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Research Article

Maternal

Knowledge of ASHA workers about maternal and child health services in Mysuru

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Background: Accredited Social Health Activist (ASHA) programme has been accepted, and the services utilization has been increased among many Indian communities since its inception in 2005 under National Rural Health Mission (NRHM). ASHA worker's knowledge is important for the success of this program. **Objectives:** To assess the level of knowledge of ASHA workers about Maternal and Child Health (MCH) services. To determine the association between socio-demographic characteristics and the level of knowledge of ASHA workers about Maternal and Child Health services. **Methods and Material:** A cross sectional study was conducted among 295 ASHA workers of Mysuru Taluk, Karnataka from January to April 2019. Sample size was calculated based on the estimation of proportions method and all the ASHA workers were selected randomly. The semi-structured self-administered questionnaire formulated based on the ASHA modules and translated into the local language (Kannada) was used for data collection. Descriptive data was analyzed by using frequency, percentage, mean and standard deviation. For the association between variables, Chi-square / Fisher's exact test was used. **Results:** Knowledge about Antenatal Care was average among half (51.5%) of the participants. All the listed danger signs during pregnancy were identified only by 49.5% of ASHA workers. About 50% of the respondents were not aware of the exclusive breastfeeding till six months after birth. **Conclusions:** Knowledge levels about maternal and child health services were found to be average in most of ASHA workers.

Keywords: Accredited Social health Activist, Community Health Workers, Maternal and Child Health, National Health Mission, Knowledge

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Introduction

Health is a fundamental human right all over the world and the main aspect to be considered for the growth of any society in social and economical terms, but sadly there exist an inequity in the provision of healthcare both in developing and developed world.

The perception of 'health for all' by Alma Ata declaration insists on decreasing these differences by stressing the importance of primary health care and strengthening the capacity of basic level health workers. With similar idea, in India the National Rural Health Mission (NRHM) (now National Health Mission (NHM)) was launched with the aim of addressing problems faced by the rural population in availing healthcare facilities [1].

One of the main factors that affect adversely on the healthcare delivery system in developing countries is the shortage of trained health workforce. Secondly, no health programs can be successful without community participation and acceptance. When looked for a solution to these problems, the concept of Community Health Workers (CHW) seems to be effective.

CHWs are appointed as basic level health workers who are from the community itself and can provide necessary services like mobilization, awareness about health and many more such services according to the need. This concept of CHW is time tested for more than 50 years in several countries and it has been found effective in improving the health outcomes of people especially in the field of Maternal and child health [2].

With this background, the Accredited Social Health Activist (ASHA) programme was launched as a key component of NRHM in 2005. ASHA plays the main role in bridging the gap between public health facilities and the communities by providing necessary and timely information about the health-related issues and available solutions. Ideally, ASHA should be staying in the same village where she works.

A married/ widowed/ divorced woman preferably in the age group of 25 to 45 years with minimum educational qualification being 10th standard is selected as an ASHA (relaxed in areas where ASHA workers are not available in adequate numbers fulfilling this criterion) through various community groups such as self-help groups, gram sabha and nodal officers.

ASHA being the first port of call to the deprived population are expected to facilitate community participation in public health programmes, especially among women and children. ASHA has to counsel pregnant women about Antenatal Care (ANC), birth preparedness and danger signs during pregnancy.

She has to provide information about the importance, duration, and frequency of breastfeeding to lactating mothers. Information about contraception and Reproductive Tract Infections (RTIs)/ Sexually Transmitted Diseases (STDs) has to be given to the eligible couple.

In most of the villages where the healthcare facilities are located far from the personal residence, they have to be dependent on ASHA for basic healthcare facilities like medicines for minor ailments, assistance in ANC, Intra Natal Care (INC) and Post Natal Care (PNC). After 12 years of the launch of ASHA services, now the community acceptance and utilization of ASHA services have increased [3]. ASHA's knowledge about these healthcare facilities will be critical in reducing the mortality and morbidity related to maternal and child health in any community.

