency of worldwide concern on 30th January 2020. On 30th January 2020, the WHO reported a total of 7818 confirmed cases worldwide. COVID-19 was declared a pandemic by the World Health Organization on 11 March 2020. Numerous governments throughout the world have implemented lockdown (full or partial restrictions) and quarantine procedures in order to control virus spread. However, as the widespread economic consequences of lockdown became apparent, a small number of countries quickly lifted lockdown measures. Till then the spread of virus has observed two major peaks. The first wave of virus has been observed soon after spread of virus at global level, then after the second wave has been observed during April-June 2021.

The first incidence of COVID-19 was reported in Kerala's Thrissur district on January 30th, 2020. As of that time, there have been 7,500 confirmed cases in 20 different countries throughout the world. In Alappuzha and Kasaragod districts, students returning from Wuhan, India registered its second and third COVID-19 cases. Within a month, India reported verified instances of COVID-19 in nearly all of its states, including Maharashtra, Delhi, Punjab, Rajasthan, Chhattisgarh, Odisha, Uttar Pradesh, Karnataka, and J&K (see below). As a whole, the country was put on lockdown for two and half months, with inter and intra-state travel bans issued in four separate periods. Before the initial shutdown, India had 606 cases and ten deaths linked to COVID-19. In month of June 2020, the things came back to normalcy. Huge number of people have been infected with the virus in India between April and May, 2021, with a high death rate. The public health system was in shambles during the second wave period. However, the restrictions imposed during the second wave were more lenient than those imposed prior to it.

Impact of covid-19 on family planning services

One of India's revolutionary breakthroughs in the domain of reproductive health has been the reduction in unmet demand for family planning, which has allowed the country to move more quickly towards the achievement of the Sustainable Development Goals. The development of the COVID-19 pandemic, on the other hand, posed considerable obstacles to the continuation of basic health-care services, particularly in low- and middle-income nations, where public

health services are already poorly distributed. Concerns regarding the influence of COVID-19 on women's capacity to continue using contraception were raised at the outset of the pandemic by tactics such as social distance, lockdown methods, and mobility restrictions, as well as anxiety of travelling to health facilities. The availability of family planning products and services was also challenged by disrupted global manufacturing and supply networks, as well as overburdened health facilities. It is possible that prioritising covid-19 and diverting resources from other health-care priorities in order to prevent the spread of the virus will adversely impact routine and necessary services such as family planning and reproductive health, particularly in states where access to family planning services is already limited. Corona virus' outbreak diverted the health care sector's attention solely to virus containment, which resulted in a significant decrease in attention to other health care needs for citizens. As a result, public trust in public health systems has been eroded due to stigma and misunderstanding surrounding the infection. There was a lot of turbulence in the delivery of public health services during the lockdown. Furthermore, the COVID-19 management cut back on outreach services, particularly family planning, by diverting front-line personnel. According to the National Family Health Survey-4, 69 percent of Indian couples have access to modern family planning methods through the public health system (NFHS-4, 2015-16). According NFHS-5 the unmet need for family has gone down in all almost all states, however few states still has long way to go (NFHS-5, 2019-20).

According to estimations by Das Gupta et al. (2020), pandemic might result in roughly 60 million fewer people using modern contraception by 2020. According to UNFPA's latest figures, due to service disruptions that lasted more than three months in most countries, 12 million women may have been unable to get family planning services. As a result, 1.4 million unwanted births may occur before women are able to resume using family planning services (Dasgupta, 2020; UNFPA, 2021; Riley, 2020). According to a policy brief published by a well-known non-governmental organisation, logistical concerns such as a lack of supply, human resource issues, and a lack of access will result in 26 million couples in India having unmet contraception needs if the current situation continues. 2.4 million unplanned pregnancies; 1.45 million abortions, of which more than half would be unsafe; and more than 1700 additional maternal deaths are expected as a result of this. If it hadn't been for the pandemic, more than 0.7 million tubal ligations would have been performed, almost 1 million

IUDs would have been implanted, and around 0.6 million injectable contraceptives would have been supplied during these six months (IPPF, 2020; Caruso, 2020; Church, 2020).

The COVID-19 epidemic has weakened the case for universal access to sexual and reproductive health care services, including family planning, by 2030. Once the interruptions caused by COVID-19 are overcome, contraceptive use – and hence the SDG 3.7.1. Indicator – may quickly revert to pre-disruption levels. For short-term methods, given that methods require frequent refill, the health system might theoretically return to pre-COVID-19 levels within a short amount of time once service operations began fully (Lindberg, 2020; Vora, 2020; Karavadra, 2020). However, with long-acting treatments, a longer period may be required to make up for services that were not supplied during the COVID-19 disturbances. Most importantly, the consequences are long-lasting for women – and their partners and families – who experienced an unwanted pregnancy as a result of a lack of access to birth control methods during COVID-19 disturbances. To ascertain the impact of COVID-19 disruptions on contraceptive services and use, governments and family planning service providers must continue collecting data via health management information systems, with a particular emphasis on data quality and completeness during the crisis (IPPF, 2020; Ullah, 2020). This is especially necessary now that major survey programmes have suspended field data collection. By the time surveys resume, some of the gaps in contraceptive usage may have resolved, as proven by research on contraceptive use during and after the West African Ebola epidemic and so the reduction in use recorded during the crisis may be lost in future surveys (Bastard, 2020; Bietsch, 2020).

Paying attention to the situation the present study aims to understand the trends in delivery of family planning services (institutional & outreach) in six high focused states (Bihar, UP, Assam, MP, Chhattisgarh, Rajasthan) of India. Further, this study attempts to quantify the gaps in delivery of services between pre-pandemic year (2019-20) and pandemic year (2020-21, first wave and second wave of COVID-19).

DATA & METHODOLOGY

Data

This study used secondary data of selected modern family planning indicators from Health Management Information System (HMIS) for high focused states. Data from the months of

March to June 2019 and 2020 were compared. Data on selected modern family planning methods was extracted from HMIS website 2019-20 and 2020-21. The selection of states have been done based on priority given at policy level. Therefore, five high focused states for family planning have been picked up for analysis. This study primarily focusing on the immediate impact assessment of COVID-19 on family planning service delivery. The various family planning methods have been clubbed into institutional and outreach services for the purpose of analysis.

Method

The relative change from April 2019 to Sep 2021 (including two COVID-19 waves) has calculated for pre-pandemic year and during pandemic for all selected states and has been compared to understand the relative performance and recovery in delivery of services after first and second COVID-19 waves. Further, time series graphs will be used to present chronological distribution of family planning services in same states.

The formula for relative change is explained below:

$$\text{Relative Change} = \frac{\text{Present Year} - \text{Base Year}}{\text{Base Year}} * 100$$

Here,

Base Year = 2019

Present Year= 2020 & 2021

To include the seasonality pattern of family planning services, the relative change has been calculated for three quarters of the year. Therefore, the entire year has been divided in to four quarters. The *first quarter* includes months of *April-May-June*; *second quarter* includes months of *July-August-September*; *third quarter* includes *October-November-December* and *fourth quarter* includes months of *January-February-March*.

The selection of states have been done keeping in mind two main criteria; first, the need for family planning methods (unmet need and total fertility rate); second, the number of covid-19 cases reported in these states. Therefore, the five high-focused states with high COVID-19

cases reported as well as relatively high unmet need for family planning have selected for the study to understand the trend of family planning services during entire pandemic timeline (till Sep 2021).

