Section: Community Medicine

Original Research Article

BRIDGING THE KNOWLEDGE GAP: EVALUATION OF ASHA WORKERS' UNDERSTANDING OF MATERNAL AND CHILD HEALTH AND ITS DETERMINANTS IN GURUGRAM DISTRICT

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ABSTRACT

Background: Accredited Social Health Activists (ASHAs) are pivotal in delivering maternal and child health (MCH) services in rural India and their knowledge directly influences service quality and health outcomes. Limited data exists on ASHA workers' knowledge in Gurugram district, Haryana and hence this study was conducted to assess the knowledge of ASHA workers regarding key MCH components and to identify the important determinants influencing their knowledge levels.

Materials and Methods: A cross-sectional study was conducted among all eligible ASHA workers under Community Health Centre, Farrukhnagar, Gurugram. Data was collected through a pre-tested structured questionnaire covering socio-demographic details and knowledge on antenatal care, breastfeeding, immunization and other related MCH components. Correct knowledge for each component was defined as a score equal to or above the component mean. The association between knowledge and socio-demographic factors was analysed using Chi-square test with $p<0.05$ considered significant.

Results: Total 182 ASHA workers were included in the study. Overall, 52.1% of ASHA workers had correct knowledge across MCH components. Knowledge was high for antenatal visits (87.36%) and exclusive breastfeeding (84.61%) but low for tetanus vaccination in pregnancy (41.75%), Vitamin A supplementation (18.69%), and measles-rubella vaccination (17.58%). Higher educational status, work experience >5 years, and receipt of regular training were significantly associated with correct knowledge ($p<0.001$).

Conclusion: While ASHA workers demonstrated adequate knowledge of some maternal health areas, substantial gaps persist in child health domains, particularly immunization and micronutrient supplementation. Strengthening regular refresher training, supportive supervision, and targeted capacity-building is essential to bridge these gaps and enhance MCH service delivery.

Keywords: Accredited Social Health Activists, maternal and child health, primary healthcare, knowledge assessment, immunization.

INTRODUCTION

The Accredited Social Health Activist (ASHA) is a critical part of India's community health system, especially in rural areas. As per the government directive approved on January 4, 2005, villages with a population of around 1,000 are to be assigned one female ASHA worker, ASHA) with certain relaxations for the eight Empowered Action Group (EAG) states, Jammu and Kashmir, and Assam.[1]

ASHAs collaborate effectively with Anganwadi workers, Auxiliary Nurse Midwives, community-based organizations, and self-help groups to enhance and implement health outcomes.[2] Key eligibility criteria for ASHA workers include being a female resident of the community, preferably aged 25–45 years, and either married, widowed, or divorced. Candidates must have completed at least 8th grade and possess strong communication and leadership skills to effectively deliver health education and mobilize community participation.[3] ASHA workers play a vital role in maternal and child health by counselling women on safe childbirth, breastfeeding, complementary feeding, immunization, family planning, and prevention of infections as well as ensuring proper care for young children. They facilitate access to MCH services at Anganwadi centres and health facilities, support antenatal and postnatal care, and assist with nutrition and sanitation initiatives.[1] ASHAs also manage minor ailments, distribute essential health supplies, and maintain drug depots.[4,5] Also, they report vital events and any unusual health problems/disease outbreaks in the community to the local health centre.[6] With experience and additional training, they can take on expanded roles in new-born care and disease management. As ASHAs are the first point of contact between families and the healthcare system, it is crucial for them to stay updated with the latest knowledge and best practices in maternal and child health. Regular assessment of their knowledge is therefore essential to ensure effective service delivery. There is paucity of data on ASHA workers' knowledge and how it influences the delivery of maternal and child health (MCH) services in this region. Hence, this study was undertaken to assess the Knowledge of Accredited Social Health Activist workers regarding Maternal and child health components and to identify the factors associated with their services.

