

Original Research Article

Comparative study of knowledge, attitudes, and practices of maternal health care utilization in rural and urban areas of Mysuru, India

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ABSTRACT

Background: Improving the accessibility and utilization of maternal and child health care services is imperative to achieve the sustainable development goals in India. Despite government initiatives, lack of utilization of available maternal health care remains a major issue. This study aimed to determine the social and cultural driving forces behind maternal health care utilization, and the knowledge, attitudes and practices among rural and urban women.

Methods: Participants were pregnant and lactating women receiving care at primary health centers in or surrounding Mysuru. Quantitative variables were assessed with cross-sectional analysis of a survey of maternal health knowledge, attitudes, and practices. Qualitative data were gathered using focus group discussions regarding health care utilization. The analysis included 56 urban women and 36 rural women (n=92).

Results: There was a statistically significant difference in overall knowledge ($p=0.004$) between urban and rural women with rural participants having more overall knowledge. There are significant positive correlations ($p=0.01$) between knowledge and practice, knowledge and attitude, and the practice and attitude domains.

Conclusions: The knowledge gap between urban and rural women may be attributed to the prevalence of accredited social health activists (ASHAs) in rural communities. Incentivizing more urban women to become ASHAs can help close this gap between the two environments. Strategies dedicated to broadening the fund of health care education of the community will in turn improve on practice.

Keywords: ASHA, India, Global health, Maternal health, Women's health

INTRODUCTION

Globally there are about 800 maternal deaths each day from preventable complications of pregnancy and childbirth, 20% of which are women in India.¹ The maternal mortality ratio (MMR) is a measure of maternal deaths per every 100,000 live births; the maternal death can occur at any time during pregnancy or 42 days past delivery. The causes of maternal mortality include direct and indirect obstetric complications, the unavailability of skilled health workers, gaps in knowledge of reproductive health, and social and cultural factors preventing proper utilization and access to care.² Data from the Indian

Government (NITI Aayog) states that the maternal mortality ratio in India declined from 254 in 2005 to 130 in 2016.³ India's decrease in MMR has been partially attributed to government programs that utilize financial incentives to urge women to receive antenatal care and deliver in a hospital setting.

India launched several health programs, one of which is the Accredited Social Health Activists (ASHAs) in 2005. ASHAs are female residents of the village where they serve, are literate, have at least a 10th grade education and are between the ages of 25 and 45. They are provided with government incentives to monitor pregnant women,

accompany them to their antenatal visits in rural communities, and ensure they are receiving appropriate care. With the aid of ASHAs, pregnant women in India attend antenatal visits at a Primary Health Center, receive tetanus vaccinations, iron and folic acid tablets, and health counseling. These services have been instrumental in improving maternal health in rural India and connecting marginalized communities to maternal health services.⁴

In 2005 the Indian government also started the Janani Suraksha Yojana (JSY) program, which provides significant financial incentives to pregnant women who utilize antenatal services and deliver in a hospital.⁵ Until 2005 the majority of women in India delivered their babies at home, without the care of a skilled birth attendant or life-saving resources. Following the implementation of JSY, institutional deliveries in India have increased from roughly 30% to over 80% correlating with the decreased rates of maternal mortality.⁵

Despite decreases in maternal mortality rates there remains a staggering health care disparity across India in access to physicians, resources, and infrastructure.⁶ It is vital to understand the social and cultural determinants that contribute to underutilization of health care services. Social determinants of health encompass conditions and environments that might hinder the ability to access quality health care; in India these determinants can include gender, transportation options, literacy, socioeconomic status, culture, education, health knowledge, and marriage status.⁷

This study was undertaken to compare the knowledge, attitude and practices surrounding maternal health care service utilization among women residing in urban and rural areas of Mysuru, Karnataka.

METHODS

This mixed quantitative/qualitative cross-sectional study took place in two rural and one urban primary health center affiliated with the Department of Community Medicine, JSS Medical College, Mysuru for a period of 6 weeks from June 2019 to July 2019. All pregnant and post-partum breastfeeding women attending these centers during the study were included by consecutive sampling. Based on power calculations the target sample size was an N of 40 per group with a hypothesized effect size of 0.5.

Quantitative survey

Quantitative data regarding sociodemographic characteristics, knowledge of maternal health and available health services, attitudes towards these services and how they were utilized were collected in a pre-tested structured survey by interview technique after obtaining written informed consent. Equal time was divided between both urban and rural centers.

The survey focused on three themes: knowledge, attitudes, and practices around maternal and child health. A pilot

study was conducted with 6 women in the week prior to study start to test the survey instrument. The survey included multiple response type questions: Likert scales, multiple choice, and yes/no questions. The knowledge and practice domains utilized multiple choice and yes/no format questions and the attitude domain utilized Likert scale questions. Example questions and statements from each domain are as follows:

Knowledge

When should the first antenatal visit occur? What are the danger signs during pregnancy? Where are you getting your information on care during pregnancy and delivery? How long should a child be exclusively breastfed?