As per NFHS-5 the unmet need for contraception has reduced 4 percent for India from its previous level (NFHS-4, 13 %) (IIPS and ICF international , 2015-16). Further, almost all states in India has shown improving trend in fertility and family planning practices. For instance, states like Rajasthan and Madhya Pradesh has achieve replacement level of fertility according to NFHS-5 data release (IIPS & ICF International, 2019-20). Despite, improving trend Uttar Pradesh and Bihar yet need to achieve replacement level of fertility and satisfy unmet need for family planning for it's almost more than 11 percent eligible couples (*see table 1*). As of Jan, 2022, India ranks second in the world with 3.52 crore total reported confirmed cases after USA. Among the selected high focused state Uttar Pradesh has reported highest number of COVID-19 cases followed by Chhattisgarh and Rajasthan. Bihar relatively has reported relatively less number of COVID-19 cases. Looking at the fatality rate, it's visible from table 1 that despite low reported cases the fatality rate is higher than all other selected states. Similarly, in Assam too fatality rate is relatively higher. In UP and Chhattisgarh, the fatality rate remain higher that national average. In Rajasthan despite high number of reported cases the deaths due to COVID-19 remain low in state.

Table 1: Number of reported cases, deaths and fatality rate of COVID-19 at Global and State level as on 07/01/2022

	Country/States	Total Cases	Death	Fatality Rate (%)	NFHS- 4 (unmet need)	NFHS-5 (unmet need)	NFHS-4(TFR)	NFHS-5 (TFR)
1	USA	5.85cr	8.32L	1				
2	India	3.51cr	4.82L	1	13	9	2	2
3	Chhattisgarh	10.1 lac	6174	1	11	8	2	2
4	MP	7.95lac	13605	2	12	8	2	2
5	Rajasthan	9.6 lac	8967	2	12	8	2	2
6	UP	17.2 lac	22916	1	18	13	3	2
7	Bihar	7.3 lac	10535	1	21	14	3	3

Source: <https://www.mygov.in/corona-data/covid19-statewise-status/>, NFHS-4 & NFHS 5

RESULTS

STATE-WISE TRENDS IN INSTITUTIONAL & OUTREACH SERVICES

India

Lockdowns inside cities, regions, and surrounding borders were among the first steps taken by all countries to halt the outbreak of this virus. Due to the lockdown and suspended transportation, individuals had limited access to routine healthcare services. This had an impact on healthcare use. The measures to stop the spread of infection among the population have disrupted supply chain operations, making commodities and supplies for family planning inaccessible. Due to a significant reduction in human resources, particularly at primary health facilities, the pandemic has had a negative impact on access to contraception. Human resources, personal protective equipment, and all other essential health facilities were diverted to the prevention of COVID-19 infection (Ullah, 2020).

It's evident from *fig 1* that during first wave period the institutional and outreach services has noticed decline, however, the institutional services are the largely affected during both first and second wave of pandemic. Similar trend of service decline can be observed in both round of COVID-19 peaks. It's interesting to note here that both institutional and outreach services has showed recovering trend in post first wave period, however the institutional services noticed same level of dip during second wave of COVID-19. The trend analysis highlights that despite preparedness and proper guideline during second wave of COVID-19 the family planning services decline sharply. Seeing at fact, for India, the second wave was more severe in terms of number of reported cases, hospitalization and death rate. The given chaotic situation and increased hospitalization has resulted into burdened and collapsing public and private health infrastructure. Further, the stigma and fear of infection has resulted into decreased demand for institutional family planning services. However, the available data only give insight about the supply side picture of family planning services during pandemic timeline.

Recovering States

Uttar Pradesh

Fig 1 highlights that during first peak of COVID-19 the services reduced up to 70 percent from its previous year level. However, from the month of May onwards the outreach services has shown improving trend and showed 74 percent positive change in second quarter (JUL-SEP) just after first wave of COVID-19. The institutional services showed positive change in third quarter relatively more than outreach services. The decline in both institutional and outreach services has been noticed in the month of April (during second wave). However, comparison between two waves highlights that the highest reduction services has been noticed during first wave of COVID-19, despite least number of COVID-19 cases reported in same duration. This can be explained by the fact that the lack of preparedness and restrictions on mobility due to lockdown resulted in more disruption in delivery and accessibility of essential health services, rather than the actual severity and spread of virus.

Chhattisgarh

Compared to all other high focused states Chhattisgarh has reported relatively less disruption of both institutional and outreach services (*see fig 1*). However, it's also worth noticeable here that in Chhattisgarh the delivery of both institutional and outreach services followed almost a stationary pattern with slight ups and down. Through pandemic period the institutional services followed negative trend during entire pandemic period and showed no recovering trend in post first wave period. The outreach services in states showed a positive trend even during lockdown and second wave period which highlights that the disruption in outreach service is very less compared to institutional services (*see fig 1*).

Lagging States

Bihar

In Bihar the institutional services followed negative trend throughout pandemic and post pandemic period. During first wave of COVID-19 the services declined more than 65 percent to its previous year level. However, institutional services showed recovery in decline inflicted

from first wave, but that too remain negative compared to previous year level. Looking at distribution of outreach services during pandemic period, it's evident from the graph (*see fig 2*) that outreach services has showed less disruption and better recovery compared to institutional services. Notwithstanding, during entire pandemic period (first wave to second wave) the level of family planning services in Bihar followed negative trend compared to previous year (2019-base year). However, in second wave period the outreach services witnessed less disruption in delivery compared to first wave period.

Madhya Pradesh

Looking at the distribution of family planning services in Madhya Pradesh during COVID-19, the fig highlights that the institutional services has reduced up to 50 percent to its previous year level during both first and second waves of COVID-19. The institutional services showed a recovering trend in 2nd quarter of year 2020-21, however again showing declining trend in second wave period (2021-22). Looking at the relative coverage of outreach services it's evident that outreach services were relatively better in both covid-19 wave periods (*see fig 2*). The exceptional decline in outreach in 3rd quarter of (2020-21) might be because of discrepancies in data reporting for particular month. The results highlight that despite better preparedness and proper guidelines on delivery of essential health services during lockdown period, the delivery of services showed similar trend in both first and second wave of lockdown.

Rajasthan

The scenario of family planning service delivery in Rajasthan showing a fluctuating trend with changing situation of COVID-19 spread in the State. During first wave when lockdown measures and restrictions on mobility were high the institutional services noticed almost 60 percent reduction in month of April (2020-21) and 51 percent in the month of May (2020-21). During second wave period highest reduction (54 percent) in institutional services have been noticed in month of May. The huge surge in institutional services in fourth quarter highlights the pending demand of family planning services during first wave lockdown period. In general looking at the trend of family planning services during COVID-19 it is evident that compared to previous year 50 percent less couple availed intutional services during peak

months of COVID-19 waves (*see fig 2*). Further, comparing institutional and outreach services, the institutional services witnessed disruption of up to 55 percent, however, outreach services noticed decline of 15 -26 percent to its previous level during entire COVID-19 period. Which highlights that the need for limiting methods affected more compared to need for spacing.