MATERIALS AND METHODS

Study Setting: All villages under Community Health Centre, Farrukhnagar, Gurugram, Haryana were included in the study. Farrukhnagar is a small town and municipality in Farrukhnagar tehsil of Gurugram district in the Indian state of Haryana. It is situated 21 kilometres (13 mi) from Gurgaon and shares its border with Jhajjar district. (Figure 1).

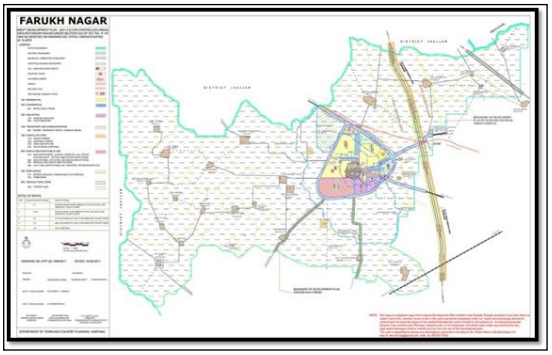

Fig 1: Map of Tehsil Farrukhnagar[7]

Study Population: All ASHA workers in Community Health Centre, Farukhnagar. Inclusion Criteria- ASHA Workers working in villages of sub centres of Community Health Centre, Farrukhnagar for more than 6 months. Exclusion Criteria- ASHA workers not willing to participate in the study.

Sampling Technique & Sample Size: By Complete Enumeration method, a total of 186 ASHA workers were identified of whom 4 were unavailable during the study period. Finally, 182 ASHA workers who provided informed written consent were enrolled in the study.

Methods of Data collection: The investigator personally visited the Community Health Centres in Farukhnagar district, Gurugram. The eligible ASHA workers were interviewed using a pre-designed and structured questionnaire consisting of their socio-demographic profile, and knowledge regarding maternal & child health components. The knowledge domain was elicited using the following knowledge-oriented questions and their specific components: -

1. Minimum antenatal visits: Minimum antenatal visits according to the week of gestation
2. Tetanus: Diphtheria immunisation (Disease covered by vaccine, dose, timing, site of insertion and route)
3. IFA supplementation: Dose, duration
4. Exclusive breast feeding: Exclusive breast feeding and duration
5. BCG Vaccine: Disease covered by vaccine, dose, time, site of insertion and route
6. Hepatitis B Vaccine: Disease covered by vaccine, dose, time, site of insertion and route
7. Oral Polio Vaccine: Disease covered by vaccine, dose, time and route.

Scoring of Knowledge: Knowledge of ASHA workers was assessed separately for each of the above component of maternal and child health services. Each correct response scored one point, while incorrect or "don't know" responses received zero. For each component, the total score was calculated across all participants, and the mean score for that component was determined.

Component-wise Classification: For each maternal and child health component, ASHAs who scored equal to or above the mean score for that component were classified as having correct knowledge, while those scoring below the mean were classified as having incorrect knowledge for that specific component.

Overall Knowledge Classification: An overall knowledge score was calculated for each participant by summing the scores across all components. The mean of these total scores was computed. ASHAs who scored equal to or above the mean total score were classified as having overall correct knowledge, and those scoring below the mean were considered to have overall incorrect knowledge.

Data Analysis: Data was entered in Microsoft Excel 2010 spread sheet and was analysed using SPSS (Statistical Package of Social Science) software version 30.0. Descriptive statistics, including frequency, percentages, and mean ± standard deviation were used to summarize socio-demographic characteristics and knowledge related to maternal and child health (MCH) components. The association between various MCH components and knowledge of ASHA workers was analysed using Chi square test. P value less than 0.05 was considered statistically significant.

