

Original Research Article

A cross-sectional study of womens' knowledge and reported practices on reproductive, maternal and child health in rural area of North-Eastern India

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ABSTRACT

Background: Women's knowledge and health-seeking practices are crucial determinants of reproductive, maternal, and child health outcomes. Information from rural communities of North-Eastern India remains limited. The study aims to assess women's knowledge and reported practices regarding reproductive, maternal, and child health and to determine the influence of sociodemographic factors on overall health knowledge.

Methods: A community-based cross-sectional study was conducted among 300 women selected from the rural field practice area of a tertiary care teaching hospital in Assam. Data were collected using a pretested interview schedule covering maternal and child health knowledge, preventive practices, and treatment-seeking behaviour. Health knowledge scores were generated based on correct responses. Univariate analysis was performed to summarize data, followed by multiple linear regression to identify factors associated with health knowledge.

Results: Knowledge regarding diarrhoea prevention and management was poor; 52.3% had never heard of oral rehydration solution and only 20.7% recognized vaccination as a preventive measure against measles. Although 95% of women had received antenatal care, only 45.2% initiated breastfeeding within one hour of birth. Full immunization coverage was 65.7%. More than half (54.1%) sought initial treatment from ASHAs/ANMs. Higher educational attainment and increasing age were significantly associated with better health knowledge ($P < 0.05$).

Conclusions: Significant gaps exist in maternal and child health knowledge and practices among rural women. Educational status and age are important determinants of health knowledge, highlighting the need for targeted community-based health education interventions.

Keywords: Maternal health, Child health, Knowledge, Health seeking behaviour, India

INTRODUCTION

After the publications in *The Lancet* in 2003, the topic of child health came to the forefront.¹⁻⁵ It was estimated that 10.8 million under-five children were dying globally in the year 2000. The 90% of these deaths were occurring in underdeveloped and developed nations of the world. The top causes for mortality were pneumonia and diarrhoea. Neonatal disorders and malaria were also the causes in few

regions.¹ Around 63% of these can be prevented if the present knowledge can be transformed into effective action and empowering the woman.² The current neonatal and under-five mortality in India is 18.13 and 29.06 per 1000 live births which has marginally improved since 2021. The current maternal mortality ratio of India stands at 116.39 per 100000 live births which has worsened since 2018.⁶ The proposed target under sustainable development goals (SDGs) is to reduce neonatal mortality to as low as 12 and

under-five mortality to as low as 25 by 2030.⁷ The WHO/UNICEF has agreed on certain indicators like oral rehydration therapy, continued feeding for diarrhoea, antibiotic treatment for pneumonia, malaria and its treatment and preventive measures and knowledge regarding breastfeeding.⁸ Evidence suggests that community based primary health care services can improve the chances of child survival in remote hard-to-reach areas.^{9,10} These interventions is primarily targeted to improve knowledge and treatment seeking behaviour particularly among the woman. India started the home-based neonatal care (HBNC) and sepsis management by community health workers as a project in a rural area of Maharashtra, India and it showed a decline of 62% neonatal mortality compared to a neighbouring control group. Further, it was found that death due to neonatal sepsis declined from 16.6% to 2.8%.¹¹ In Nepal, an intervention using women's health group led to a decline in 30% neonatal mortality. These women groups use to meet on a monthly basis and would discuss and identify problems and their effective solutions to tackle the issue.¹² Thus, evidence suggests that community health intervention programme and supervision of the workers lead to decline in neonatal and child mortality.

This study aims to understand the level of knowledge on child health and health seeking behaviour among the women of the study area. Secondly, this study also aimed to assess the effect of education and religion on the knowledge and behaviour.

METHODS

Study setting and participants

This study was conducted in the rural field practice area of the tertiary level teaching hospital of Assam, India. As of 2020 data, the rural field practice area caters a rural population of 36,405 in 40 villages with total rural households of 8,004.¹³⁻¹⁵ Ten villages were purposively chosen for the study. Those were Abhaypur, Athiabai, Bonmaja, Dhopatari, Niz Sundari Ghopa, Rangmahal, Rudreswar, Sila, Silagrang and Silbharal. These ten villages covered almost 80% of the total rural population of the rural field practice area. From each selected village, 30 households were randomly selected and from those household, the woman were asked regarding their knowledge on health and their health seeking behaviour. If the woman was not present, then, the next household where the woman would be present will be selected for the study. If there was presence of more than one woman in household then only one woman would be randomly selected for the study. Thus, a total of 300 households were interviewed.

