Original Article

Magnitude and determinants of "Social Capital" among women in reproductive age group - A cross-sectional study from rural Wardha, Central India

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Abstract

Context: Social capital reflects the trust, norms, values and social processes that governs interaction among people. **Aim:** This study was conducted to estimate the magnitude and determinants of social capital among women of reproductive age group in selected village of rural Wardha, Central India. **Materials and Methods:** It was a community based cross-sectional study where two stage cluster sampling technique was used to select 300 participants from 22 villages. Data were collected using a pre-designed interviewer administered questionnaire by house-to-house survey. Social capital was measured using the core set of Integrated Questionnaire for the Measurement of Social Capital developed by World Bank. **Statistical Analysis:** Multivariate linear regression was applied to find out determinants of social capital. **Results:** Most of the participants had poor social capital score (women having lowest and middle tertile scores were 36.0% and 45%, respectively). social capital poorer in younger women, women with lower educational qualification, not involved in gainful occupation, belonging to below poverty line and unmarried compared to their counterparts. Having at least one son was positively associated with higher social capital. In adjusted analysis, age, education, occupation, marital status, and whether the woman has son were revealed as significant determinants of social capital. **Conclusion:** The study findings reflect the need of improving education and job opportunity among rural women to improve their social capital. Increase of social capital among women having male child reflects the need to percolate the message of gender equity and gender sensitive education.

Keywords: Determinant, rural, social capital, women of reproductive age group

Introduction

Capital, in its various forms, either singly or in combination influences people's life chances and trajectories. Portes[1] suggested three types of capitals namely economic, human and social capital as most important among them. Social capital is refers to "those tangible assets that count for the most in the daily lives of the people; namely goodwill, fellowship, sympathy, and social intercourse among the individuals and families who make up social unit".[2] Social capital represents the internal social and cultural coherence of society. It is the trust, norms, values and social processes that govern interactions among people and the networks in which they are embedded. It can be conceptualized as a specific characteristic of social environment that facilitates people's cooperation. Improvement of social capital is expected to be immensely beneficial for individuals, organizations and the society as a whole. The concept of social capital and its association with equities and health was

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promulgated by Pierre Bourdieu, James Coleman and Robert Putman.[3,4]

Social capital has quantifiable effects on many different aspects of human lives such as improved health, improved longevity, reduced crime rates, better educational achievements, income equality, reduced rates of child abuse, efficient governance, and more economic achievements which are required to achieve Sustainable Development Goals.[4] It is considered as an important resource for health promotion. It helps in the dissemination of health-enabling knowledge, influences healthy behavioral norms, enhances access to health care services and facilities, and gives rise to affective support and mutual respect through psychological processes.[5] In a study conducted in selected European countries, Rocco L *et al.*,[6] observed that with every 10% increase in the individual trusts, the probability of positive health goes up by 2.8%. The *Ottawa charter* had emphasized healthy public policy, supporting environments, community action, personal skills and reorienting health services as actions for health promotion.[7] The people with poor access to health care largely depend on social capital for their health care needs.[8] Social capital also increases economic efficiency through supporting cooperation, and is considered as one of the key factors of economic development.[9] An understanding of the extent and determinants of social capital among study populations would help find sustainable ways for planning health services, keeping the limitations of resources, access to information and health care in mind, which is of utmost importance in primary care setting.

Data on social capital among women in India is scarce, and to the best of our knowledge no published literature is available on this topic in the current study settings. Improvement in social capital is more pertinent in resource poor settings like rural areas and for the women of reproductive age group, who frequently experience social vulnerability in the patriarchal social system. Considering the importance of social capital in achievement of health and Sustainable Development Goals, and considering the research gap on this relatively unexplored domain of sociology, this study was carried out to assess the magnitude of social capital and to find out its determinants among women of reproductive age in rural Wardha, Central India.