RESULTS

A total of 182 ASHA workers participated in the study. Approximately, three fourths of ASHA workers (73.6%, n-134) were in the age range 30 to 40 years. Mean age was 34.3± 4.79years. Almost all the ASHA's followed Hindu religion (99.4%, n-181) whereas only one followed Christian religion. Majority of ASHA workers were currently married (97.25%, n-177). Majority of ASHA workers had education upto secondary school certificate (86.81%, n-158) while only a low proportion of ASHA had acquired the graduation degree (2.19%, n-4). More than half of ASHA workers (63.18%, n-115) earned a monthly income between Rs. 5000-10,000. Less than half (45.05%) of ASHA workers had a work experience of more than 5 years. Most (82.4%) of ASHA workers had received regular training, while 17.6% did not receive. (Table 1)

Table 1: Socio-demographic factors among ASHA workers (N= 182)

Variables	No. of ASHA (N)	Percentage (%)
Age Group (Years)		
<30	32	17.5%
30-40	134	73.6%
>40	16	8.79%
Religion		
Hindu	181	99.45%
Muslim	0	0%
Christian	1	0.55%
Marital Status		
Married	177	97.25
Widowed	3	1.64
Separated	2	1.11
Educational Qualification		
Primary	8	4.39%
SSC	158	86.81%
Intermediate	12	6.59%
Graduate	4	2.19
Monthly Income (INR)		
5001-10000	115	63.18%
10001-15000	43	23.6%
Above 15000	24	13.18%
Work experience (Yrs)		
<1	50	27.47%
1-5	50	27.47%
>5	82	45.05%
Regular Training		
Yes	150	82.4%
No	32	17.6%

Table 2 illustrates the mean scores for each MCH component. The overall mean score of knowledge came out to be 28.6± 2.2. For antenatal visits, the mean score was 1.86±0.3. Similarly, T/d vaccine: 3.3 + 0.6, Iron and folic acid (IFA) supplementation: 1.71 + 0.4, Breastfeeding: 1.84+ 0.3, BCG Vaccine: 3.18+ 0.73, OPV vaccine: 3.51+0.6, Hep B Vaccine: 3.4+0.8, MR Vaccine: 3.06+0.5, Pentavalent vaccine: 3.53+0.8 and Vitamin A supplementation: 3.11+ 0.5.

Table 2: Mean scores of Maternal and Child health components.

Component	Maximum Score*	Minimum score	Mean Score
Antenatal visits	2	0	1.86 ± 0.3

T/d Vaccine	5	0	3.3 ± 0.6
Iron Folic acid	2	0	1.71 ± 0.4
Breastfeeding	2	0	1.84 ± 0.3
BCG vaccine	5	0	3.18 ± 0.73
OPV vaccine	4	0	3.51 ± 0.6
Hep B Vaccine	5	0	3.4 ± 0.8
MR Vaccine	5	0	3.06 ±0.5
Pentavalent Vaccine	5	0	3.53 ± 0.8
Vitamin A	4	0	3.11 ±0.5
Overall	39	0	28.6±2.2

*Maximum score refers to the maximum score that is possible in each component.

Table 3 demonstrates the knowledge of ASHA workers regarding the maternal components. Majority of ASHA workers (87.36%, n-159) had awareness about the minimum number of Antenatal visits according to the week of gestation. Less than half of the ASHA workers (41.75%, n-76) had correct knowledge about tetanus injection during pregnancy. Around three fourths of ASHA workers (73.07 %, n-133) had correct knowledge about Iron Folic acid supplementation during pregnancy. Majority of ASHA workers (84.61%, n-154) had correct knowledge about exclusive breastfeeding.

Table 3: Distribution of ASHA workers according to their knowledge on various Maternal Health Components (N=182).

