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## **Original Research Article**

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# A study to assess the effectiveness of self-instructional module on minor ailments of children among anganwadi workers

Vishal Jamra<sup>1</sup>, Ramniwas Mahore<sup>1</sup>\*, Dinesh Mohan Saxena<sup>1</sup>, Anil Kumar Agarwal<sup>2</sup>

Department of Community Medicine, <sup>1</sup>L. N. Medical College and Research Centre, Bhopal, <sup>2</sup>G. R. Medical College, Gwalior, Madhya Pradesh, India

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\*Correspondence: Dr. Ramniwas Mahore,

E-mail: drmahore@gmail.com

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#### **ABSTRACT**

Background: Anganwadi workers (AWW) are India's primary tool against the menace of child malnourishment, infant mortality, and lack of child education, community health. The Anganwadi workers should have basic knowledge of treatment of minor ailment in under five children.

Methods: This cross sectional study was conducted on 48 AWWs of selected ICDS centers of District Bhopal, Madhya Pradesh by simple random sampling method.

Results: Brief structured interview and structured questionnaire techniques were used to collect responses from the AWWs. All the AWWs (48) were trained and had been rendering adequate services but they were not much reflective of the same when being questioned on the knowledge parameter. The study revealed that out of 48 AWW, more than 80% were in the age group of 25-45 years. After IMCI based training given to AWWs, their knowledge and skills for treating minor ailments under five children was significantly improved from pre-test assessment (Total score 1087 with Mean (SD) score 2.83 (1.32) to post-test assessment1392 with Mean (SD) score 3.62 (1.38). Knowledge of AWWs regarding under five children in all 8 domains of illness was changed significantly 14.1% from 50.3% in baseline survey to 64.4% in end line survey.

Conclusions: As the Anganwadi worker is the key person in the programme, her education level and knowledge of minor ailments for under five children plays an important role related to her performance in the Anganwadi centre.

**Keywords:** AWW, Knowledge, Minor ailments, Under five children

### INTRODUCTION

Pediatric minor ailments are those which can be treated by someone with very little knowledge and does not required specially trained person. Minor ailments like diarrhea, dysentery, common cold, cough, fever, worm infestation and scabies can treat with very low knowledge.1

The National Policy for Children, 1974 has given a high priority on early childhood care and education. In the year 1975, integrated child development (ICDS) programme gave provision of meeting the holistic need of the children, in response to the challenge of early childhood care and education the Anganwadi worker is the community based voluntary frontline workers of the ICDS programme. She assumes the pivotal role due to her close and continuous contact with the children. The Anganwadi workers monitor the growth development, immunization, organizing complimentary feeding and she treats minor ailments.<sup>2</sup> A study was done on the evolution of knowledge and efficacy of Anganwadi workers and result was found that there was significant improvement in the knowledge after the training. Result of the study showed that initial inadequate knowledge in spite of training programme. It

was suggested that more frequent and on the job training should be given to Anganwadi workers. Since most of the children go to Anganwadi center every day and minor ailments like diarrhea, dysentery, common cold, fever, malnutrition were more in children, it is responsibility of Anganwadi worker to know about the minor ailments of children. So, to give care of children the Anganwadi worker should have adequate knowledge and knowledge will improve after self-instructional module on minor ailments. In view of the above statistical data considering the knowledge of minor ailments among children, the researcher personally felt that there is a need to study in this area and educational intervention to Anganwadi workers which will change knowledge level to provide care in the Anganwadi centre itself.

## **METHODS**

This study was undertaken to explore the important parameters of functioning of ICDS in terms of knowledge and practices of AWWs. A descriptive cross sectional survey was planned on AWCs of purposively selected ICDS centers of district Bhopal between November 2016 and January 2017. To exclude the biasness in the sample, 48 AWCS were selected by simple random technique. Structured questionnaire was prepared to collect sociodemographical data, assess knowledge. The questions regarding knowledge, functioning was formulated in simple language for clarity and ease of understanding, on the basis of pertinent literature. The nature and purpose of study was explained to AWW. The study was carried out with AWW consent and cooperation. A pre-designed and pre - tested questionnaire prepared in vernacular language was used to collect information from AWW. The basic information was collected in terms of her name, age, education and experience. The questionnaire was designed so as to cover every aspect related to minor ailment among children. It included questions on different aspects of minor ailments like Immunization, diarrhoea, respiratory infections, malnutrition, growth monitoring and danger signs for referral etc. One mark was given for a correct response, while no mark was given for a wrong response or unanswered question. Pretest assessment to determine the knowledge of minor ailments among AWW was carried out before providing training and one post-test assessment was carried out after completion of training. Pre and post-test assessment was conducted using the same questionnaire. There were 45 questions in the questionnaire and each correct answer was given a score of 1. Thus, the test had maximum score of 45 in both pre and post-test. Thus information was collected from 48 AWW. The data collected was statistically analyzed using MS Excel sheet.