Materials and Methods

Study setting and study population

A community based analytical cross-sectional study was conducted in Wardha district of Maharashtra, Central India. Wardha is having a population of 1,300,774 with a large proportion (67.5%) residing in rural areas. As per 2011 India census, the district has 48.6% female population with a sex ratio of 946. The average literacy rate of Wardha is higher than that of national average (86.99% vs 74.0%), female literacy being 81.81%. Out of 27 Primary Health Centres (PHC), in the district, Kharangana (Gode) PHC with population of 36769 spread over 22 villages was purposively chosen for this study. Study population included all women in the

reproductive age group (15-49 years) residing in the area served by Kharangana (Gode) PHC.[10,11]

Sample size and sampling technique

Due to unavailability of published data on social capital in the study setting, proportion of women with favorable social capital was considered as 50% for calculating sample size., Further, considering 5% alpha error and 10% allowable error in the estimate of proportion and design effect of 2, sample size was calculated as 210. A total of 300 women in the reproductive age group were planned to be studied to cover for non-response. Study subjects were selected by two stage cluster sampling technique. In the first stage, 30 clusters were identified by probability proportionate to size of the population technique where individual villages were considered as clusters. The next step was selection of 10 eligible respondents from each cluster by random walk method.

Study variables

Data were collected using a pre-designed interviewer administered questionnaire by house-to-house survey. Before declaring unavailable, three attempts were made so that minimum drop-out rate is achieved. One eligible participant was randomly selected from each family.

The core set of survey questions of Integrated Questionnaire for the Measurement of Social Capital (SC-IQ) developed by World Bank.[12] was used to measure social capital. It consists of six domains namely Groups and networks, Trust and solidarity, Collective action and cooperation, Information and communication, Social cohesion and inclusion, and Empowerment and political action. The questions from the original questionnaire were modified in the local context and reliability was tested. Face and content validity of this instrument was assessed by a group of social scientists. Two questions did not show any variance during pilot testing, and hence dropped from the analysis. The final scale showed a decent performance, indicated by its internal consistency (Cronbach's alpha- 0.662).

Socio-demographic determinants of social capital, such as age (in years), years of schooling, occupation, socio-economic status, religion, caste category, marital status, number of children, number of sons, and type of family were included in the study. Socio-economic status was measured type of ration card the respondent has and was categorized as *Antyodaya* (very poor), below poverty line (BPL), and Above Poverty Line (APL).

Statistical analysis

Data was entered and analyzed using SPSS 18.0. Continuous variables were tested for assumption of normality and were expressed as mean and their standard deviation if the assumption of normality is mate. The categorical variables were expressed in terms of percentages. Distribution of social capital has been expressed in tertiles. Univariate analysis was done with social capital as dependent variables and socio-demographic

correlates as independent variables. ANOVA and Student's *t* test of significance were used appropriately to test the mean difference of social capital score among different categories of socio-demographic correlates. Multivariate linear regression was applied using backward stepwise model to find out determinants of social capital, where all the independent variables were entered in the model. The data were tested for assumption of multi-collinearity. The model was evaluated for the stress. Independence of observation was checked by Durbin Watson value. The assumption of homogeneity of variance was established by looking at the scatterplot of unstandardized residual versus unstandardized predicted value. Linear relationship between outcome and each independent variables (individually and collectively) were ascertained by the shape of the scatterplot. The coefficient of determination (R^2) value for the model fit has been reported.

The study has been carried out after necessary institutional and ethical permission. The participants were recruited after obtaining written informed consent. Anonymity and confidentiality were maintained throughout the article.

Results

Background information of study participants

Among the study participants, majority were from age group of 26-35 years; (49.0%) had education between 5th to 10th standard (56.3%); Hindu by religion (91%); married (96.3%) and had nuclear families (68.3%). Twenty-seven percent of them belonged to BPL. Majority of the participants were laborer by profession, (48.7%) followed by housewives (46.3%). Five percent had no living child and 25% had no living son.

Social capital and its distribution

The mean (SD) social capital in study subjects was 14.1 (2.8). Tertile distribution of the social capital score revealed that 36.0% and 45% of the women belonged to lowest and middle tertile, respectively, whereas least (19%) were from highest tertile [Table 1]. Distribution of social capital score has been depicted in Figure 1.

