Association of women's empowerment with reproductive and maternal health practices: Evidence from a cross-sectional study with women self-help group members in rural India

Laili Irani[1], Supriya Verma[2*], Avishek Hazra[2]

[1] Independent Researcher, formerly with Population Council

[2] Population Council, India

*Presenter

Abstract

Globally, women's empowerment is assessed by different combinations of indicators in relation to women's health and developmental outcomes. Using data from a primary survey in Uttar Pradesh, India, this paper aims to examine the association between women's collective and individual empowerment with reproductive and maternal health (RMH) practices that included antenatal care, delivery preparedness, postnatal care and current contraceptive use. Using exploratory and confirmatory factor analysis, the sub-domains of individual and collective empowerment were developed. Findings show that collective and individual empowerment are independently and jointly associated with correct RMH practices. Women with greater mobility, high self-esteem, access to financial resources, and confidence in interacting with a frontline worker, are found to be more likely to access antenatal care. Delivery preparedness is positively influenced by collective support from fellow SHG members, who assist pregnant women in making these preparations. Receiving postnatal care is positively associated with self-confidence and financial autonomy, and current contraceptive use is positively associated with self-confidence, lower spousal violence, and confidence in support from the group. These results suggest that SHGs are a powerful mechanism for increasing women's realization of their rights and opportunities, enabling them to access services and improve the quality of their lives.

Introduction

The United Nation's Sustainable Development Goals identify gender equality as a key development indicator achieved if men and women enjoy equal rights, opportunities, and freedoms (1). Women, however, continue to be disproportionately disempowered in terms of freedoms, power dynamics, and autonomy (2). A growing body of literature acknowledges the nuances and complexities in measuring women's empowerment as a key measure of gender equality (3). Dimensions of equality vary in significance according to local contexts, which evolve at their own pace (4). Research strongly indicates the need to bridge gaps between theoretical constructs and empirical research to better understand the association of women's empowerment with health and other development outcomes (4, 5). This paper identifies key domains of women's empowerment and measures their associations with reproductive and maternal health (RMH) practices in a rural Indian context and thereby contributes to bridging those gaps.

This paper examines the association of women's empowerment with their reproductive and maternal health (RMH) practices, in relation to women's membership in self-help groups (SHGs). These groups are considered an important avenue for reaching marginalized and have been documented in increasing women's individual empowerment or improving health practices (6, 7). However, these findings are not consistent within other studies as noted in systematic reviews conducted on this topic (8, 9). More needs to be learned about the association women's collective empowerment through SHGs and women's individual empowerment within their specific contexts. This paper attempts to fill this gap in the literature.

Women's empowerment is captured in two broad dimensions: collective *empowerment*, measured as women's empowerment within SHGs for access to services, exercising of rights, and mutual support in times of need, and *individual empowerment*, measured through women's personal experiences and perceptions of support within their households and relationships. It is critical to consider both collective and individual empowerment simultaneously, as they do not change in isolation but

represent a general trend of increased awareness of one's rights and entitlements through increased access and utilization of opportunities, such as health services. We hypothesize that these two domains of empowerment – collective and individual – are correlated, and that greater levels of women's empowerment are associated with improved health practices. This paper also examines the relationship between collective and individual empowerment and their association, independently as well as jointly, on selected health practices.

Methods

This study uses data from a cross-sectional survey conducted during September 2017 to January 2018 of eligible women who were currently married, aged 15 to 49 years, and had given a live birth in the 12 months preceding the survey. The study sample comprises SHG members from 57 sampled blocks in 20 districts of Uttar Pradesh, India. We followed two-stage sampling design to select the study participants: blocks sampled in the first stage, and gram panchayats in the second. Blocks were first arranged in ascending order by percent of scheduled caste or tribe populations and following a systematic random sampling technique the required number of blocks were selected. Gram panchayats with varying proportions of their populations covered by SHGs were included by dividing them into three strata. The required number of panchayats were drawn randomly and equally from each stratum. Within each selected gram panchayat, all households with an SHG member were mapped and listed. All eligible women were identified and approached for a face-to-face interview. If more than one eligible woman was in a household, one woman was randomly selected for the interview. The study sample comprises of 2,197 eligible women, which is a sub-sample of the original evaluation and has more than 90% power and 95% confidence interval.

The health practices examined in this paper are: 'four or more ANC visits during last pregnancy', 'at least one activity to prepare for delivery, such as deciding on a place of delivery, identifying mode of transportation, and saving adequate funds for delivery', 'PNC visit from a frontline worker or SHG

member within seven days of delivery' and 'using a contraceptive method' at the time of the survey. Correct practices related to the topics described above were shared as part of a health program among SHG women in some blocks of Uttar Pradesh. Hence, they were receiving information on these practices through SHG meetings and through home visits. Hence, it was expected that their knowledge on correct health practices would increase as a result.