Figure 1: Relative change in institutional and outreach services during 2019-2020 & 2020-21 in India/ states in India

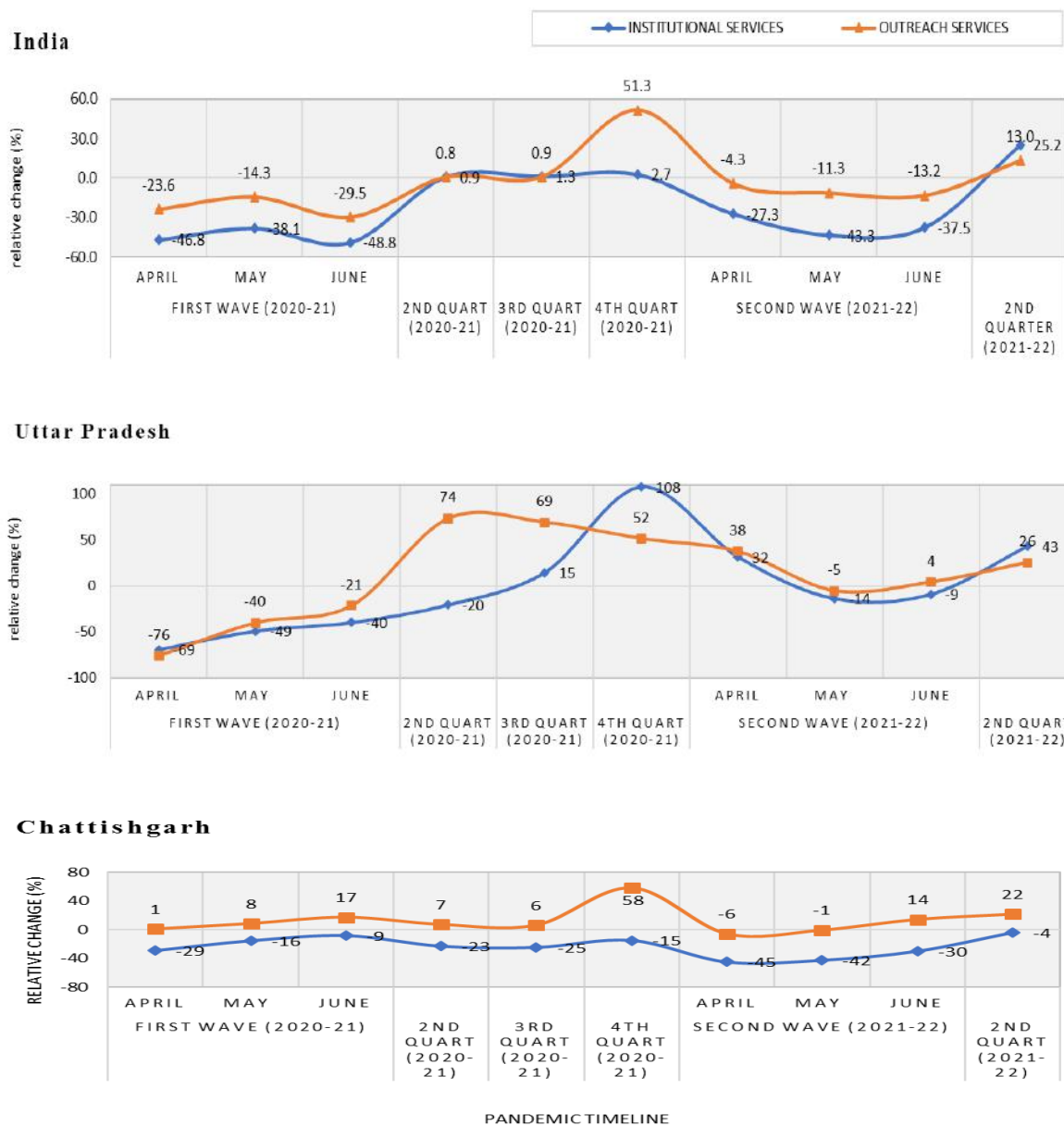
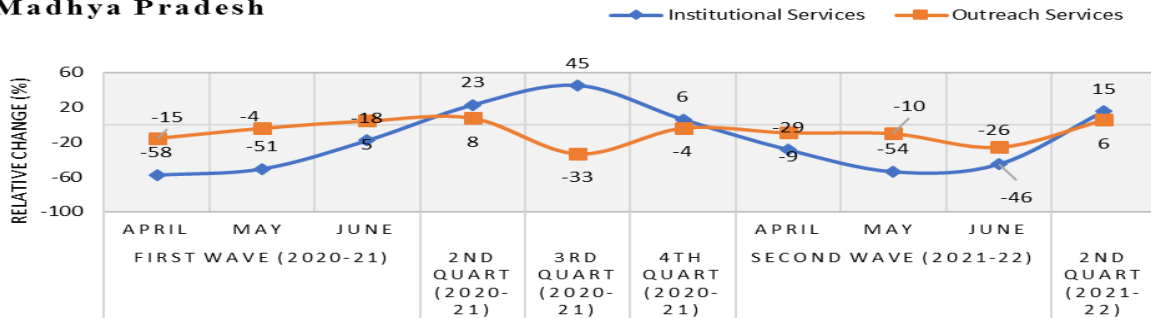
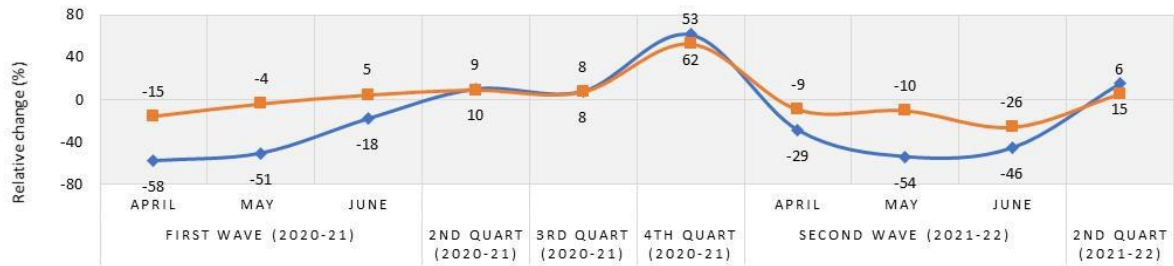


Figure 2: Relative change in institutional and outreach services during 2019-2020 & 2020-21 in states in India

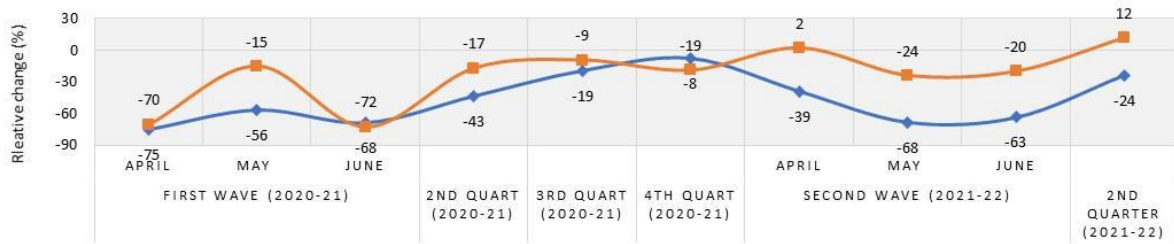
Madhya Pradesh



Rajasthan



Bihar



PandemicTimeline

COVERAGE OF VARIOUS FAMILY PLANNING METHODS

Male Sterilization

Fig 3 highlights that the relative change in male sterilization followed negative trend in all three quarters of the year. Exceptionally UP has recorded positive trend in second quarter,

however negative trend continued for third and fourth quarter. In first quarter (April-June) the relative change in the male sterilization shows negative trend for all six states. The highest downfall have been notices for Chhattisgarh (-94 percent). Although, in second quarter (July-Sep) of the year the improvement has been noticed in Bihar, MP and Rajasthan. It's evident from *fig 3* that the reduction occurred in male sterilization during COVID-19 did not notice any recovering trend to its previous level in last quarter of the year too when the lockdown measures were lifted and virus infection slowed down in the country.