Association of social capital with socio-demographic determinants

Older women had higher mean (SD) social capital score (14.3 ± 2.8) than the younger women (13.4 ± 2.5) did, but the difference by age was not statistically significant. Women who had education more than 10th standard had social capital of 14.9 (2.5) as compared to 13.1 (3.6) among those women who had

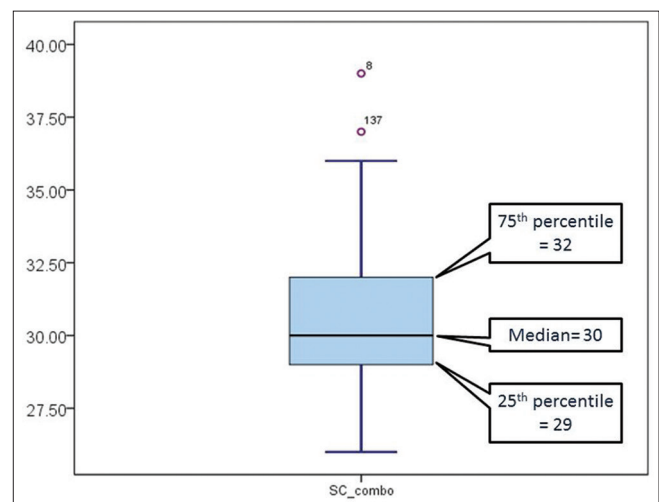| Table 1: Tertile distribution of social capital (*n*=300)		
Social capital (Tertile)	Frequency	Percentage
Lowest tertile	108	36.0
Middle tertile	135	45.0
Highest tertile	57	19.0
Overall	300	100.0

education less than fifth standard, the difference being statistically significant. Mean (SD) social capital among BPL women was 13.4 (2.8) as against 14.4 (2.8) in APL women. The difference was also statistically significant ($P = 0.007$). Social capital was significantly higher among unmarried women, women who had at least one living child and at least one son, compared to their corresponding categories. However, no significant difference was notices in social capital score between different religion or family type [Table 2]. The multiple linear regression analysis was run to find out determinants of social capital among study participants. The variables significantly predicted social capital in the model [$F_{(6,133)} = 9.039$ ($P < 0.001$)]. The model revealed that Age, Education, Occupation, Marital status, and whether the woman has son were found to be significant determinants of social capital. For 1-year increase in age, social capital increased by 0.08 units. For 1 year of additional education led to 0.162 unit increase in social capital. Being unmarried decreased social capital by 1.5 units while having son increased social capital by one unit. The model explained 19.4% of total variance [Table 3].

Discussion

In this study an attempt has been made to estimate social capital and its determinants among women of reproductive age group of rural Maharashtra. Social capital is conceptualized as an important component of social determinant of health. Understanding the construct and determinants are important not only in developing context-specific health intervention, it will guide primary care providers in delivering a holistic health intervention. In this study it was found that most of the participants (more than 80%) had poor or middle tertile of social capital score. Though difference in social capital scoring system used in other studies and lack of similar studies in India made it non-comparable, it can be commented that vast majority of study participants were having poor social capital. Evidence shows that improvement in social capital is essential for sustainable development especially in resource-poor settings like rural areas.[13] Social capital can promote positive health in multipronged pathway, that is,

Figure 1: Distribution of Social Capital score among study participants (*n*=300)

Table 2: Association of social capital with socio-demographic factors

Variables	Frequency	Social capital		P
		Mean	SD	
Overall	300	14.1	2.8	-
Age (years)				
<=25	63 (21.0)	13.4	2.5	0.063
26-35	147 (49.0)	14.3	2.8	
>35	90 (30.0)	14.3	3.0	
Education				
Upto 4th standard	33 (11.0)	13.1	3.6	<0.001
5-10 standard	169 (56.3)	13.8	2.7	
>10 standard	98 (32.7)	14.9	2.5	
Occupation				
Housewife	139 (46.3)	13.4	2.9	<0.001
Laborer	146 (48.7)	14.6	2.5	
Business	10 (3.3)	17.1	1.7	
Service	5 (1.7)	16.0	1.6	
Socio-economic status				
Below poverty line	81 (27.0)	13.4	2.8	0.007
Above poverty line	219 (73.0)	14.4	2.8	
Religion				
Hindu	273 (91.0)	14.2	2.8	0.566
Buddhist	25 (8.3)	13.8	3.0	
Muslim	2 (0.7)	12.5	3.5	
Marital status				
Married	289 (96.3)	14.2	2.7	<0.001
Unmarried	11 (3.7)	10.6	3.4	
Have at the list one living child				
No	15 (5.0)	12.8	2.5	0.061
Yes	285 (95.0)	14.2	2.8	
Have at the least one living son				
No	75 (25.0)	13.2	3.0	0.001
Yes	225 (75.0)	14.4	2.6	
Family type				
Nuclear	205 (68.3)	14.1	2.9	0.962
Joint	95 (31.7)	14.1	2.6	