Attitudes

Antenatal and postnatal care is beneficial for mother and child. Delivery in a health care facility is important for the safety and health of mother and child. The best way to prevent pregnancy is by using contraception. Supplementation of iron and folic acid is beneficial for mother and fetus.

Practices

Are you currently or did you attend regular antenatal care visits? If no, what is the main reason for not attending antenatal care visits? What motivated you to go for antenatal care visits? Are you currently or did you take iron and folic acid supplements during your pregnancy? Are you currently or did you consume supplementary food and nutrition during pregnancy? Where did you deliver your last child? Did your newborn receive vaccinations?

Qualitative data

Qualitative data was collected using a focused group discussion (FGD). The FGD was conducted to collect in-depth information on the social and cultural factors that influence the utilization of maternal health services. Eight pregnant and lactating women selected from the urban primary health centers participated in the FGDs. A trained faculty member from the Department of Community Medicine of JSS University facilitated the FGD; proceedings were recorded and analyzed by content analysis to determine common themes in attitude and practice.

Statistical analysis

Quantitative data analysis included descriptive and inferential statistics with the data being reported in proportions, means and standard deviations. Data from each survey question was manually inputted into an excel spreadsheet using codes to substitute for answer choices and categories, example: 1=choice "a", 2=choice "b", etc. The completed spreadsheet was imported into Statistical package for social sciences (SPSS) software where means,

standard deviations and chi-squared associations were computed for each survey question to analyze for significant differences between urban and rural areas. A scoring system was created to test for level of knowledge, attitude and practice.

Each favored and objectively correct answer choice was awarded a “1” and unfavorable and incorrect answer choices was given a score of “0”. Under the attitudes section the scores were as followed: 5=strongly agree, 4=agree, 3=neutral 2=disagree, 1=strongly disagree. Raw scores were then tallied and fed into SPSS for correlation analysis and graph formation. The correlation and differences were interpreted as statistically significant at $p < 0.05$.

Institutional Ethics Committee approval was obtained through JSS Academy of Higher Education and Research in Mysuru, India #14.05.2019 and through Quinnipiac University in North Haven, Connecticut, USA #06219.

RESULTS

In total 92 pregnant and lactating women were included in the quantitative survey; 56 were from urban and 36 from rural centers. These did not include 8 women who participated in the focus groups and did not complete a quantitative survey. The social demographics of participants were: the majority of study participants were Hindu, literate, completed secondary schooling, and were unemployed (Table 1). The average age in the urban center was 24.5 years (SD=4.19) and 22.6 (SD=3.85) in the rural centers.

Table 1: Social demographics of the study participants.

		Urban	Rural	Total
Religion	Muslim	(41.1) 23	(2.7) 1	24
	Hindu	(55.3) 31	(97.2) 35	66
	Christian	(3.5) 2	(0.0) 0	2
Level of education	Illiterate	(0.0) 0	(2.7) 1	1
	Primary	(12.5) 7	(8.3) 3	10
	Secondary	(62.5) 35	(72.2) 26	61
	Graduate	(19.6) 11	(11.1) 4	15
	Post graduate	(5.3) 3	(5.5) 2	5
	Profession	(5.4) 3	(2.8) 1	4
Profession	Clerical, shop-owner	(0.0) 0	(0.0) 0	0
	Skilled worker	(5.4) 3	(2.8) 1	4
	Unskilled worker	(8.9) 5	(2.8) 1	6
	Unemployed	(80.4) 45	(91.7) 33	78
Average age (years)		24.5	22.6	

A majority of the participants were Hindu, literate, completed secondary schooling, and were unemployed. The average age of urban participants was 24.5 and rural 22.6.

Table 2: Correlations between knowledge, attitudes and practices across urban and rural samples.

Area		Knowledge	Attitude	Practice
Urban	Knowledge	Pearson Correlation	1	0.529
		Sig. (2-tailed)		0.000
		N	56	56
	Attitude	Pearson Correlation	0.529	1
		Sig. (2-tailed)	0.000	0.000
		N	56	56
	Practice	Pearson Correlation	0.352	0.202
		Sig. (2-tailed)	0.008	0.136
		N	56	56
Rural	Knowledge	Pearson Correlation	1	0.368
		Sig. (2-tailed)		0.027
		N	36	36
	Attitude	Pearson Correlation	0.368	1
		Sig. (2-tailed)	0.027	0.094
		N	36	36
	Practice	Pearson Correlation	0.246	0.283
				1

Continued.