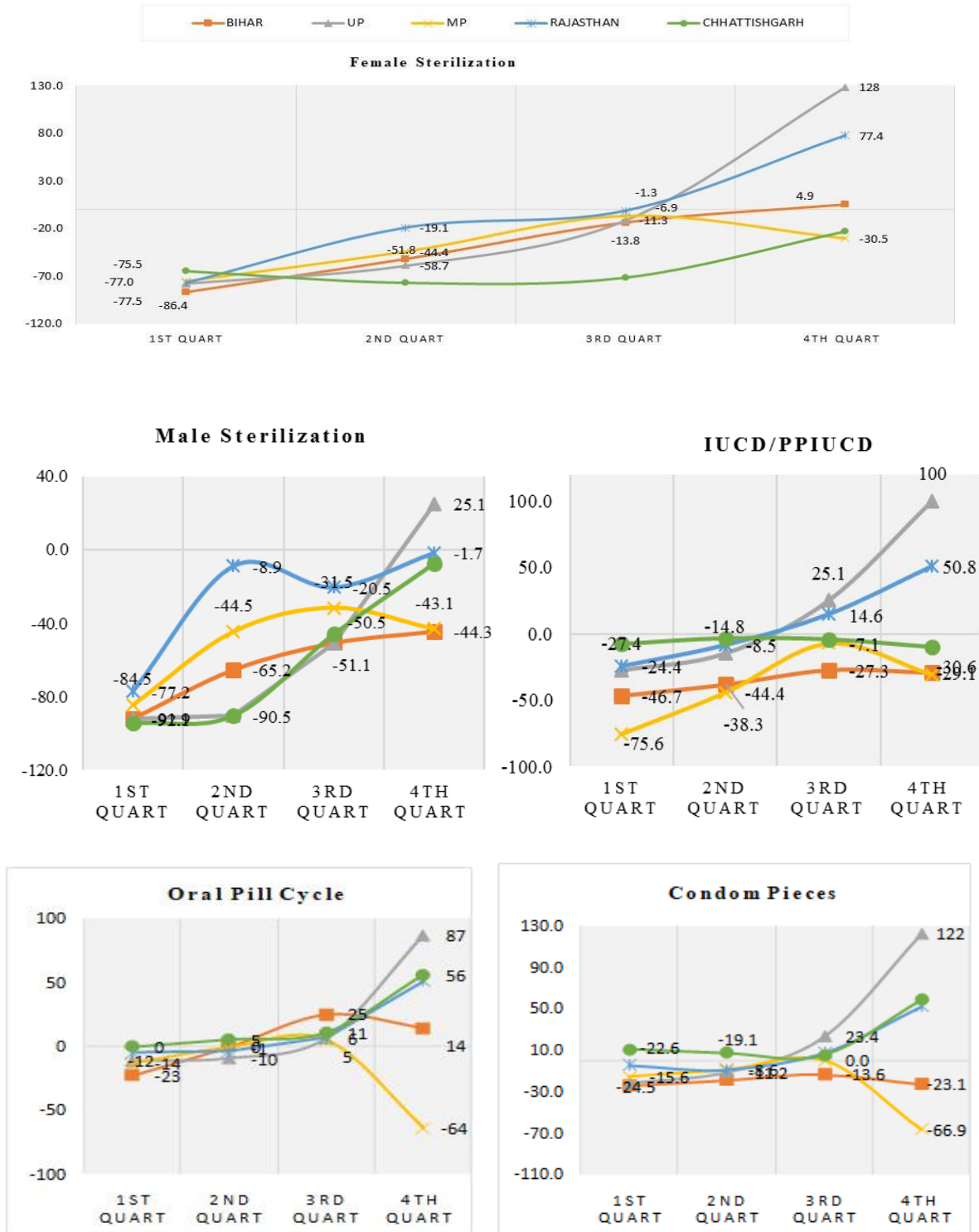
Female Sterilization

Female sterilization is one of the popular family planning method across India. The relative change in female sterilization during COVID and Pre-COVID highlights that till three quarters female sterilization services has followed negative trend across all high focused states. Further, Fig 3 highlights that the highest reduction has been noticed in first quarter of the year when COVID-19 outbreak has been noticed in entire country and lockdown measures has been implemented. The coverage of female sterilization has noticed improving trend in later quarters of the year, despite improvement the coverage followed negative trend for all states except UP, Rajasthan. Looking at across states reduction in female sterilization, it's evident that the highest reduction has been noticed in Chhattisgarh (*see fig 3*).

IUCD Insertion

Looking at coverage of IUCD insertion surprisingly the highest reduction have been noticed in third quarter of year across all high focused states. Similar to other intuitional based family planning services, the highest drop has been noticed in Chhattisgarh compared to other selected states. It evident that UP, MP and Rajasthan has recovered positively from its previous year level in IUCD insertion in fourth quarter of the year (*see fig 3*). Further, In Chhattisgarh, the IUCD insertion has remain constant during all four quarters of year. The highest reduction in IUCD insertion has been noticed in Madhya Pradesh almost across all quarters of the year compare to previous year (2019-20).

Figure 3: Relative Change in Various Family Planning Methods between 2019-20 & 2020-21



Oral Pill Cycle

Fig 3 highlights the relative change in distribution of Oral Pill cycles during 2019 and 2020 for all six high focused states. Relative change highlights that this is least affected family planning method in all states. The variation remains constant during three quarters of years and noticed a recovering trend in last quarter of the year. However, in Madhya Pradesh the negative trend has been observed for last quarter of the year. Looking at relative change state wise the highest downfall has been noticed in Uttar Pradesh for initial three quarters of the year, nevertheless, noted highest recovery in last quarter of the year.

Condom Pieces

Looking at relative change in distribution of condom pieces fig 3 highlights that in most of the states (Bihar and MP) negative pattern remain unchanged throughout the year. However, states like UP, Chhattisgarh and Rajasthan has witnessed relatively less disruption in first three quarters and faster recovery during last quarters has been observed, exceptionally, MP which has noticed a dip of 66 percent during last quarter of the year. Further, across all high focused states in Bihar the distribution of Condoms covered 25 percent less couple during first quarter of the year, which includes strict lockdown measures and mobility restrictions across country (*see fig 3*). Besides this the figure highlights that the states did not notice any positive change in last quarter of the year. In UP, Chhattisgarh and Rajasthan the distribution of condom pieces has covered more couples than previous year distribution.

SUMMARY AND CONCLUSION

At the inception of COVID-19 outbreak, procedures such as social isolation, lockdown methods, and movement restrictions, as well as dread of visiting health facilities, prompted concerns about COVID-19's impact on women's capacity to continue taking contraceptives (Lindberg, 2020; Church, 2020). Further, country like India which shows huge inequality in utilization of family planning services across states, needs greater care during pandemic to address the differing family planning needs of couples. Given the context, the pandemic time

has turn out to be difficult and crucial to monitor the delivery of services, particularly in these high priority states. The analysis from this study highlights that in India family planning services noticed dip of around 50 percent compare to normal situation, which indicate that 50 percent less eligible couples have availed family planning services compare to previous year. Therefore, reduced level of modern contraception might manifest in form of untimed and unwanted pregnancies, poor child health due to low birth interval or reproductive tract infections. Besides, result highlights the poor level of resumption of services during post first wave period in both outreach and institutional services, followed by sharp decline during second wave period. Despite, preparedness and proper guidelines the impact of covid-19 on delivery of services could not be reduced during second period too. It's important to notice here that other than continuous presence of virus, the other factors behind decline in family planning services in both wave periods are bit different. Notwithstanding, the second wave were characterised with shattering public health system, rapid spread of virus and higher loss of life, though less strict restrictions on mobility and delivery of services. Among selected states, only Uttar Pradesh has shown a recovering trend after first wave of COVID-19 and less disruption in second wave period in both institutional and outreach services. Though Uttar Pradesh is state which was severely hit during second wave reported high number of cases and fatality. Other states like Bihar and Assam which were reported relatively less number of cases but higher disruption of services and no signs of recovering trend in delivery of services. It's concerning here that Bihar, which showed relatively highly disrupted family planning services continuously might affect the fertility and family planning programmes in shorter or also at longer run. The state like MP and Chhattisgarh also fall in same category with low resumption in services. Most of institutional services i.e. male sterilization, female sterilization and IUCD remain low in all states throughout year. This pose a great challenge on women's fertility behaviours and country's preparedness to deal with its probable implications.

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Declining Child Sex Ratio of India: A Matter of Concern!