ASHA being a link between the community and the health facilities should improve the community by providing health education and increasing service utilization. But studies have shown that the knowledge level of ASHA in most of the places was not complete that may lead ASHA to provide incorrect information to the community. Hence this study is conducted to assess the level of knowledge of ASHA workers about maternal health.

Materials and Methods

Study design: It is a community based cross-sectional study

Study setting: Mysuru Taluk, Karnataka

Study duration: The study was conducted from January 2019 to April 2019. Data collection from all the PHCs of Mysuru Taluk was done during January and February 2019.

Study population: Trained ASHA workers in Mysuru Taluk, who had experience of at least 1 year were the study participants.

Sample size: A study conducted in Udupi Taluk in 2017 has revealed that the knowledge among ASHA workers about ANC and PNC as 82%. That is taken as the prevalence of knowledge.

To calculate sample size, technique of estimation of proportion is used

$$n = \frac{(Z_{1-\alpha/2})^2 (p)(1-p)}{d^2}$$

$$n = \frac{(1.96)^2 (0.82)(1-0.82)}{(0.05)^2}$$

$$n = \frac{(3.8416)(0.1476)}{0.0025}$$

-n = 226.80 ≈ 227

Adding non response rate of 30% = 227 + 68 = 295

Where,

($Z_{1-\alpha/2}$)- For 95% Confidence Interval is 1.96

P - Prevalence of knowledge i.e., 82% (0.82)

Q – (1-p) = 0.18

D – Level of precision i.e., 5% (0.05)

N- Sample size= 295

2.6 Sampling technique**:** Two-stage sampling method was adopted. The list of ASHA workers functioning in Mysuru Taluk with their respective PHCs was obtained. In the first stage the 34 PHCs of the Mysuru Taluk were divided into rural and urban. In the second stage based on the calculated sample size, proportion allocation of number of ASHAs was done for both rural and urban PHCs. All the ASHA workers ID numbers were entered in Microsoft excel and selection of ASHA workers was done based on random sampling method.

Inclusion criteria: ASHA workers trained in all modules based on the NHM guidelines.

Exclusion criteria: Eligible participants not willing to consent

Study tool: Self-administered (semi-structured) questionnaire was used to collect the information. The questionnaire was framed based on the training modules for ASHA provided by NHM. The classification of knowledge was done based on the percentiles. Below the score of 25th percentile i.e., less than or equal to 29 was considered as poor. 30 to 35 was considered as average and 36 and above as good (above 75th percentile). The questionnaire was developed in English and then translated into the Kannada language.

Validity of the tool: The questionnaire was validated by a pilot study conducted on 29 ASHA workers of Mysuru Taluk. Necessary changes were made and the tool was finalized for the study. Cronbach's alpha was 0.76.

Procedure of data collection: Data collection was carried out by the researcher through self administered questionnaire. All the Medical Officers (MO) of PHCs in Mysuru Taluk were contacted and obtained permission for data collection during their monthly meetings with ASHA workers or any other possible days when ASHAs can gather.

On prescribed dates ASHAs of respective PHCs were administered with the questionnaire. Details about the researcher, purpose and nature of study was explained. Information about voluntary participation was given. Written consent was taken from all the participants.

Data analysis: The collected data was entered and edited in SPSS version 16.0. Descriptive data was analyzed by using frequency, percentage, mean and standard deviation. For the association between variables, Chi-square / Fisher's exact test was used. P value less than 0.05 was considered as statistically significant.

Ethical considerations: Ethical clearance was obtained from Institutional Ethics Committee, K S Hegde Medical Academy, Nitte (Deemed to be University) (#INST. EC/EC/136/2018-19). To conduct the study, permission was obtained from the Director, Health and Family Welfare services, Bengaluru.

Participants were explained about the objectives and the nature of the study. Informed consent was taken from each participant before administering the questionnaire. Identity of the participants was anonymized.

Results

Socio-Demographic characteristics: The number of ASHA workers participated in the study was 295. Out of that 51.9% of them belonged to the age group of 25 to 34 years. The age of participants ranged from 21 years to 53 years, mean age being 34.35 with Standard Deviation (S.D) 5.95 years. More than half of the participants (61.3%) were educated up to 8th to 10th standard. Among the participants, 86.4% were married, 11.2% were widowed and 0.7% of them were un-married.