## Assessing knowledge score

Forty five knowledge questions were considered to estimate the mean knowledge score related to eight domains of ICDS services.

## 1. Immunization

- 2. Diarrhoea
- 3. Pneumonia
- 4. Prophylaxis against blindness
- 5. Nutrition and Health Care
- 6. Supplementary Nutrition
- 7. Growth monitoring
- 8. Referral services

If the response is correct then it is coded as 1 or else equal to 0. So the individual knowledge score will vary from 0 to 45. Total knowledge score is estimated by adding the individual scores of each response.

Knowledge score for individual (i) = Score of (q1+ q2+ q3+.....+q44+q45)

Where i=1, 2,.....48.

Total knowledge score: Sum total of individual knowledge score. The obtained data was entered and analyzed in Microsoft excel. Descriptive statistics were used to describe demographic characteristics and other variables considered in the study. All the respondents approached to participate in the study completed the questionnaires.

### Ethical consideration

Sanction to conduct the research study was obtained from the authority and the Ethical Committee of L.N. Medical College and Research Center Bhopal, MP. Informed consent was also obtained from individuals found to be eligible on the basis of inclusion criteria and willing to participate in the study. Anonymity and confidentiality were maintained throughout the study. Research was conducted after the approval by the District Programme Officer. Thus, ethical principle of self-determination was maintained and subjects were treated as autonomous sources by informing them about the study and allowing them to voluntarily choose to participate.

## **RESULTS**

We conducted descriptive analysis to determine difference between pre-test and post-test performances of the selected AWWs. The study revealed that out of 48 AWW, majority of them more than 80% were in the age group of 25-45 years. The education profile of AWW revealed that 64% were educated up to Senior Secondary (up to 10<sup>th</sup> and 12<sup>th</sup>), while 22% were educated more than senior secondary level and only12.5% were educated up to middle class. As regards work experience, maximum subjects (58.3%) had work experience of more than 5 years (Mean 7.8 yrs) (Table 1).

The 2 days training resulted in large knowledge improvements amongst AWWs from pre to post-tests. It is apparent from Table 2 that after training; there is an improvement in knowledge of AWWs in most of the indicators and majority of such improvement are also

statistically significant. It is not surprising to see that knowledge of AWWs is high for indicators which are continuously monitored (e.g. immunization 70.5% with mean (SD) score was 4.2 (0.8) ) but that knowledge is very low for indicators that are not being monitored in their routine program like referral services 31.9% with mean (SD) score was 0.9 (0.8). It is evident that 70.5% AWWs were having correct knowledge about immunization before the training programme; after the training the percentage of knowledge increased to 83.3%. A mere 48.5% and 49.5% of the AWWs were aware regarding the treatment of diarrhea and pneumonia with the mean[SD] 3.4[1.1] and 3.9[1.0] score respectively before the training; post training assessment shows significant improvement 58.9% and 56.2% with the mean[SD] score 4.1[1.3] and 4.5[1.2] respectively. Before the training only 37.5% AWWs had knowledge

regarding the prophylaxis against blindness. After the training 50% of the AWWs could explain regarding the prophylaxis treatment for preventing blindness with the pre-test mean (SD) 2.2 (0.7) and post-test mean (SD) 4.9 (1.0). Before the training programme, 54.6% and 59.9% of AWWs were aware regarding appropriate advice to be given to a mother about their children diet (nutrition and health care) and the nutritional value of a child's food (supplementary nutrition) respectively. After the training programme 63.3% of AWWs could explain frequency of feeding or "how many times should one feed complementary food to a normal child of 12-24 months, besides breast feeding" and 70.8% could be able to told that how one can increase the nutritional value of a child's food, however, this critical area needs more intervention. Knowledge in growth monitoring 45.5% before test was also significantly improved in post-test 55.9%.

Table 1: Socio- demographic profile of AWW (N=48).

Socio- demographic v	ariables	Frequency Percentage	
Age in years	less than 25	3	6.25
	25-35	17	35.42
	35-45	22	45.83
	Above 45	6	12.5
	Middle(8 <sup>th</sup> )	6	12.5
Education	Senior secondary (up to 10 <sup>th</sup> and 12 <sup>th</sup> )	31	64.58
	Graduate / Postgraduate	11	22.92
	less than 5	7	14.58
Work experience	5-10	28	58.33
	More than 10	13	27.08

Table 2: Knowledge of AWWs regarding different aspects of health services provided (N=48).