Data collection and sources

A pre-tested, pre-designed interview schedule was developed and data collection was done by trained field investigators. The interview schedule comprises of

questions related to their housing, characteristics of the woman, knowledge on health, pregnancy, child health, and treatment seeking behaviour. The interview schedule was piloted in two nearby villages adjacent to the tertiary care teaching centre, namely Haluguri and Koroibari. The pilot testing led to necessary alteration of the translation of the interview schedule in the local language. Later, those villages were not considered in the final study.

Data analysis

Characteristics of the household and woman that included background details on households and demography were documented. Univariate analysis was done by frequencies and percentages for categorical data while mean, standard deviation and median for continuous data. Each correct response was awarded '1 point' for those having a single correct answer. For the questions that had more than one correct option, then each correct response would be awarded reciprocal of the total number of correct answers thus making it to be a maximum of '1 point' for each question. The addition of the scores would give an overall health knowledge score. Finally, regression analysis was performed with binary linear regression using education and caste of the woman to find the significant predictors that affected the health knowledge score. Age and persons per room were considered as continuous variables. Later, multiple linear regression was performed to see which factors influence the overall health score or acts as a confounder.

RESULTS

Descriptive statistics

The characteristics of 300 households documented that an average of 4 people and 2 children of under-five years lived in each household. An average of 2.1 persons shared a living room. A median of 2 bed-nets was used in each household. It also contained the observations made by the interviewer. A total of 294 (98%) households had a bed-net in place and it was also informed that the children in the household would be given the bed-nets to sleep. A total of 245 households (81.6%) had a hand-washing facility close to the place of preparing food, but only 17.1% had soap to wash hands near that water source. Only four out of ten households (38.4%) had presence of sanitary latrine facility and surprisingly, one-fifth (18.7%) did not have their own latrine facility (Table 1).

The mean age of the women in the study was 27.9±7.7 years with majority of the women belonging to Hindu religion. Majority of the women had completed their primary level of education and only 1.3% of the study population were illiterate (Table 2).

Health knowledge

The study population had poor knowledge on the prevention and management of diarrhoea as majority

(7.6%) women gave only one correct response out of the possible four correct responses, 51% women said that they will not give more drinks to their child during diarrhoea and 52% have not heard about ORS. Only 34% of the women knew that breast milk should be given to child <6 months during diarrhoea episodes. Likewise, it was seen that the knowledge of women regarding malaria and pneumonia were good and almost half of them (49.1%) of women could identify two correct responses of the signs of pneumonia out of the possible three. Even 13.3% of the women could identify all the three signs of pneumonia. While almost all the participants (91.3%) heard about HIV/AIDS but only one out of every five (20.7%) knew that measles can be prevented by vaccination (Table 3).

Regression analysis showed that women with higher level of education achieved substantially higher scores ($p<0.0001$). Although it was seen that higher the number of family members in the household there was a reduction in the knowledge score but it was not statistically significant ($p=0.15$). Higher knowledge scores were seen in Hindu religion but that was not statistically significant ($p=0.70$). However, it was seen that with increase in age of the women the knowledge score increased by 0.04 ($p=0.002$). The multiple regression analysis also revealed that age had a statistically significant effect on the knowledge ($p=0.01$). Education level also was statistically significant in multiple regression analysis and with age the knowledge score increased by 0.02 ($p=0.03$).