Knowledge	No. of ASHA (N)	Percentage (%)
Ante Natal Visits		
Correct	159	87.36%
Incorrect	23	12.63%
T/d Injection		
Correct	76	41.75%
Incorrect	106	58.24%
IFA Supplementation		
Correct	133	73.07%
Incorrect	49	26.92%
Breastfeeding		
Correct	154	84.61%
Incorrect	28	15.38%

Less than half (47.25%, n-86) of ASHA workers had correct knowledge about BCG vaccination. Similarly, only around half (49.45%, n-90) of ASHA workers had correct Knowledge about Pentavalent vaccine in children. Very few (18.69%, n-34) of ASHA workers had correct Knowledge about Vitamin A supplementation in children. Only (17.58% n-30) of ASHA workers had correct Knowledge about Measles Rubella vaccine in children. More than half (58.24% n-106) of ASHA workers had correct Knowledge on Oral Polio vaccine in children. A Little less than half (47.25% n-86) of ASHA workers had correct Knowledge about Hepatitis B vaccine in children. (Table 4, Figure 2).

Table 4: Distribution of ASHA workers according to their Knowledge on Routine Immunization in children (N=182).

Knowledge	No. of ASHA (N)	Percentage (%)
BCG Vaccine		
Correct	86	47.25%
Incorrect	96	52.74%
Pentavalent Vaccine		
Correct	90	49.45%
Incorrect	92	50.54%
Vitamin A Supplementation		
Correct	34	18.69%
Incorrect	148	81.31%
Measles Rubella Vaccine		
Correct	32	17.58%
Incorrect	150	82.4%
OPV		
Correct	106	58.24%

Incorrect	76	41.75%
Hepatitis B Vaccine		
Correct	86	47.25%
Incorrect	96	52.74%

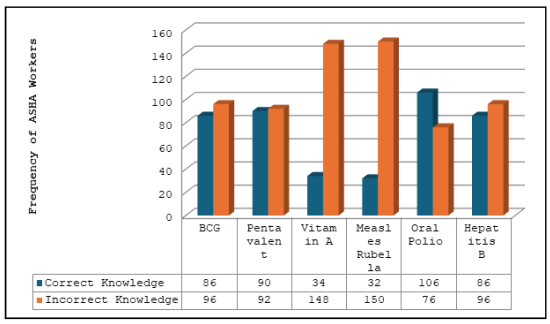

Fig 2: Distribution of ASHA workers according to their knowledge on Routine immunization.

Overall, about half of the ASHA workers 95 **(52.1%)** had correct knowledge about Maternal and child health components while 87 **(47.8%)** had incorrect knowledge **(**Figure 3**).**

Table 5 presents the association between the socio-demographic profile and knowledge level of ASHA workers**.** Among the 95 ASHA workers with correct knowledge, the majority i.e. 67 **(70.5%)** had education up to intermediate or higher, while the remaining 28 **(29.5%)** had studied only up to senior secondary level**.** This association was found to be statistically highly significant **(**p < 0.001**).** Regarding association between work experience and training, most of the ASHA workers who possessed correct knowledge had work experience of more than 5 years**. (**69; 72.6 **%)** which was found to be statistically significant**. (**p=<0.001**).**

Regular Training of ASHA workers served as an important determinant in influencing their Knowledge about Maternal and child heath components**.** Out of 95 ASHA workers who had correct knowledge, 90 **(**94.73**%)** had received regular training**.** There is strong association between regular training and higher knowledge of ASHA workers **(**P <0.001**).**

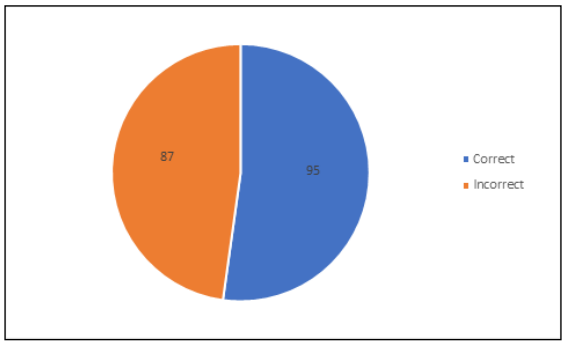

Fig 3: Distribution of ASHA workers according to their overall knowledge.