The primary independent variables of interest are collective empowerment and individual empowerment, which were collected during the interview with the eligible woman. Collective empowerment was measured through four key sub-domains: ***social cohesion,*** referring to a woman's belief that her SHG will support her in times of need (captured through 12 questions/items in the tool); ***efficacy,*** referring to the belief that women work together for positive changes in health (measured through seven questions in the tool); ***agency,*** referring to women assisting other members for local health and administrative services (measured through five questions in the tool); and ***action,*** capturing the respondent's own experiences in creating social change within the past year (captured though 12 questions in the tool). Individual empowerment was measured through six key sub-domains: ***confidence,*** referring to a woman speaking in public and recognizing a health emergency (captured through nine pre-tested questions in the tool); ***mobility,*** referring to the ability to leave the house for various chores and activities (captured through 12 questions in the tool); ***decision-making,*** referring to engagement in major decision-making within the household for health services, making purchases, determining major life decisions, etc. (captured through 26 questions in the tool); ***self-esteem,*** capturing a respondent's perception of her own worth (captured through seven questions in the tool); ***financial inclusion*****,** capturing a woman's ability to obtain a loan from the SHG, own her own assets and resources, and make basic financial decisions independently (captured through 12 questions); and ***freedom from violence,*** capturing a respondent's reported experience of any kind of physical, emotional, or sexual violence from her spouse within the past 12 months (captured through 14 questions)

Bivariate analyses of individual, household, and group characteristics with each reproductive and maternal health practice tested the significance of their relationships with a t-test for age (continuous variable) and chi-square test (for categorical variables) with the covariate variables and health practices wherever relevant.

A reliability test for each sub-domain was tested for internal consistency within the dataset. Sub-domains of individual and collective empowerment were developed using exploratory and confirmatory factor analysis. we ran three models of multivariable logistic regressions, followed by bootstrapping with 500 replications, to test the various combined and individual effects of empowerment on RMH behaviors. In Model A, we looked at the effect of the overall combined empowerment on each RMH practice. In Model B, we tested the effect of individual and collective empowerment as separate domains but together in the model. Model C considered the inclusion of sub-domains of collective and individual empowerment individually. In all models, we controlled for respondent age, education, caste, household wealth, employment, exposure to SHG activities, and group characteristics. All analyses used Stata version 13.0 (StataCorp, College Station, TX, USA).

Findings

The mean age of respondents was 28 years (Table 1). About 40% of respondents had no formal education, more than half were from scheduled castes or tribes, and were from low wealth index householdsAbout three quarters of women had been exposed to at least one health related SHG activity during their last pregnancy or following the birth of their youngest child. Most SHG members (84%) stated that their group had been formed more than three years ago, while around half reported that their group had conducted less than six meetings in the prior three months, less than half the expected number. Nearly all members (97%) saved money weekly as part of the group's activities. A quarter of group members (26%) had taken out a loan through the group, and another 37% belonged to a group that had recently repaid or was currently repaying a bank loan. The Chi-square test of association suggests that formal education, household asset ownership, and exposure to SHG

activities are positively associated with antenatal care, delivery preparation, postnatal care, and use of a family planning method (Table 1). Overall, over a third (39.6%) of the population interviewed had at least four antenatal care visits during their last pregnancy, around three-quarters (72.6%) had performed at least one delivery preparedness, a third (31.3%) had at least one postnatal care visit within seven days of delivery and 41.3% of respondents were using a family planning method at the time of the survey.

Table 1: Bivariate table showing association of sociodemographic profile of SHG members by maternal health practice