Madhuri Thombre^{1*}

Abstract

This study analyses the impact of socio-cultural and developmental variables on 'Declining Child Sex Ratio of India' with the help of statistical tools such as correlation and multiple regressions. It studies Total CSR (TCSR), along with Rural CSR (RCSR) and Urban CSR (UCSR) at the district level, using census data of 2011, to examine rural-urban differences. Socio-cultural variables include percentage of Scheduled Castes (SC%), Scheduled Tribes (ST%) and 'Others' (OTHRS%). Developmental variables are related to Literacy, Work Participation, Other Workers and Urbanisation.

The major findings are: a) Impact of socio-cultural and developmental variables on CSR was significant at the district level in 2011; b) percentage of SCs and 'Others' had significant negative effect but percentage of STs had significant positive impact; c) literacy-related variables influenced UCSR more positively than TCSR and RCSR; d) among literacy-related variables, only literacy sex ratio affected TCSR, RCSR and UCSR, while remaining ones influenced only UCSR very positively and; male literacy rate had significant negative impact on TCSR and RCSR; e) among work-related variables, male work participation rate, female work participation rate and percentage of workers recorded a significant positive impact on TCSR, RCSR and UCSR; f) impact of a greater number of non-agricultural jobs to women in relation to men was significant positive on rural CSR.

The study suggests that, CSR of India can be improved by encouraging female literacy and reducing a gap between male and female literacy, creating more work opportunities in general and non-agricultural jobs to women in relation to men in rural areas; and by creating a positive attitude towards a girl child among men and women.

Introduction

India experienced economic, scientific and technological development in the twentieth century. It also showed an improvement in many social indicators like infant and maternal

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mortality, life expectancy and literacy over a period of time. In the last two decades, its sex ratio also improved because of better medical and health care facilities, exhibiting the improved women's conditions. However, it experienced a steep fall in Child Sex Ratio (CSR) during the same period, implying deterioration in the well-being of the female children. Though, Sex Ratio improved from 927 in 1991 to 933 in 2001 and 943 in 2011, CSR declined from 945 in 1991 to 927 in 2001 and to 919 in 2011 (Refer Table 1). This paradox of declining CSR with economic growth and improvement in demographic variables calls for an in-depth research to find out the reasons behind a fall in CSR and also the solutions to improve it in future.

Table 1: Sex Ratio and Child Sex Ratio of India (1991 – 2011)

Year	1991	2001	2011
Sex Ratio	927	933	943
Child Sex Ratio	945	927	919

Source: Census of India 1991, 2001 and 2011.

The issue of declining child sex ratio was also faced by many south Asian countries and recently, by eastern European countries. Researchers have come to the conclusion that, the main reasons of decline in Child Sex Ratio (CSR) are, son preference (patriarchal society), decline in fertility and sex selective abortions (Guilmoto, 2010). These three reasons are also applicable to a decline in CSR of India and are explained below:

1 Decline in fertility: Over time, people started realizing benefits of having small families. According to NFHS-3 in 2005-06, among married women and men with two or more children, at least four out of five did not want to have any more children. Two thirds of Indian women and men considered the ideal family size to be two children or less. This thinking led to a decline in total fertility rate (TFR) from 3.39 according to NFHS-1 in 1991-92 to 2.0 according to NFHS-5 in 2019-21.

2 Son preference: Though fertility declined over time, son preference remained intact. According to NFHS-3, twenty percent couples told that, they would like to have more sons than daughters, while only two or three percent wanted to have more daughters than sons. For every number of children, the percentage of women who wanted to stop childbearing, was

lowest if a woman did not have any sons. Among women with two living children, 90% wanted to stop childbearing if both their living children were sons and 87% wanted to stop their childbearing if they had one son and one daughter, whereas only 61% wanted to stop childbearing if they had two daughters and no son. However, it is noteworthy that, the proportion of women with two daughters and no sons who wanted no additional children, increased rapidly from 37% in NFHS-1 to 47% in NFHS-2 to 61% in NFHS-3.

3 Sex selective abortions: The growth of the small family norm or planning the family meant planning for sons and preferably without daughters and certainly not more than one daughter. Thus, preventing the birth of daughters became more deliberate in recent times. Women carry the responsibility and burden for producing the correct 'family' if necessary, through repeated conception and abortion. Therefore, female infanticide in the past was replaced by sex selective abortions of female foetus by going through an ultrasound test. It has been noted that India has more ultrasound machines per population than the west (John et al. 2009).

In recent years, there has been an increased prevalence of mobile private sex determination clinics using ultrasound technology which also often provide abortion services. The mobile clinics displayed advertisement such as "Pay Rs. 50 now and save Rs. 50,000 later" (George, 1997). Thus, widespread use of sex selective techniques and sex selective abortions seemed to have led to a steep decline in CSR. Kelly (2008) argued that around 10 million female foetuses may have been aborted in India over the last two decades. According to the recent figures published in *Lancet*, around 500,000 female foetuses were aborted every year. In the last two decades, child sex ratio fell so low that there is a general agreement that sex selective abortions are largely responsible for it.

The researchers agree that the basic reason of declining CSR is 'Son preference', followed by gender discrimination, which is the culmination of both economic and socio-cultural factors and it has not changed, along with economic and social changes. The reasons for son preference given by the people are that they need to have a son to provide them with support in old age and carry on the family name and also to give them social status. It is also a fact that sons inherit property in the patrilineal culture. In contrast, daughters are perceived as liabilities, mainly because of dowry. (Larsen, 2011). Because of son preference, as family

size decreases owing to decline in fertility, total number of children that couples desire falls more rapidly than the total number of desired sons, thus increasing the proportion of sons per couple (Clark, 2000).

In this context, Miller (1981) discussed 'North-South Divide' while explaining the differences in sex ratio. She believed that there were broadly two cultures at work. The northern culture was more masculinist and the southern one more feminist or at least more egalitarian. She considered the relatively low rates of work participation in agriculture in the north - "Work is worth" in her famous phrase and high marriage costs and dowry as a serious threat for daughters. In addition to it, Dyson and Moore (1983) attributed the north-south divide to differential kinship arrangements. They explained further that northern and western states are characterized by exogamous marriage system (bride being away from her natal home resulting in extreme isolation from her natal kin), lower autonomy, no share in inherited property and greater discrimination as compared with their southern counterparts. It leads to lower sex ratio in the north than that in the south. In contrast, southern and eastern states are characterized by relatively low fertility, late age at first marriage, lower marital fertility, lower infant and child mortality, share in inherited property, sometimes familiarity with the patrilineal household and greater autonomy and favourable status. It leads to higher sex ratio.

However, it is suggested by researchers that CSR can be improved by urbanization and industrialization to increase jobs, improve incomes and retirement savings, which will reduce dependence on son. (Chung and Dasgupta, 2007). Further, by promoting education and employment among women, their economic value will increase and will lead to less discrimination against girl child, resulting in high CSR (Agnihotri, 2002). He also observed that, wherever the proportion of Scheduled Tribes is high, CSR tends to be higher. In contrast, CSR of upper castes is lower than that of lower castes.

According to the researcher's knowledge, a comprehensive District-Level study of 'Declining Child Sex Ratio of India', considering both socio-cultural and developmental factors has not been undertaken so far, so the present study focuses on this aspect, trying to find out its reasons and explore solutions to improve it.