Table 5: Association between socio demographic factors and Knowledge of ASHA workers.

Variables	Correct Knowledge n/%	Incorrect Knowledge n/%	p-value
Educational Status			
Upto Senior Secondary School	28 (29.47%)	79 (90.8%)	< 0.001
Intermediate and above	67 (70.52%)	08 (9.20%)	
Total	**95**	**87**	
Work Experience			
<1 Year	09 (9.5%)	41 (47.1%)	<0.001
1–5 Years	17 (17.9%)	33(37.9%)	
>5 Years	69 (72.6%)	13(14.9%)	
Total	**95**	**87**	
Regular Training received			
Yes	90 (94.7%)	60(68.9%)	<0.001
No	05(5.2%)	27(31%)	
Total	**95**	**87**	

DISCUSSION

In the present study, majority of ASHA workers **(**73.6**%)** were aged between 30 and 40 years**.** Similar age distribution was reported in studies from Sonipat and Karnataka, where over half of the ASHAs were in the 30–39 years age group.[13,11] However, contrasting findings were noted in Dubaldhan **(**Haryana**)** and Mysuru, where a larger proportion of ASHAs were younger 21–25 years and below 30 years, respectively.[14-15] In another study in Southern part of India, Kerala, Ratnam J.L. et al**.** observed a shift towards an older age group **(**40–50 years**),** indicating regional differences in ASHA demographics.[16]

Very few studies have examined the religious background of ASHA workers**.** In the present study, nearly all participants were Hindu **(**99.45**%).** Similarly, Rohith M**.** et al**.** reported that the majority were Hindus **(**95.8**%),** with a small proportion being

Muslims (2.9%), aligning with our findings.[11] Majority of ASHA workers (86.8%) had completed Senior Secondary education. Similar educational levels were reported by Grover K. et al., with over 90% of ASHAs having high school education or above.[14] Likewise, Shet S. et al. from Karnataka found that 65% of ASHAs had completed senior secondary schooling.[12] This suggests a relatively well-educated workforce, which is vital for understanding and effectively delivering health services.

Correct and adequate knowledge of job roles and assigned activities is fundamental for ASHA workers to perform efficiently in providing quality primary healthcare at the community level. Overall, approximately half of the ASHA workers 52.1% had correct knowledge about Maternal and child health components in the present study. Regarding exclusive feeding, majority 84.61% of ASHA workers had correct knowledge. Similar findings were reported in Gujarat, where 86.1% of ASHAs had correct knowledge.[9] Shet et al. found 71% awareness about exclusive breastfeeding up to 6 months,[12] while Sharma et al. reported an adequate knowledge of 98.6% among rural and 100% among urban ASHAs.[10] Rohith M et al. (94%)[11] and a study from West Bengal (98.5%)[17]also showed higher knowledge levels. In Mumbai, all ASHAs surveyed were aware of exclusive breastfeeding.[18] The higher levels of knowledge about exclusive breast feeding in some states could be due to regular training by supervisors and ANMs or greater work experience. In contrast, Saxena et al. (71.9%)[19] and Sugandha BK et al. (49.2%)[15] reported that many ASHAs believed infants could be given water, honey, or other substances before six months, indicating significant knowledge gaps.

According to the present study, the knowledge regarding immunization varied across different vaccines among ASHA workers. Less than half (47.2%) had correct knowledge about BCG vaccination while for the pentavalent vaccine, only 49% of workers responded correctly. Knowledge levels were particularly low for Vitamin A (18.69%) and Measles-Rubella vaccine (17.58%). Slightly more than 50% (58.24%) had adequate knowledge about the oral polio vaccine. Knowledge about Hepatitis B vaccination was found in only 47.25% of ASHA workers.