Pregnancy and delivery

Ninety-five (95%) of the women had received antenatal check-ups during their antenatal period. It was interesting to note that 54.3% of women had received three or less antenatal check-ups including 5.1% had zero antenatal check-ups in their antenatal period. Most of these check-ups were conducted in sub-centres/PHCs. Almost 3/4th of the women had their delivery conducted in a government healthcare facility but with such a robust maternal and child health program of the government, there were 13 (4.2%) deliveries that were conducted at home. However, it was good to note that these deliveries were conducted by trained birth attendants. A total of 222 (74%) deliveries were attended by ANMs in mostly the PHCs. Even if the

deliveries were primarily conducted in the health institution, it was noted that only 45.2% of the newborns were put on mother's breast after delivery immediately or within one hour (Table 4).

Vaccine coverage

The vaccine coverage was well documented in the mother and child protection card for all the children and it was kept safely in their respective sub-centres/ other nearest government health facility in the 'mother and child protection card tracking bag'. Thus, all the women had their card and the verification process was done properly. Even if, the institutional delivery was 95.8%, it was noted that only 87.3% of the newborns received the birth dose of Hep-B. It was noted that 73.3% of those newborns received Pentavalent-3 vaccine accordingly. There was a fall in vaccination coverage of the children as their age increased. The reason for the same could not be elicited. In addition, it was seen that only 65.7% of the children were fully immunized and AEFI reporting was also very low, reported in only 16 children (5.3%) (Table 4).

Treatment seeking behaviour

A total of 162 (54.1%) of the women said that they would seek help from their ASHAs/ANMs either directly by visiting the health facility or by visiting their home or over telephone whenever their child is ill, and only 20% of the women went to a doctor to seek the first treatment for their children. Almost half of the women (49.9%) reported to get their medicines usually from the nearest government health facility as it is free of cost and 35.8% said that they prefer to collect it from pharmacy/chemist shop as according to them the quality of medicines in private set-up are good. More than 2/3rd (72.6%) of the women said that they did not keep any medicines at home and they would collect it from ASHAs/ANMs whenever needed. While 41.4% of the women said that their home always had paracetamol tablets. It was interesting to note that only 10% of the women said that they kept ORS at home pointing that the women had poor awareness on diarrhoea. It is also must be noted that 16 women (5.2%) did not know what medicines they have kept in their house as they could not identify its purpose (Table 5).

Table 1: Characteristics of the households considered for study.

Variables	Mean	Standard deviation	Median
Interviewee responses			
Number of people in the household	4	2.2	3
Number of rooms in the household	4.6	2.1	4
Persons living per room	2.1	1.3	2
Number of children in household	2.2	1.7	2
Number of bed-nets in the household	2.6	1.2	2
Time since bed-nets were treated	Number (N)	Percentage (%)	
Within 6 months	47	15.8	
6-12 months	148	49.4	
Never/don't know	99	32.9	

Continued.

Variables	Mean	Standard deviation	Median
No bed-nets available	6	1.9	
Interviewer observations			
Presence of a handwashing facility where food is prepared	245	81.6	
Presence of a soap to wash hands	51	17.1	
Absence of a latrine facility	56	18.7	
Presence of an insanitary latrine facility	129	42.9	
Presence of a sanitary latrine facility	115	38.4	

Table 2: Demographic characteristics of the study population.

Variable	Responses	Number (N)	Percentage (%)
Mean age of the participants (in years)		27.9±7.7	
Religion	Hindu	128	42.6
	Muslim	94	31.3
	Others	78	26.1
Education	Illiterate	4	1.3
	Primary	196	65.2
	Secondary	82	27.4
	Higher secondary	12	4.1
	Graduate and above	6	2.0

Table 3: Knowledge of the study participants.

Variables	Possible correct responses	Number (N)	Percentage (%)
Number of correct responses to prevent diarrhoea	0	40	13.3
	1	215	71.6
	2	44	14.5
	3	2	0.6
	4	0	0
Giving more drink than usual to child with diarrhoea	Yes	147	49
	No	153	51
Heard about ORS?	Yes	143	47.7
	No	157	52.3
Giving breast milk to child <6 months during diarrhoea	Yes	102	34
	No	198	66
Heard about malaria?	Yes	268	89.4
	No	32	10.6
Do people suffer from malaria after a mosquito bite?	Yes	164	54.5
	No	137	45.5
Heard about pneumonia?	Yes	213	71
	No	87	29
Number of correct responses to identify signs of pneumonia	0	14	4.6
	1	99	33
	2	147	49.1
	3	40	13.3
Is vaccine the effective way to prevent measles?	Yes	62	20.7
	No	238	79.3
Have heard about HIV/AIDS?	Yes	274	91.3
	No	26	8.7

Table 4: Antenatal care and delivery practices of the recent delivery and vaccination coverage of the youngest child.