Methodology

Nature of Study: This study briefly analyses the levels, trend and pattern, shown by CSR of India in three types i.e., Total CSR (TCSR), Rural CSR (RCSR) and Urban CSR (UCSR) to assess rural-urban differences, if any. It also analyses the levels and pattern shown by CSR of three types at the district level for the year 2011. The present study is analytical and it has used statistical tools such as correlation and multiple regressions. Correlation is used to examine the relationship between CSR and different variables individually. These variables are classified into two, socio-cultural variables and economic or developmental variables. Socio-cultural variables include percentage of Scheduled Castes, Scheduled Tribes and 'Others' (Upper Castes). To examine the impact of these socio-cultural variables on CSR individually, this study analyses CSR in three different cases i.e., SCs, STs and Others along with four combinations of developmental variables, using multiple regressions. Developmental variables are related to literacy, work participation, non-agricultural (Other) workers and urbanization. The list of the variables used for the analysis mentioned above, with their abbreviations is given in Table 4. The whole analysis of correlation and multiple regressions is conducted at the district level to bring authenticity to the results because of its large sample size (640 districts). It also aims to study how the socio-cultural and developmental variables are related with and influence not only TCSR but also RCSR and UCSR separately. It will help to understand which of these variables have similar or different impact on RCSR and UCSR and to what extent.

Since declining CSR is a gender issue, this study analyses the impact of gender neutral as well as gender specific developmental variables on CSR separately in four types of multiple regressions. The first type includes gender neutral variables like the percentage of workers, percentage of literates, percentage of other workers and percentage of urbanization. The second and third type include gender specific variables like male literacy rate and male work participation rate; and female literacy rate and female work participation rate respectively. To understand the condition of women in relation to men and CSR being a ratio, the fourth type includes different ratios such as sex ratio of literacy, sex ratio of work participation and sex ratio of other workers. This analysis ascertains the factors which have a positive or negative

impact on CSR, thus enabling us to find out the reasons behind the fall in CSR and also recommend solutions to improve the same in future.

Area and period of study: This study briefly analyses CSR of India in three types i.e., Total CSR (TCSR), Rural CSR (RCSR) and Urban CSR (UCSR) for the years 1991, 2001 and 2011 (Refer Table 2). It also analyses all three types of CSR for the year 2011, using census data for its districts. The number of districts of India are shown in Table 3. The whole analysis of the three types of CSR, using correlation and multiple regressions, is conducted at the district level for the year 2011.

The states and union territories are grouped as follows:

Northern states and union territories: J&K., H.P., Uttarakhand, Punjab, Haryana, Chandigarh, NCT of Delhi, U.P. Rajasthan, M.P., Bihar.

North western states and union territories: Gujarat, Maharashtra, Daman & Diu, Dadra & Nagar Haveli.

North eastern states: Sikkim, Arunachal Pradesh, Meghalaya, Nagaland, Tripura, Manipur, Mizoram, Assam.

Eastern states: West Bengal, Jharkhand, Chhattisgarh, Odisha.

Southern States and union territories: Goa, Karnataka, A.P., T.N., Kerala, Puducherry Lakshadweep, Andaman & Nicobar.

Table 2: CSR of India: 1991, 2001, 2011

CSR	1991	2001	2011
TCSR	945	927	919
RCSR	948	934	923
UCSR	935	906	905

Source: Census of India, 1991, 2001, 2011.

Table 3: Number of States and Districts of India (2011)

Type	Total	Rural	Urban
Districts	640	631	637

Source: Census of India, 2011.

Table 4: List of variables used for the analysis

Socio Cultural Variables	Abbreviations
% of scheduled cast population	SC %
% of scheduled tribes population	ST %
% of "others" population	OTHR%
Developmental Variables	Abbreviations
% of Literates	LIT %
% of Workers	W %
% of Other Workers	OW %
% of Urbanization	URBN %
Male Literacy Rate	MLITRT
Female Literacy Rate	FLITRT
Male Work Participation Rate	MWPRT
Female Work Participation Rate	FWPRT
Literacy Sex Ratio	LSR
Work Participation Sex Ratio	WPSR
Other Workers Sex Ratio	OWSR
Dependent Variables	Abbreviations
Total Child Sex Ratio	TCSR
Rural Child Sex Ratio	RCSR
Urban Child Sex Ratio	UCSR

In India, Child Sex Ratio is defined as number of female children per thousand male children (0-6 years), whereas, internationally, it is defined as number of male children per hundred female children.

Limitations of study: The study is based on secondary data collected from the census reports, selecting those relevant variables whose data is available in the census. The researcher is aware that there are many other variables affecting CSR of India, but due to non-availability of such data, these are not considered.

Results

District level analysis of CSR of India (2011 census):

Analysis of CSR of districts of India: Levels and Pattern

According to census 2011, among 640 districts, the lowest TCSR was shown by Mahendragarh (775) from Haryana, and there were six districts, showing TCSR below 800, four from Haryana and two from J & K. The number of districts having TCSR 900 or below,

was 177 and were mostly from the northern and north western states, barring three from Odisha, two from Tamil Nadu and one each from north eastern states like Nagaland, Manipur and Arunachal Pradesh. The district Lahul and Spiti from Himachal Pradesh recorded the highest TCSR (1033) and one each from Chhattisgarh and Arunachal Pradesh also had TCSR above 1000. There were 209 districts, having TCSR 950 or above. Mostly they were from the north eastern, eastern and southern states, barring seven each from M.P. and Bihar, four from H.P. three from Maharashtra and two from Gujarat.

According to census 2011, among 631 districts, East of the NCT of Delhi recorded the lowest RCSR (716) and there were eleven districts showing RCSR 800 or below, five of them were from Haryana, three from NCT of Delhi, two from J&K and one from Maharashtra. The number of districts having RCSR 900 or below was 160 and were mostly from the northern and north western states, except four from T.N., two from Odisha and one each from Manipur and Arunachal Pradesh. The district Lahul and Spiti of H.P. showed the highest RCSR (1033) and five more districts had RCSR above 1000, of which three were from Arunachal Pradesh and two from Chhattisgarh. There were 223 districts, registering RCSR 950 or above. Mostly they were from the southern, eastern and north eastern states, barring eight from M.P., seven from Bihar, six from Maharashtra, four from H.P., two from Gujarat and one from U.P.

According to census 2011, among 637 districts, the lowest UCSR was shown by Pithoragarh(724) from Uttarakhand and ten districts had UCSR below 800. These included four from Haryana, three from J&K, two from Uttarakhand and one from Gujarat. The number of districts showing UCSR 900 or below was 239 in 2011. These were mostly from the northern and north western states, barring seven from Odisha, three each from Arunachal Pradesh and Jharkhand and one from Sikkim. The district Anjaw from Arunachal Pradesh recorded the highest UCSR (1128), followed by North and Middle Andaman district (1110), having UCSR even above 1100 in 2011. There were seven districts, registering UCSR above 1000, of which three were from Arunachal Pradesh, two each from Nagaland and Meghalaya. There were 133 districts, having UCSR 950 or above. Mostly these belonged to the north eastern, eastern and southern states, except three from Bihar, two from J&K and one each from M.P. and U.P.

Correlation analysis of district level CSR of India (2011 census):

It is evident from **Table 5** that, among socio-cultural variables, SC (per cent) and OTHRS (per cent) were negatively correlated to a significant extent, while ST (per cent) per cent had a significant positive correlation, with TCSR, RCSR and UCSR of India in 2011. It was good to see that, UCSR had significant positive correlation with all developmental variables related to literacy and work, except with the percentage of other workers. Among literacy-related variables, only literacy sex ratio had a significant positive correlation with TCSR, RCSR and UCSR, but surprisingly, the percentage of literates and male literacy rate had a significant negative correlation with TCSR and RCSR. All work-related variables, except the percentage of other workers, correlated positively to a significant extent, with TCSR, RCSR and UCSR.