Background characteristics	(N=2197)	At least 4 ANC visits (N=2197)	At least one delivery preparedness (N=2197)	At least one PNC visit within 7 days of delivery (N=2197)	Any FP method use (N=2166)
Age					
15-24 years	23.2	38.9	69.2*	31.8	40.1
25 and above	76.8	39.9	73.6	31.2	41.3
Education					
No education	38.9	33.1*	67.1*	27.1*	37.3*
Up to class 7	23.7	39.2	72.6	31.3	41.9
Class 8-11	23.4	43.6	75.7	30.4	40.5
Class 12 & above	14.0	52.2	82.4	44.6	52.6
Caste					
Scheduled Caste/ Scheduled Tribe	51.2	36.7*	70.7	26.9*	40.2
Other backward classes	41.0	41.6	73.8	36.2	42.8
Others	7.5	48.9	78.1	34.8	40.5
Wealth index					
Low	53.9	33.6*	69.1*	26.9*	36.8*
Medium	21.0	42.7	75.1	35.6	41.9
High	25.1	50.0	77.9	37.1	50.4
Currently working					
No	88.7	39.4	73.1	31.8	41.6
Yes	11.3	41.4	68.7	27.3	39.2
Exposed to any SHG activities					
No	27.7	27.9*	61.2*	26.3*	35.6*
Yes	72.3	43.7	76.5	33.1	43.3
Characteristics of SHG[a]					
Needs improvement	30.9	36.6	69.8	30.1	40.6
Moderate	28.3	39.2	73.8	30.7	41.4
Good	40.8	42.3	73.8	32.7	41.8
Total		**39.6**	**72.6**	**31.3**	**41.3**

[a] composite of the questions of characteristics of SHGs noted above
* = p-value <0.05 when covariate is run by dependent variable of interest

The combined effect of collective and individual empowerment on RMH indicators through Model A of logistic regression found that more empowered women were associated with four or more ANC visits during their last pregnancy (β=0.02, SE=0.004), preparation for their last delivery (β=0.03, SE=0.005), and a PNC visit within a week of delivery (β=0.01, SE=0.004) (Table 2). Logistic regression analysis with collective and individual empowerment separately ran through Model B showed that ANC and PNC visits were primarily influenced by individual empowerment, while delivery preparedness was driven by collective support from SHGs, as well as individual empowerment.

Table 2: Logistic regression showing effect of overall combined, collective and individual empowerment on health outcomes

		Beta coefficients (S.E) [a]			
Model[b]		**ANC (N=2197)**	**Delivery preparedness (N=2197)**	**PNC (N=2197)**	**FP (N=2166)[c]**
Model A: Composite scores of empowerments	**Overall Combined empowerment**	0.02*(0.004)	0.03*(0.005)	0.01*(0.004)	0.03(0.004)
Model B: Composite scores of CE & IE	**Collective empowerment**	0.01(0.009)	0.05*(0.009)	0.01(0.009)	0.01(0.009)
	Individual empowerment	0.02*(0.005)	0.03*(0.005)	0.02*(0.005)	0.001(0.005)
Model C: All domains individually	**Social cohesion**	0.02(0.015)	0.07*(0.017)	0.04*(0.016)	0.003(0.015)
	Collective efficacy	0.04*(0.019)	0.12*(0.021)	0.03(0.026)	0.01(0.019)
	Collective agency	0.04(0.089)	0.28*(0.121)	0.03(0.087)	0.18*(0.082)
	Collective action	0.03(0.031)	0.10*(0.040)	0.01(0.030)	0.04(0.032)
	Self confidence	0.10*(0.018)	0.14*(0.019)	0.09*(0.019)	0.05*(0.019)
	Mobility	0.06*(0.019)	0.02(0.020)	0.04(0.019)	-0.01(0.019)
	Decision making	0.01(0.010)	0.04*(0.010)	0.01(0.007)	0.003(0.007)
	Self esteem	0.09*(0.029)	0.10*(0.034)	0.03(0.031)	0.05(0.031)
	Financial inclusion	0.05*(0.020)	0.05*(0.023)	0.09*(0.021)	0.02(0.021)
	Freedom from violence	-0.01(0.020)	0.05(0.023)	0.001(0.021)	0.04*(0.021)

* = p-value <0.05
[a] Beta coefficients (standard errors) generated following bootstrapping with 500 replications. Model controlled for age, education, wealth, caste, employment, program exposure and SHG strength. Reference category of key independent variables is low score of empowerment for the specific domain/sub-domain of interest.

[b] Model A was run on the overall combined score of empowerment. Model B was run on only the composite scores of CE and IE as independent variables. Model C was run with each of the CE and IE domains included separately as independent variables.
[c] Sample size is smaller as respondents who were pregnant were not asked about current FP use

In Model C, where relationships between the outcome variables and each sub-domain were tested individually, collective efficacy, women's self-confidence, freedom of mobility, self-esteem, and financial inclusion had positive and significant associations with ANC. Women's preparedness for delivery during their last pregnancy was significantly associated with nearly all the sub-domains of collective and individual empowerment, except for freedom of mobility and freedom from spousal violence. PNC within a week of delivery was positively associated with social cohesion, self-confidence, and financial inclusion. Generally, combined domains of collective and individual empowerment did not appear to affect current contraceptive use, but when we observed the specific sub-domains of empowerment, current contraceptive use was positively associated with collective agency, self-confidence, and experience of less spousal violence within the past 12 months. These results suggest that SHGs are a powerful mechanism for increasing women's realization of their rights and opportunities, enabling them to access services and improve the quality of their lives.