Around 44% of the ASHA workers cover the population of 1001 to 2000 followed by 38.2% served population below 1000 (Table 1).

Table-1: Socio – demographic characteristics of the respondents

Characteristics (n = 295)	Frequency	Percentage
Age (in years)		
Below 24	6	2.0
25 to 34	153	51.9
35 to 44	118	40.0
Above 44	18	6.1
Education		
Primary	40	13.6
Secondary	181	61.3
Pre – University	66	22.4
Graduate/ Diploma	8	2.7
Marital status		
Divorced	5	1.7
Married	255	86.4
Un-married	2	0.7
Widowed	33	11.2
Family type		
Joint	74	25.1
Nuclear	221	74.9

Table-1 (Continued): Socio – demographic characteristics of the respondents

Characteristics (n = 295)	Frequency	Percentage
Place of residence		
In the headquarter	270	91.5
Out of the headquarter	25	8.5
Allotted population		
Below 1000	113	38.2
1000 to 2000	130	44.1
2000 to 3000	40	13.6
3000 to 4000	9	3.1
More than 4000	3	1.0
Years of experience		
1 to 3	161	54.5
4 to 6	5	1.7
7 to 9	108	36.6
Above 9	21	7.2

Knowledge of the respondents about Maternal and Child Health: Knowledge of 90.5% of the respondents about birth spacing and contraception was found to be good. About half of the respondents (51.5%) had average knowledge about the Antenatal Care (ANC) whereas 86.1% of them had good knowledge about Post Natal Care (PNC). About 78% of the respondents knew about the advice given for birth preparedness (Table 2).

Table-2: Knowledge of the respondents about Maternal and Child Health

Characteristics (n= 295)	Poor n (%)	Average n (%)	Good n (%)
Pregnancy testing kit	2 (0.7)	107 (36.2)	186 (63.1)
Antenatal care	4 (1.3)	152 (51.5)	139 (47.2)
Danger signs during pregnancy	76 (25.7)	24 (8.2)	195 (66.1)
Birth preparedness	3 (1)	63 (21.4)	229 (77.6)
Post Natal Care	7 (2.4)	34 (11.5)	254 (86.1)
Breastfeeding	1 (0.3)	76 (25.7)	218 (73.9)
Birth spacing and contraception	5 (1.7)	23 (7.8)	267 (90.5)
Immunization	4 (1.4)	61 (20.6)	230 (78)

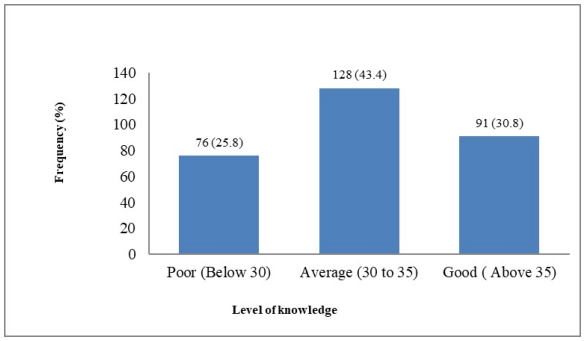

Figure-1: Classification of participants based on knowledge score

Knowledge about ANC: Need for early identification of pregnancy was correctly identified by 76.3% of the respondents. Minimum number of ANC visits was answered correctly as 4 by 98% but almost 30% of them could not answer correctly about the ANC visit schedule.

About 60% of the respondents could identify all the laboratory investigations done during ANC visits. Number of TT injections to be given to pregnant women during first pregnancy was known to 95.6% of the respondents. Ideal weight gain during pregnancy per month was correctly known by only 34.2% of the participants.

Knowledge about PNC: There was correct knowledge about cord care among 97.6% and 90.8% of them correctly identified the scheduled days an ASHA should visit recently delivered mother. Only 30.2% of the respondents could answer correctly about the weight to be considered as Low Birth Weight (LBW) soon after birth. Advising about kangaroo mother care was known to be given to LBW baby by 95.3%.