Sl. No	Domains of questions	No. of questions asked (45)	Correct response by AWW No (%)		Score of correct response Mean (SD)		P value
			Pre-test	Post -test	Pre-test	Post-test	
1.	Immunization (Total M.Score=288)	6	203 (70.5)	240 (83.3)	4.2 (0.8)	5.0 (0.9)	0.001*
2	Diarrhea (Total M.Score=336)	7	163 (48.5)	198 (58.9)	3.4 (1.1)	4.1 (1.3)	0.002*
3	Pneumonia (Total M.Score=384)	8	190 (49.5)	216 (56.2)	3.9 (1.0)	4.5 (1.2)	0.019*
4	Prophylaxis Against Blindness (Total M.Score=288)	6	108 (37.5)	144 (50.0)	2.2 (0.7)	4.9 (1.0)	0.001*
5	Nutrition & Health Care (Total M.Score=240)	5	131 (54.6)	152 (63.3)	2.7 (0.9)	3.2 (1.0)	0.001*
6	Supplementary Nutrition (Total M.Score=192)	4	115 (59.9)	136 (70.8)	2.4 (0.8)	2.8 (0.7)	0.006*
7	Growth Monitoring (Total M.Score=288)	6	131 (45.5)	161 (55.9)	2.7 (1.0)	3.3 (1.3)	0.010*
8	Referral Services (Total M.Score=300)	3	46 (31.9)	91 (63.2)	0.9 (0.8)	1.9 (0.7)	0.001*

<sup>\*</sup>Statistically significant.

The Table3 shows that the mean and standard deviation of the level of knowledge of Anganwadi workers about total 45 questions described under 8 domains pre-test and

after post-test. Table shows that the correct score achieved before training was 1087 (50.32%) with the mean (SD) score was 2.83 (1.32) and after training it was

increased up to 1392 (64.44%) with the mean (SD) score was 3.62 (1.38). which means that the training has helped to increase knowledge among participants by 14.1% with

the total score and the percentage improved 27.9% by their mean difference and this achievement was found statistically significant (p<0.005).

Table 3: Pre and post-test comparison of knowledge of anganwadi workers (maximum score 2160 of total subjects with 8 domains of questions).

Knowledge scores	No (%)	Mean (SD)	Mean difference (percentage difference)	t value	P value
Pre-test	1087(50.32)	2.83(1.32)	_		
Post- test	1392(64.44)	3.62(1.38)	0.79 (27.9)	2.87	0.005

Table 4: Knowledge of AWWs with correct answer regarding different aspects of health services provided according to their education status.

		Correct response by education status				
<b>Domains of questions</b>	No. of questions asked (45)	Middle (8 <sup>th</sup> )	Senior Secondary	Graduate /	ANOVAs	
		(n=6)	$(10^{th} & 12^{th}) (n=31)$	Postgraduate (n=11)	P value	
		Mean (SD)	Mean (SD)	Mean (SD)		
Immunization	6	3.5 (0.55)	4.64 (0.71)	4.91 (0.30)	0.001*	
Diarrhoea	7	2.0 (0.63)	3.22 (0.80)	4.72 (0.47)	0.001*	
Pneumonia	8	2.5 (0.55)	3.97 (1.02)	6.0 (0.63)	0.001*	
Prophylaxis against blindness	6	1.83 (0.75)	2.16 (0.78)	2.73 (0.47)	0.033*	
Nutrition and health care	5	2.0 (0.63)	2.55 (0.81)	3.91 (0.70)	0.001*	
Supplementary nutrition	4	1.17 (0.41)	2.48 (0.68)	3.27 (0.47)	0.001*	
<b>Growth monitoring</b>	6	1.66 (0.82)	2.58 (0.62)	4.18 (0.60)	0.001*	
Referral services	3	0.33 (0.52)	1.19 (0.70)	2.09 (0.54)	0.001*	

<sup>\*</sup> Statistically significant.

The level of education was observed to be positively associated with awareness about danger signs for referral among AWW with graduation vs., senior secondary & up to middle class (Mean score was 2.9 vs. 1.2 & 0.3). Table 4 revealed the level of education was observed to be positively associated with awareness in all eight domains of pediatric minor ailments. Difference of knowledge regarding all eight domains was highest in graduate than the senior secondary or up to middle class AWWs and afterwards senior secondary groups were more knowledgeable than up to middle class and it was found statistically significant in all domains.