Table 5: Correlation summary of district level CSR of India (2011)

Variables	2011		
	TCSR	RCSR	UCSR
SC (per cent)	(0.35***)	(0.35***)	(0.33***)
ST (per cent)	0.41***	0.41***	0.38***
OTHRS (per cent)	(0.35***)	(0.34***)	(0.31***)
LIT (per cent)	(0.10*)	(0.13*)	0.17**
W (per cent)	0.34***	0.33***	0.28***
OW (per cent)	-0.07	-0.03	0.07
M LITRT	(0.17**)	(0.21**)	0.11*
F LITRT	-0.03	-0.04	0.23**
MWPRT	0.21**	0.24**	0.12*
FWPRT	0.37***	0.34***	0.44***
LSR	0.29***	0.26***	0.43***
WPSR	0.38***	0.35***	0.46***
OWSR	0.47***	0.35***	0.46***
URBN (per cent)	(0.18**)	NA	NA

Note: ***, **, and * significant 1per cent, 5per cent and 10per cent levels. Figures in parentheses indicate negative t-values. NA: Not applicable.

Analysis of District level TCSR of India (2011 census)

It is clear from **Table 6** that, among socio-cultural variables, SC (per cent) and OTHRS (per cent) had a significant negative impact, while ST (per cent) had a significant positive impact on TCSR. Among literacy-related developmental variables, only literacy sex ratio had a significant positive impact; and female literacy rate had a positive impact in the case of ST (per cent) and OTHRS (per cent) while a significant positive one in the case of SC (per cent). However, the percentage of literates influenced TCSR negatively and male literacy rate had a significant negative impact on TCSR in 2011. Among work-related variables, the percentage of workers, male work participation rate, female work participation rate, work participation sex ratio and other workers sex ratio influenced TCSR positively to a significant extent, while the percentage of other workers showed significant positive impact only in the first and third type in the case of ST (per cent) and OTHRS (per cent) but not so in the case of SC (per cent). The impact of the percentage of urbanization was significant negative.

Analysis of District level RCSR of India (2011 census)

It is observed from **Table 7** that, the impact of SC (per cent) and OTHRS (per cent) was significant negative, while that of ST (per cent) was significant positive on RCSR in 2011. Among literacy-related developmental variables, only literacy sex ratio had a significant positive impact on RCSR, while male literacy rate and the percentage of literates had significant negative impact; and female literacy rate had no significant positive or negative rate on RCSR. Among work-related developmental variables, male and female work participation rate, percentage of workers, work participation sex ratio and other workers sex ratio RCSR very positively, but only percentage of other workers had no significant positive or negative impact on RCSR in 2011.

Table 6: Regression of determinants of District level TCSR of India (2011)

TYPE - 1								
Variables	Sched.Castes		Variables	Sched. Tribes		Variables	OTHERS	
	Coeff 2011	t stat		Coeff 2011	t stat		Coeff 2011	t stat
TSC (%)	-1.43	(8.52***)	TST (%)	0.49	7.74***	TOTHRS (%)	-0.44	(5.50***)
TLIT (%)	-0.10	-0.55	TLIT (%)	-0.16	-0.88	TLIT (%)	-0.21	-1.08
TW (%)	1.54	6.73***	TW (%)	1.01	4.01***	TW (%)	1.20	4.58***
TOW (%)	0.27	0.71	TOW (%)	0.84	2.22**	TOW (%)	0.90	2.28**
URBN%	-0.35	(2.79***)	URBN%	-0.38	(3.01***)	URBN%	-0.37	(2.92***)
Adj. R Sq.	0.21		Adj. R Sq.	0.20		Adj. R Sq.	0.16	
TYPE - 2								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
TSC (%)	-1.71	(10.34***)	TST (%)	0.56	9.70***	TOTHRS (%)	-0.52	(7.31***)
TMLITRT	-0.56	(2.77***)	TMLITRT	-0.54	(2.62***)	TMLITRT	-0.64	(3.08***)
TMWPRT	2.68	7.85***	TMWPRT	1.99	5.80***	TMWPRT	1.88	5.28***
TOW (%)	-0.36	-0.92	TOW (%)	0.38	0.97	TOW (%)	0.60	1.49
URBN%	-0.33	(2.74***)	URBN%	-0.34	(2.79***)	URBN%	-0.37	(2.96***)
Adj. R Sq.	0.24		Adj. R Sq.	0.22		Adj. R Sq.	0.18	
TYPE - 3								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
TSC (%)	-1.33	(7.76***)	TST (%)	0.46	6.95***	TOTHRS (%)	-0.39	-4.73
TFLITRT	0.27	1.75*	TFLITRT	0.18	1.47	TFLITRT	0.19	1.19
TFWPRT	0.93	6.59***	TFWPRT	0.65	4.06***	TFWPRT	0.82	5.05***
TOW (%)	0.34	0.92	TOW (%)	0.80	2.13**	TOW (%)	0.83	2.16**
URBN%	-0.40	(3.23***)	URBN%	-0.41	(3.32***)	URBN%	0.41	(3.19***)
Adj. R Sq.	0.22		Adj. R Sq.	0.20		Adj. R Sq.	0.17	
TYPE - 4								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
TSC (%)	-1.06	(6.62***)	TST (%)	0.33	5.22***	TOTHRS (%)	-0.24	(3.14***)
TLSR	0.09	5.90***	TLSR	0.09	5.98***	TLSR	0.09	5.90***
TWPSR	0.02	2.58***	TWPSR	0.01	1.49	TWPSR	0.02	2.26**
TOWSR	0.12	5.49***	TOWSR	0.12	5.27***	TOWSR	0.13	5.7***
URBN%	-0.43	(5.51***)	URBN%	-0.37	(4.7***)	URBN%	-0.35	(4.46***)
Adj. R Sq.	0.33		Adj. R Sq.	0.31		Adj. R Sq.	0.29	

Note: Figures in parentheses indicate absolute negative t-values; ***, ** and * significant 1 per cent, 5 per cent and 10 per cent levels respectively.

Table 7: Regression of determinants of District level RCSR of India (2011)

TYPE - 1								
Variables	Sched.Castes		Variables	Sched. Tribes		Variables	OTHERS	
	Coeff 2011	t stat		Coeff 2011	t stat		Coeff 2011	t stat
RSC (%)	-1.29	(8.07***)	RST (%)	0.50	8.06***	ROTHRS (%)	-0.47	(5.93***)
RLIT (%)	-0.45	(2.54**)	RLIT (%)	-0.45	(2.54**)	RLIT (%)	-0.51	(2.82***)
RW (%)	1.53	7.54***	RW (%)	1.08	4.89***	RW (%)	1.23	5.43***
ROW (%)	0.08	0.25	ROW (%)	0.48	1.50	ROW (%)	0.58	1.75*
Adj. RSq.	0.20		Adj. RSq.	0.20		Adj. RSq.	0.16	
TYPE - 2								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
RSC (%)	-1.53	(9.84***)	RST (%)	0.55	9.58***	ROTHRS (%)	-0.52	(7.17***)
RMLITRT	-0.95	(4.98***)	RMLITRT	-0.83	(4.26***)	RMLITRT	-0.95	(4.77***)
RMWPRT	2.66	8.64***	RMWPRT	2.01	6.47***	RMWPRT	1.95	6.01***
ROW (%)	-0.51	-1.61	ROW (%)	0.06	0.18	ROW (%)	0.21	0.65
Adj. RSq.	0.24		Adj. RSq.	0.23		Adj. RSq.	0.18	
TYPE - 3								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
RSC (%)	-1.23	(7.50***)	RST (%)	0.51	7.80***	ROTHRS (%)	-0.47	-5.75
RFLITRT	0.01	0.01	RFLITRT	-0.07	-0.48	RFLITRT	-0.08	-0.50
RFWPRT	0.91	7.03***	RFWPRT	0.63	4.44***	RFWPRT	0.77	5.34***
ROW (%)	-0.05	-0.15	ROW (%)	0.35	1.04	ROW (%)	0.43	1.27
Adj. RSq.	0.18		Adj. RSq.	0.19		Adj. RSq.	0.15	
TYPE - 4								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
RSC (%)	-1.03	(6.51***)	RST (%)	0.41	6.49***	ROTHRS (%)	-0.36	(4.59***)
RLSR	0.07	4.93***	RLSR	0.07	4.98***	RLSR	0.08	5.20***
RWPSR	0.04	5.18***	RWPSR	0.03	3.43***	RWPSR	0.04	4.27***
ROWSR	0.08	4.33***	ROWSR	0.07	3.95***	ROWSR	0.08	4.10***
Adj. RSq.	0.26		Adj. RSq.	0.26		Adj. RSq.	0.23	

Note: Figures in parentheses indicate absolute negative t-values; ***, ** and * significant 1 per cent, 5 per cent and 10 per cent levels respectively.