Knowledge about Breastfeeding: Time of initiation of breastfeeding was correctly known by 96.9% of the respondents.

Most of the respondents (99.7%) answered that pre-lacteal feeds should not be given to baby and 98% of the respondents correctly responded that colostrum should be fed to baby without discarding initially. About exclusive breastfeeding, 49.2% of them responded water, milk formula or cow's milk can be given to baby till 6 months after delivery.

Knowledge about Immunization: The immunization to be given to the baby on first day of birth was correctly identified as BCG by 95.3% of the participants. As per the immunization schedule vaccination against measles to be given was asked. Among the participants of the study 81.4% of them could identify it as in 9th month of baby.

Classification of participants based on knowledge score- The classification was done based on the percentiles. Below the score of 25th percentile was considered as poor that is less than or equal to 29 was considered as poor. 30 to 35 was considered as average and 36 and above as good (above 75th percentile). Among the ASHA workers, 30.8% and 43.4% of them had good and average knowledge respectively. (Figure 1)

Association of knowledge with socio-demographic characteristics- Knowledge was found to be having statistically significant association with level of education of ASHA workers, population covered by each ASHA worker and the time spent on house visits in a week with the p value >0.05. (Table 3)

Table-3: Association of Knowledge with socio-demographic factors.

Variables	Poor (Below 30) (%)	Average (30 to 35) (%)	Good (Above 35) (%)	P value
Education				
Primary	12 (15.8)	17 (13.3)	11 (12.1)	<0.001**
Secondary	58 (76.3)	76 (59.4)	47 (51.6)	
Pre-University	4 (5.3)	31 (24.2)	31 (34.1)	
Graduate/ Diploma	2 (2.6)	4 (3.1)	2 (2.2)	
Family type				0.94
Joint	20 (26.3)	31 (24.2)	23 (35.3)	
Nuclear	56 (73.7)	97 (75.8)	68 (74.7)	
Allotted population				
Below 1000	38 (50)	49 (38.3)	26 (28.6)	0.02*
1001 to 2000	26 (34.2)	56 (43.8)	48 (52.7)	
2001 to 3000	7 (9.2)	20 (15.6)	13 (14.3)	
3001 to 4000	5 (6.6)	1 (0.8)	3 (3.3)	
More than 4000	0 (0)	2 (1.6)	1 (1.1)	
Time spent in household visits in a week (in hours)				
Below 15	10 (13.2)	7 (5.5)	1 (1.1)	0.028*
16 to 30	61 (80.3)	113 (88.3)	85 (93.4)	
31 to 45	5 (6.6)	8 (6.2)	5 (5.5)	

*p value <0.05

**p value <0.01

Discussion

In the present study it was found that about half of the respondents (51.9%) were aged 25 to 34 years. Similar findings were obtained in a study conducted by Desai et al. in which around 71% of the ASHA workers were aged between 25 to 34 years [4]. ASHA workers are involved in mobilizing the community, the age group is an important factor since it requires physical strength. Hence the ideal age group recommended by NHM is 25 to 45 years. This study found that more than 90% of the ASHA workers belonged to this age group. In this study, 61.4% of the study participants were educated up to High school, and 13.6% were educated up to 7th standard. These findings are similar to the study conducted by Nagaraj et al. where 77.3% were educated up to high school and 9.7% up to middle school [5].

About 83% of the ASHA workers covered the population up to 2000 and the rest of them covered the population of more than 2000 similar results was found in the study conducted by Bhandari et al. that is 73.75% of them were covering the population of 1000 to 1500, and 5% of them were covering the population of more than 1500 [6]. Even though the maximum population to be covered by each ASHA is 1000, due to lack of availability of human resources they have been allotted more than the ideal number of populations.

In the present study it is found that only 47.2% of the respondents have good knowledge about ANC. A study conducted by Kori et al. found that 12.5% and 14.7% of the respondents had very good and good knowledge about ANC respectively [7]. The minimum number of ANC visits was correctly identified as four by 98% of the respondents, but the recommended schedules of these visits were known only by 70.8%. The number of TT injections to be given in the first pregnancy and number of IFA tablets to be taken was also known correctly by 96.6% and 79.7% respectively. But only 24.4% of the respondents could identify all the three listed side effects of IFA tablets.