## **DISCUSSION**

Despite health improvements in India over the last thirty years, lives continue to be severely affected by early childhood diseases. Various studies in recent past has revealed that implementation of services under ICDS are not up to satisfactory standards and still more efforts are needed for improving the quality of services for the successful achievement of expected targets. The present study was conducted among 48 AWW of selected ICDS centers on field basis. The study revealed that 81.25% of AWW belonged to age group of 25-45 years while 12.1% of workers belonged to age group of more than 45 years. While in another study done in Aurangabad city,

maximum number of workers, (39.28%) were in the age group of 41-50 yrs.<sup>5</sup>

The study education profile of AWW revealed that 64% were educated up to senior secondary (up to 10<sup>th</sup> & 12<sup>th</sup>) while 22% were educated more than senior secondary level and only12.5% were educated up to middle class. Other study done by Kaur et al, Desai et al revealed that 41.5% and 37% were educated up to higher secondary level.<sup>6,7</sup> Similar findings were revealed in another study done by Sandhyarani and Rao done among AWW in Mysore district where only around two percent have pursued post-graduation degree.<sup>8</sup> As regards work experience, maximum subjects (58.3%) had work experience of more than 5 years (Mean 7.8 years). Similar findings were observed in study of ICDS block of Aurangabad city where 82% majority of AWW where had an experience of more than 10 yrs.<sup>5</sup>

Awareness levels about prophylaxis against blindness and referral service was found to be on lower side. Only 37.5% AWW correctly mentioned preventive measures for blindness and 31.9% mentioned correct situations in which referral should be made. Similar findings about knowledge of referral were found in Aurangabad study (21.5%) and less than 37% in Trivandrum study. The awareness regarding the provision of referral services

was found to be low among AWW in another study done by Jena in Odisha where only 20 percent workers were having the knowledge about the children who need referral. 10 Awareness about newborn care practices in all 8 domains was observed to increase in significant way with increase in education level. Similar observation was made in another study by Jena where knowledge score was observed to be higher for graduated women as compared the other qualified women. 10 Another study also shows that awareness about ICDS services increases with the increased level of education. 11 As regards awareness levels about supplementary foods required to compensate the child calorie and protein intake 59.9% respondents correctly mentioned and it was increased up to 70.8% after module training. Importance of nutrition and health education, (54.6%) AWWs had satisfactory knowledge about the assessment of nutritional status of child, (45.5%) regarding the need maintenance of growth chart, while in the study of Himachal Pradesh (38.33%). 12 AWWs had knowledge regarding the normal health, nutrition and development needs of child and similarly with our study 56.7% regarding the how she monitors the growth but in Another study made in Purmandal block shows that in spite of the fact that most (92.5%) of the Anganwadi workers were trained, it was found that performance as well as awareness among Anganwadi workers regarding the importance of growth charts and growth monitoring was not satisfactory. 13 Awareness levels about diarrhea as a disease was found to be on lower side. Only 48.5% AWW correctly mentioned that diarrhea can be a fatal disease in a child. Similarly around half of respondents (49.5%) were aware about respiratory count for diagnosing pneumonia. While another study by Jena revealed that around 76.6% workers had correct knowledge about Diarrhoea and Pneumonia.10 The difference could be because education level was found to be on higher side (30% AWW had education up to graduation level and above).

The awareness regarding the provision of referral services was found to be low among AWW. Less than half of AWW were aware about signs for referral in case of a child. (31.9%) of the respondents correctly mentioned causes for the that child must be referred, it was similar to in another study done by Jena in Odisha where only 20 percent workers were having the knowledge about the children who need referral. 10 Significant improvement in Mean score (SD) was observed in the knowledge regarding minor ailments in post-test scores of AWWs. Similarly statistically significant improvement was observed in the knowledge after post test score of AWWs regarding integrated management of childhood illnesses in the study of Mankar et al and by study of Punjab. 14,6 This study as well as the studies done in past have strongly concluded on the need of improved knowledge and awareness among Anganwadi workers but unfortunately it was found to be the most underrated aspect of their job profile. Anganwadi workers are India's primary tool against the scourges of child illness and

curbing preventive diseases such as most minor ailments. 15

#### CONCLUSION

As we were able to bring significant increase in knowledge of all domains our intervention can be consider as successful intervention. It was found that most of the Anganwadi workers didn't have the sufficient skill to examine & detect the cases of pediatrics minor illness. They also don't know proper treatment & morbidity in under five children. Simpler guidelines on clinical basis are required so that Anganwadi worker with a limited educational background can decide which cases to be referred and which cases to be managed at home. Continued training and supervision of the Anganwadi Workers will help them in better identification Majority of AWW didn't know about most of minor ailments, but it may improve significantly by updating their information through continuous education. Continuous education in the form of refresher training (in-service) should be on regular basis for updating the knowledge of AWWs. Frequent and intensive trainings will definitely improve their knowledge. The conclusion was that Anganwadi workers need more training to know various aspects and treatment of minor ailments.

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Institutional Ethics Committee

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