Table 8: Regression of determinants of District level UCSR of India (2011)

TYPE - 1								
Variables	Sched.Castes		Variables	Sched. Tribes		Variables	OTHERS	
	Coeff 2011	t stat		Coeff 2011	t stat		Coeff 2011	t stat
USC (%)	-1.92	(7.77***)	UST (%)	-7.77	7.48***	UOTHR (%)	-0.54	(5.43***)
ULIT (%)	1.16	4.04***	ULIT (%)	4.04	2.63***	ULIT (%)	0.87	2.90***
UW (%)	3.88	7.88***	UW (%)	7.88	6.29***	UW (%)	3.58	6.85***
UOW (%)	-2.54	(5.77***)	UOW (%)	-5.77	(4.04***)	UOW (%)	-2.10	(4.47***)
Adj. R Sq.	0.20		Adj. R Sq.	0.20		Adj. R Sq.	0.17	
TYPE - 2								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
USC (%)	-2.55	(9.83***)	UST (%)	1.03	12.11***	UOTHR (%)	-0.95	(9.48***)
UMLITRT	0.84	2.41**	UMLITRT	0.03	0.08	UMLITRT	0.13	0.37
UMWPRT	3.21	5.47***	UMWPRT	4.07	7.01***	UMWPRT	3.42	5.74***
UOW (%)	-2.20	(4.05***)	UOW (%)	-2.39	(4.54***)	UOW (%)	-1.94	(3.57***)
Adj. R Sq.	0.15		Adj. R Sq.	0.21		Adj. R Sq.	0.14	
TYPE - 3								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
USC (%)	-1.49	(6.01***)	UST (%)	0.39	4.14***	UOTHR (%)	-0.23	(2.13**)
UFLITRT	0.77	3.57***	UFLITRT	0.63	2.81***	UFLITRT	0.75	3.29***
UFWPRT	2.73	9.64***	UFWPRT	2.49	7.72***	UFWPRT	2.84	8.85***
UOW (%)	-0.82	(2.67***)	UOW (%)	-0.61	(1.91*)	UOW (%)	-0.78	(2.40**)
Adj. R Sq.	0.25		Adj. R Sq.	0.23		Adj. R Sq.	0.21	
TYPE - 4								
Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat	Variables	Coeff 2011	t stat
USC (%)	-1.63	(6.87***)	UST (%)	0.50	5.41***	UOTHR (%)	-0.32	(3.07***)
ULSR	0.15	7.64***	ULSR	0.16	7.86***	ULSR	0.15	7.21***
UWPSR	0.11	4.00***	UWPSR	0.10	3.49***	UWPSR	0.11	4.04***
UOWSR	-0.01	-0.29	UOWSR	-0.04	-0.90	UOWSR	-0.02	-0.46
Adj. R Sq.	0.33		Adj. R Sq.	0.31		Adj. R Sq.	0.29	

Note: Figures in parentheses indicate absolute negative t-values; ***, ** and * significant 1 per cent, 5 per cent and 10 per cent levels respectively.

Analysis of District level UCSR of India (2011 census)

It is evident from **Table 8** that, among socio-cultural variables, SC (per cent) and OTHRS (per cent) had a significant negative impact, while ST (per cent) had a significant positive impact on UCSR in 2011. Among literacy-related developmental variables, the percentage of literates, female literacy rate and literacy sex ratio influenced UCSR very positively in all three cases, but male literacy rate affected very positively only in the case of SC (per cent). Among work-related developmental variables, the percentage of workers, male work participation rate, female work participation rate and work participation sex ratio affected UCSR positively to a significant extent. Surprisingly, the percentage of other workers had a significant negative impact and the negative impact of other workers sex ratio was not significant on UCSR.

Discussions and Conclusion:

The district-level analysis exhibits a particular pattern regarding the level of TCSR, RCSR and UCSR among the states of India according to census 2011. It clearly shows that mostly, the northern and north western states showed low CSR, whereas, the north eastern, eastern and southern states exhibited high CSR, barring a few exceptions.

The impact of the socio-cultural variables on CSR was noteworthy at the district level. The significant negative correlation of SC% and OTHRS% and their strong negative impact on CSR of all three types implies that scheduled castes and upper castes are more patriarchal in nature; and have strong son preference and a negative attitude towards a girl child, which may result in daughter aversion through sex-selective abortions. In contrast, ST%, had a very positive correlation and had a significant positive impact on CSR of all three types, because scheduled tribes are on the periphery of a patriarchal system and female labour is regarded as a valuable source of income and so they have a positive attitude towards a girl child. Thus, individually, socio-cultural variables had a uniform impact, either positive or negative, on both RCSR and UCSR. It shows a strong cultural system prevailing in India.

However, in the case of the correlation and an impact of the developmental variables, dichotomy was evident between rural and urban areas. Due to the relatively higher economic and social development in the urban areas as compared to the rural areas, a greater number of developmental variables exhibited highly positive correlation with and significant positive impact on UCSR than in the case of RCSR.

Among literacy-related developmental variables, all four variables, i.e., percentage of literates, male literacy rate, female literacy rate and literacy sex ratio had a very positive correlation with and a significant positive impact on UCSR. It shows that, the spread of literacy and the relatively higher level of education in the urban areas, will create a positive attitude among both men and women, towards a girl child and that will help to improve UCSR in future. In contrast, only one among four literacy-related variables, i.e. literacy sex ratio had a very positive correlation with and a significant positive impact on RCSR. It suggests that, it is not only encouraging female literacy but more importantly, by ensuring that, increase in the female literacy rate is more than increase in the male literacy rate, i.e., by reducing a gap between male and female literacy, women in rural areas will develop a positive attitude towards a girl child, which in turn will result in an improvement in RCSR. On the contrary, male literacy rate had very negative correlation with and a significant negative impact on RCSR, which implies that, literate rural men remain patriarchal and continue to have a negative attitude towards a girl child. Thus, it can be concluded that, RCSR can be improved, only if the rate of increase in female literacy is higher than that of male literacy, which is a reflection of the relative status of women compared to men.

Among work-related variables, it was observed that, except percentage of other workers, all other work-related variables like percentage of workers, male work participation rate, female work participation rate, work participation sex ratio, had significant positive correlation with and very positive impact on all three types of CSR. It implies that, more work opportunities for men and women in rural areas will lead to more acceptance of a daughter and so it will have a positive impact on RCSR and UCSR. The variable other workers sex ratio had significant positive impact on RCSR, but not so in the case of UCSR. Therefore, by creating

more non-agricultural jobs for women in relation to men in rural areas, RCSR can be improved. The variable percentage of urbanization had significant negative impact on TCSR.

It can be concluded that, by encouraging female education, creating employment for both men and women and non-agricultural jobs in rural areas, especially for women, CSR of India can be improved. Coupled with these measures, legal measures such as banning female feticide, protecting women against violence and giving them property rights, effectively implementing Dowry Prohibition Act, will be in the interest of women in general and girls in particular. Government schemes for girls to educate them and the role of media in creating awareness about the value of a girl child as well as a positive attitude towards her, will have far-reaching impact on bringing gender balance and gender equality in the society.

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