Discussion

This paper measures empowerment extensively to describe both collective and individual empowerment among women in SHGs. Collective empowerment encompasses cohesion, whereby a member believes she will be supported by her SHG in time of need; efficacy, when a member believes her group can work together for positive change, agency indicates a group has assisted its members in seeking services, and action denotes that a respondent has herself participated in activities for social change. An extensive array of questions also relate to women's individual empowerment within six domains: self-confidence in engaging with people of authority and new situations, freedom of mobility in leaving home for various activities, autonomy in decision-making within the household and in matters of the family's and a woman's own wellbeing, self-esteem as a measure of a woman's perception of her own worth, access to financial resources and making those decisions independently, and freedom from experiences of violence, specifically spousal violence. This study's findings reveal

strong correlation between collective and individual empowerment among women who belong to SHGs, suggesting that collective empowerment and individual empowerment occur simultaneously for women in self-help groups.

Women who were individually more empowered were more likely to seek four or more antenatal care visits. In addition, delivery preparedness was associated with both collective empowerment and individual empowerment. Postnatal care was associated with higher levels of overall combined empowerment, primarily driven by greater association with individual empowerment. In this study, family planning is not found to be associated with any aggregate empowerment scores – overall or combined, collective or individual – but increased collective agency was positively associated with family planning use.

Through the deployment of an extensive tool capturing women's empowerment both collectively and individually, we found that collective and individual empowerment are correlated when associated with women's SHGs. Furthermore, both collective and individual empowerment are independently and jointly associated with better RMH practices such as ANC, delivery preparedness, PNC, and current contraceptive use. These results suggest that SHGs are a powerful mechanism for increasing women's realization of their rights and opportunities, enabling them to access services and improve the quality of their lives. Future interventions should utilize SHGs to share messages about RMH practices and programs specifically encouraging women to exercise their individual and collective expression within their homes and communities to accelerate these healthy behaviors. Further research on the multi-dimensional domains of collective and individual empowerment presented in this paper is necessary for achieving the maximal effectiveness of SHGs. As women have opportunities to join SHGs and lead healthier lives, through information and support gained in SHGs, societies will be able to achieve gender equality at an accelerated pace and reap the benefits of a more equitable society.

References

1. European Institute for Gender Equality. Concepts and definitions. Vilnius, Lithuania: European Institute for Gender Equality; 2019 [cited 2019 19th April]; Available from: https://eige.europa.eu/gender-mainstreaming/concepts-and-definitions.
2. Bekker MHJ, van Assen MALM. Autonomy-Connectedness and Gender. Sex Roles. 2008 2008/07/12;59(7):532.
3. Gram L, Morrison J, Skordis-Worrall J. Organising Concepts of 'Women's Empowerment' for Measurement: A Typology. Soc Indic Res. 2019;143(3):1349-76.
4. Huis MA, Hansen N, Otten S, Lensink R. A three-dimensional model of women's empowerment : Implications in the field of microfinance and future directions. Frontiers in Psychology. 2017;8.
5. Upadhyay UD, Gipson JD, Withers M, Lewis S, Ciaraldi EJ, Fraser A, et al. Women's empowerment and fertility: A review of the literature. Social Science & Medicine. 2014 2014/08/01/;115:111-20.
6. Hazra A, Atmavilas Y, Hay K, Saggurti N, Verma RK, Ahmad J, et al. Effects of health behaviour change intervention through women's self-help groups on maternal and newborn health practices and related inequalities in rural india: A quasi-experimental study. EClinicalMedicine. 2019 2019/11/20/:100198.
7. Saggurti N, Porwal A, Atmavilas Y, Walia M, Das R, Irani L. Effect of behavioral change intervention around new-born care practices among most marginalized women in self-help groups in rural India: analyses of three cross-sectional surveys between 2013 and 2016. J Perinatol. 2019 Apr 2.
8. Orton L, Pennington A, Nayak S, Sowden A, White M, Whitehead M. Group-based microfinance for collective empowerment: a systematic review of health impacts. Bulletin of the world health organization. 2016;94(9):694.
9. Gram L, Fitchett A, Ashraf A, Daruwalla N, Osrin D. Promoting women's and children's health through community groups in low-income and middle-income countries: a mixed-methods systematic review of mechanisms, enablers and barriers. BMJ Glob Health. 2019;4(6):e001972.