Similarly, the study conducted by Shashank et al. found that 79.5% of the respondents answered that there should be minimum four compulsory ANC visits and 90% and 100% of the ASHA workers agree that Iron and calcium tablets should be provided to pregnant women and TT injection has to be given respectively [8].

All the four danger signs during pregnancy enlisted in the questionnaire were identified by only 49.5% of the participants. A study conducted by Kohli et al. found that 85.5% of the ASHA workers participated in the study said that pregnant women with vaginal bleeding should be referred. In case of loss of fetal movements and swelling of feet 76.4 and 54.5% of them advise referral [9].

Since in time referral of pregnant women in case of complications can save their lives and helps in taking the precautions while conducting delivery, identification of such symptoms as early as possible is important, but in the present study, less than half of the participants could identify all the danger signs.

Only 67.5% of the ASHAs could identify all the four enlisted elements of birth preparedness. According to the study conducted by Grover et al., more than 80% of the ASHAs reported that they counsel for all the elements of birth preparedness [10]. Counseling about the birth preparedness and helping pregnant women to decide about all those elements is a major responsibility of ASHA but knowledge about the same was not found to be satisfactory in this study.

Knowledge about breastfeeding was very good except for the exclusive breastfeeding. Only half of them (50.8%) responded there should be exclusive breastfeeding till six months after birth. In a study conducted by Saxena et al. they found that only 23% of them knew about exclusive breastfeeding until six months after delivery [11].

Only about 30% of the respondents could identify the weight of LBW baby as less than 2.5 kgs, but 93.2% knew that LBW baby couldn't be bathed before seven days of birth. About Kangaroo Mother Care 95.3% of the ASHA workers knew that it is advised for LBW babies. A study conducted by Bansal et al. found that the knowledge of ASHA workers about encouraging Kangaroo mother Care was 68% [12]. Identification of LBW babies and advising proper care can promote effective home-based care in the areas where the availability of healthcare facilities is less.

In this study knowledge about immunization was found to be good among 78% of the study participants. According to the study conducted by Kori et al. in 2015 more than 60% of the respondents had good knowledge about the immunization [7]. Good knowledge about the immunization schedule is important for ASHA workers to guide the community to get timely immunization services. The minimum spacing between two children was correctly answered as three years by 93.9% of the respondents, and 94.9% could correctly identify the spacing method among other permanent contraceptive methods. The study conducted by Ratnam et al. found that 100% of the ASHA workers knew the permanent and spacing methods of contraception provided by the government [13]. The knowledge about the types of contraceptive methods is important to be known by ASHA workers since it helps them to counsel the couple based on whether the family size is complete or not.

Limitations

Since it is a cross sectional study, enhancement or declination in knowledge over time could not be studied. The knowledge level is studied only on a selected district, so generalization was not possible.

Conclusion

The level of knowledge was average among almost half of the participants. Community mobilization is an important responsibility of ASHA workers especially for ANC visits of pregnant women. But the knowledge about the schedule for the same was lacking among one third of the respondents. In spite of being trained regularly and more than one-third of them having field experience of more than six years, few ASHAs were still recommending pre-lacteal feeds, and most of them are not aware of the concept of exclusive breastfeeding till six months after birth. The knowledge about important elements like identification of the danger signs in pregnancy and birth preparedness plan were incomplete.

What this study adds to existing knowledge

In the aspects such as knowledge about pregnancy testing kit, ANC, PNC, immunization, and family planning most of their knowledge was found to be good, but the detailed knowledge about all these

Aspects lacked in many ASHA workers. By this it can be concluded that even though majority of the ASHA workers knew their responsibilities and had knowledge about the services to be provided the rationale and main idea behind these were not very well understood.

Author's contributions

Both the author contributed equally in the concepts, design, definition of intellectual content, literature search, data acquisition, data analysis, statistical analysis, manuscript preparation.

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