Table 3: Determinants of social capital - multivariate linear regression using backward stepwise method

Variable	Beta	95% CI of beta	P
Age	0.080	0.028 to 0.131	0.003
Education	0.162	0.048 to 0.275	0.005
Occupation	0.801	0.260 to 1.342	0.004
Marital status -Unmarried	-1.556	-2.342 to -0.769	<0.001
Have at least one living son	1.015	0.329 to 1.701	0.004

mproving access to health-relevant information, Informal health care and support in case of illness, coordinated generation of health demand, decreasing high-risk behavior and crime in the society. Moreover, literature reflects huge role of social capital in economic development, rural development, equity, leadership and empowerment.[14] Therefore, utmost attention need to be paid for improving social capital and its determinates.

Further, in this study social capital was found to be poorer in younger women, women with lower educational qualification,

not involved in any gainful occupation, belonging to BPL and unmarried compared to their counterparts. It was lower in housewives compared to those working outside. Having at least one living son was also found to be positively associated with social capital implying women who have at least one leaving son have higher social capital. The association of social capital with Education and socio-economic status were observed in some previous studies. While analyzing determinants of social capital in 85 European regions, Ferragina E observed income inequality as a significant predictor of poor social capital. Though in that ecological study different geographical regions were analyzed and compared, the result unfolded the same hypothesis.[15] Alexander M studied the variation in social capital levels across the United States and found that it can be explained by a combination of social and economic determinants. In this research, an unemployment level was found to be negatively correlated, and higher education positively correlated with social capital. He also observed that percentage of households below the poverty line is negatively correlated with the level of social capital. These findings are in line with our research results. Contrasting finding was that the researcher did not find any significant effect of personal/family income on social capital, which was found in this study.[16] In a discussion paper, Aldridge *et al.*[17] (London 2002) also identified education, economic inequalities and social class as main determinants of social capital. In a longitudinal study among 252 individuals at Maryland, (US), Furstenberg *et al.*[18] observed social capital is positively correlated with education, occupational success, and economic status One other study by Montgomery, J. D. *et al.*[19] showed that larger social networks were related to more job offers and initial higher wage offers. In the current study, social capital was found to be significantly higher among married compared to unmarried. In a population-based study at Sweden, Lindström M observed higher odds of 'low trust' among both divorced and unmarried women compared to the married/cohabitating reference group, the finding being in line with this study.[20]

The main strength of this study was that it tried to unfold the concept which is largely unexplored especially in Indian context. To the best of our knowledge very few published researches are available on this topic, and none of them were conducted among women of rural Indian. Moreover, community-based nature and representative sample size make the findings generalizable to similar settings. Literature shows association of many other variables like history and culture, social structures (flat or hierarchical), family structure, environment; residential mobility etc.[20,21] with social capital, which could not be used in this study due to time and resource constraints. It is needless to say that this research intended to enlighten a research gap, which needs further investigation. Context-specific exploratory analysis is needed using qualitative techniques on individual domains of social capital so that the conceptual framework could be reframed and associated factors could be identified.

Findings of this study reflect the need of improving education and job opportunity among women. Though school enrolment has been improved among women in India, the school dropout

rate was considerably high in this part of country, which needs urgent attention.[22] Moreover, income generation activities among rural women need to be promoted by the government. It may take the form of skill development initiative in the form of NGO or micro-financing which have potential to improve social capital.[23] Influence of social capital by presence of male child is an outcome of the thought process derived from patriarchal social structure, which need to be addressed by more gender-sensitive education and percolation of knowledge on gender equality.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Acknowledgement

Key messages

Improvement of education and creation of job opportunity could be effective interventions in improving social capital among the study participants. Positive influence of presence of male child on social capital highlights the need to disseminate messages on gender equity in the society.

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Conflicts of interest

There are no conflicts of interest.

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