Variables	Possible responses	Number (N)	Percentage (%)
Number of antenatal check-ups received	0	15	5.1
	1 – 3	148	49.2

Continued.

Variables	Possible responses	Number (N)	Percentage (%)
	4 – 6	95	31.8
	≥7	42	13.9
Place where majority of the check-ups occurred?	At home by ASHAs	4	1.2
	Sub-centres/PHCs	193	64.2
	CHCs or higher centres	104	34.6
Place of delivery of the last child?	Home	13	4.2
	Government health care facility	226	75.2
	Private health care facility	62	20.6
Delivery attended by?	Doctor	51	16.9
	ANM	222	74
	Trained birth attendant	18	5.9
	Not specified	10	3.2
Time to put baby on mother's breast after birth?	Immediately/within one hour	136	45.2
	After one hour	164	54.8
Number of newborns who have received Hep-B (birth dose)		262	87.3
Number of infants who have received pentavalent-3		220	73.3
Number of fully immunized children		197	65.7
Number of infants who had at least one episode of AEFI		16	5.3

Table 5: Treatment seeking behaviour of the women.

Variables	Possible responses	Number (N)	Percentage (%)
Person from whom the first treatment is received for her child	Another parent/relative	74	24.7
	Traditional healer	4	1.2
	ASHA/ANM	162	54.1
	Doctor	60	20
Where is medicine acquired normally?	Pharmacy	107	35.8
	Government health facility	150	49.9
	Private health facility	43	14.3
Name the medicines that are kept at home?*	ORS	30	10.1
	Paracetamol	124	41.4
	Traditional herbal medicines	10	3.4
	None	218	72.6
	Cannot identify	16	5.2

*More than one options could be selected

DISCUSSION

This study documented that majority of the study population had poor knowledge on diarrhoea and measles prevention and management, some of the inappropriate birth practices, insanitary latrine facilities, and low vaccination coverage in older age groups. This study showed that the health knowledge scores increased with access to higher education, and the results were at par with other studies.^{16,17} This study found that the coverage of three doses of pentavalent vaccine was only in 73.3% while NFHS-5 data for Assam documents that it has increased to 82%. This difference is may be because the study area had poor healthcare coverage routinely due to its remote location and terrain.

This study has many limitations. The findings of this study on the level of health knowledge and treatment seeking and preventive behaviours are representative of the area selected for the study rather than whole of Assam.

Secondly, the study may have a bias as the data collection was done during rainy season and sufficient time could not be given by the women and the responses were elicited by the field investigators in a quick time interval. Despite the limitations, this study had strong implications for future research. This study covered a wide range of issues together. However, the majority of the studies were conducted on mothers or women of reproductive age-group on a single issue like prevention and management of diarrhoea, malaria, pneumonia, knowledge and practice of antenatal care, child birth and breast feeding many studies have also been conducted to document the knowledge on malaria on parents, caregivers or in the community.¹⁸⁻²⁹ Of all the above mentioned studies, mostly they were conducted in either the facility level or in urban settings, this research study captures the voice of the women from a rural background and on multiple issues in a single paper that too in their natural environment in the community is a useful contribution in this field. Further, as this study uses regression analysis to assess various factors on the overall health knowledge of the women has created new

possibilities of measuring health knowledge over time. This study helped in the development of appropriate, area-specific health information programme to address the key gaps in the knowledge and practice on various issues of health.

CONCLUSION

This study found low levels of health knowledge on diarrhoea and measles - prevention and its management, poor practice of antenatal care among women and poor vaccination coverage among the older children. The women had poor knowledge on insecticide treated mosquito bed-nets and poor water, sanitation, and hygiene practices in the community. There was also poor treatment seeking behaviour among the women. Higher education and older age of the women were strong determinants in the overall health knowledge score.

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