Area		Knowledge	Attitude	Practice
	Sig. (2-tailed)	0.149	0.094	
	N	36	36	36

The Pearson Correlation Coefficient is a measure of linear correlation with a value between -1 and 1. Coefficients between 0 and 1 designate positive correlations while coefficients between 0 and -1 designate negative correlations. For the urban area, knowledge and attitude have a coefficient of 0.529, a significant positive correlation; knowledge and practice have a coefficient of 0.352, also signifying a significant positive correlation. These positive correlations are also seen in the rural area.

Utilizing an independent samples t-test to assess the differences in knowledge, attitudes and practices between the urban and rural samples, there was a significant difference in the level of knowledge between the urban and rural populations ($p=0.004$), with the rural population having more knowledge.

The most common sources of knowledge acquisition about pregnancy and delivery were family members, government programs, ASHAs, and medical staff. More rural than urban respondents stated that ASHAs educated them on maternal health care practices as well as motivated them to receive services. There was no significant statistical difference in overall attitudes between urban and rural areas.

Analysis of the attitude survey statistics showed a significant correlation between urban and rural and their attitudes about care provided at private health facilities: a majority of the urban participants held a negative attitude towards care received at private health facilities, whereas those at the rural center held more neutral and favorable attitudes towards private health care.

Participants in the FGD believed that government hospitals provided better care than private hospitals, but that government facilities were not clean or maintained properly. There was no significant statistical difference in overall practices between urban and rural areas.

There were significant correlations across the knowledge, attitude and practice domains in urban and rural areas (Table 2). There was a positive correlation between knowledge and practice, knowledge and attitude, and practice and attitude. If a woman's knowledge level increased, there was an increase in favorable practice and attitudes.

DISCUSSION

This study demonstrated a significantly higher level of knowledge amongst pregnant and postnatal rural women compared to their urban counterparts. A previous study in India showed that health knowledge of women varied by education level, economic status and urban versus rural residence.⁸ It also found a positive correlation between knowledge and better health practices, such as attending antenatal care appointments and having institutional deliveries.⁸ Our study similarly demonstrated a positive correlation between health knowledge and better health practices, further reinforcing that health knowledge leads to better maternal outcomes.

A 2019 study focusing on utilization of maternal health services in India, found that the utilization of antenatal services was an important determinant of both institutional delivery and postnatal care.⁹ This was further supported by our study where the vast majority of patients seen in the clinics planned on or had institutional deliveries. A study based in Karnataka used focus groups and interviews to show that perceived low quality of facilities and hospitals is a barrier to care.⁶ The focus group conducted in our study showed similar findings; the women stated that they believed government hospitals provided better care, but were not cleaned or maintained properly which dissuaded them from using their services. Targeting health care administrators about infrastructure improvements and cleanliness could help increase the number of women who seek care.⁶

The gap in knowledge between the urban and rural populations can be partially attributed to the prevalence of ASHAs in rural communities. The ASHAs were intended to connect rural residents to maternal and child health care and provide education about institutional delivery, neonatal care and immunizations, and to dispense basic medical provisions like contraceptives.¹⁰ Previous studies have shown that ASHAs are a trusted source of health information in their communities, encouraging antenatal care, institutional delivery and pediatric immunizations.^{10,11} The ASHA program has been associated with improvement in health awareness and utilization of maternity services.^{11,12} Our study supported this evidence as the majority of health knowledge in rural communities came from ASHAs.

Specific programs dedicated to broadening and specializing the education of ASHAs could help improve the knowledge in both urban and rural communities and in turn improve on practice. General education programs on knowledge of contraception, warning signs of pregnancy, proper nutrition and supplementation, breastfeeding practices, and vaccinations should be held at primary health centers. Mass media exposure to the importance of maternal health has been positively associated with utilization of maternal health services and can also be used to educate as well as persuade women to utilize services.⁹ Mobile applications such as Mobile for Mothers (MfM) increase maternal knowledge by connecting women directly with ASHAs, health information and appointment monitoring.¹³ Regular self-help groups have also been found to be a good way to disseminate health information and improve knowledge.¹⁴

This study found that a majority of women attended regular antenatal care visits and delivered in a hospital. That rural women demonstrated more knowledge than their urban counterparts, suggests that programs designed to increase knowledge in rural communities are working. While there was not a significant difference in maternal health care utilization between urban and rural women, the lack of difference in utilization could be attributed to the small sample size. The small sample size and convenience sampling method of this study could limit the study's power for generalization and further study with a larger sample size could help improve our understanding.

CONCLUSION

This study unveiled significant differences between urban and rural women in terms of maternal health knowledge. There is evidence that increased knowledge is associated with improved practices and health outcomes. Given these findings about the potential impact of the ASHA program on knowledge acquisition, especially for the marginalized, it is even more vital that this program remain sustainable and effective. More studies are necessary to investigate the effectiveness of programs, such as ASHAs, and other tools to improve on maternal health in India, but it is clear that those strategies should be focused on improving knowledge.

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