Similar findings were reported by Kori S et al., who observed that only 60% of ASHA workers had knowledge about immunization.[20] Mahyavanshi K.D et al. also noted that 63% of ASHAs were aware of the immunization schedule and the diseases prevented through vaccination.[21] On the contrary, higher knowledge levels were reported by Sharma S et al., with 95.71% of ASHAs in rural areas and 80% in urban areas demonstrating adequate knowledge.[10] Studies by Pal J et al., Sugandha J et al., and Saxena S et al. also found high levels of immunization knowledge among ASHAs—86.32%, 78.0%, and over 90%, respectively.[15,17,18] Differences in knowledge levels across regions and specific vaccines suggest inconsistencies in training or information dissemination. Factors such as lack of incentives and increasing workload could contribute to declining knowledge and reduced effectiveness in mobilizing for the Universal Immunization Programme. ASHAs are often overburdened with responsibilities under multiple health programs and constant pressure to meet targets may compromise the quality of their service delivery.[22]

A significant association was observed between the education of ASHA worker and her knowledge regarding MCH in our study, which is in agreement with another study by Mohd. Murshid et al. (p-value= 0.049).[23] This consistency across studies strengthens the evidence that educational qualifications significantly influence ASHA workers' effectiveness and underscores the crucial role of formal education in delivering quality health services. Educated ASHAs are more likely to comprehend technical health guidelines and apply them appropriately during community interactions. Similarly, a highly significant association was also found between work experience and knowledge of ASHA workers ($p = 0.001$) which is in concordance to the previous study conducted in Bihar, which reported a p-value of 0.03.[23] This reflects the impact of practical exposure and on-the-job learning, as ASHAs with longer service durations are more likely to have encountered a range of maternal and child health scenarios, thereby contributing to improved understanding and performance.

The findings of the study reiterate the need to prioritize both educational qualifications during selection of and strategies for retaining experienced ASHA's. In addition, ongoing capacity-building efforts including refresher training and supportive supervision by senior health workers, can help bridge knowledge gaps and enhance the overall effectiveness of MCH programs.

Limitations of the study: The study's geographic limitation to villages within the Farukhnagar block of Gurugram district restricts the exploration of rural–urban disparities and inter-district variations, thereby limiting the generalizability of the findings to wider populations. Additionally, the assessment focused on only a few main components of maternal and child health, highlighting the need for further comprehensive research to evaluate ASHA workers' knowledge across all key MCH domains.

CONCLUSION

ASHA workers serve as a vital link between the community and the primary health care system in India. The present study highlights that overall, only about half of the ASHAs had adequate knowledge across key maternal and child health domains. Although, ASHA workers demonstrated good awareness of certain maternal health components, significant gaps persist in their knowledge of child

health services, particularly immunization and vitamin A supplementation. Educational level, work experience, and regular training were found to be strong determinants of knowledge. These findings underscore the need for structured and continuous capacity-building initiatives. Emphasis should be placed on periodic refresher trainings, especially targeting weaker knowledge areas, and strengthening supervision mechanisms. Enhancing the knowledge base of ASHA workers is essential to improving the quality and reach of MCH services in rural communities.

Ensuring that ASHAs possess accurate and comprehensive knowledge is essential, as they are often the first point of contact in the healthcare delivery chain. To maintain and enhance their effectiveness, regular training sessions conducted by ANMs or supervisors are imperative. Monthly meetings with ANMs should be made mandatory and closely monitored by the Medical Officer at the Primary Health Centre. These training sessions must emphasize the core responsibilities of ASHA workers, including the key tasks and health targets essential for protecting the health and well-being of pregnant women and new-borns.

Ethical considerations: The approval of the Institutional Ethics Committee of Faculty of Medicine and Health Sciences, SGT University was obtained before the conduction of study (IEC/FMHS/MD/MS/2023-26) written informed consent, accompanied by a detailed information sheet translated into the local language (Hindi), was provided to the participants before the study. Confidentiality and anonymity of all data were strictly maintained throughout the process.

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