

# Impact of educational status of Anganwadi worker on their knowledge and practice regarding integrated management of childhood illness

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## ABSTRACT

**Background:** Today, integrated child development services (ICDS) represents one of the world's largest programs for early childhood development. Most of the evaluation study concentrated on the nutritional and health status of the beneficiaries of ICDS. Less focus has been shifted over to assess the knowledge and awareness among Anganwadi worker (AWW) regarding various health-care services provided by them, who are actually the main resource person. **Objectives:** The objectives of this study were to study the educational qualification of AWWs and to assess the knowledge and practice of AWWs regarding various components of implementation of Integrated Management of Childhood Illness (IMNCI) and correlate them with their educational status. **Materials and Methods:** The present study was a cross-sectional study conducted in five Talukas of Surendranagar district from August 2012 to January 2013. Sample size included all AWWs of five Talukas of Surendranagar district those who had received basic IMNCI training. Of 833 AWWs, 774 were interviewed. **Results:** The analysis shows that majority of AWWs were educated up to secondary level (49.49%). 57.4% of AWWs were able to correctly answer about the aims of IMNCI training. Study findings suggest that majority of AWWs having good knowledge about breastfeeding and pneumonia, while their practice related to health-care services regarding IMNCI was found satisfactory. **Conclusion:** As the AWWs are the key person in the program, her education level and knowledge regarding various health-care services play an important role related to her performance. In addition, the refresher training about IMNCI plays a valuable role in improving their performance.


**KEY WORDS:** Anganwadi Worker; Implementation of Integrated Management of Childhood Illness; Knowledge

## INTRODUCTION

India is home to overpopulation, malnutrition, poverty, unemployment, low literacy levels, and more, with a target to make health-care accessible and affordable for everyone. Given the urgency of health-care issues, child mortality, malnutrition, and so on, our country needs high number of medical and health-care professionals to cater to the

population that is now running into billions. Faced with acute shortage of skilled professionals, the Government's Integrated Child Development Services (ICDS) scheme is using the local population to help meet its grand goals.<sup>[1]</sup>

An Anganwadi is the focal point for delivery of ICDS services to children and mothers. A network of "Anganwadi Centre" literally is a courtyard play center, provides integrated services comprising supplementary nutrition, immunization, health checkup, referral services, preschool education, and health and nutrition education. It is a childcare center located within the village or the slum area itself. It is the central point for the delivery of services at community levels to children <6 years of age, pregnant women, nursing mothers, and adolescent girls. An Anganwadi worker (AWW), a female selected from the local community, is a community-based

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frontline honorary worker of the ICDS program. She assumes a pivotal role in promoting child growth and development due to her close and continuous contact with the beneficiaries. She is also an agent of social change, mobilizing community support for better care of young children, girls, and women.<sup>[2]</sup>

In mid-nineties, the World Health Organization (WHO) and UNICEF and other international partners came out with a new strategy known as Integrated Management of Childhood Illness (IMCI). This was an effort to bring health equity for child health. The strategy emphasizes on integrated approach for treating the sick child rather than in isolation. It also emphasizes on improving the family and community practices as well as care provided by the health system for better care of child.<sup>[3]</sup> Since newborn care is an important issue for bringing down the infant mortality rate in India, neonatal aspect has been included in the package adapted by India.

Implementation of implementation of Integrated Management of Childhood Illness (IMNCI) in an effective way in any district would be possible only with the total involvement of AWWs of ICDS, and other grassroots functionaries of other sectors. With minimum qualification to boot, an AWW is deemed wise in the ways of the village and the duties that she performs. Their understanding, communication skills, and approach are needed to implement the grand projects such as IMNCI and ICDS, making them the most vital link in delivering the “health for all” mission. Hence, the present study was conducted to know the educational status of this vital link and to associate it with their knowledge and practice of child health care regarding IMNCI.

### Objectives

The objectives of this study were as follows:

1. To study the level of education of AWWs.
2. To correlate educational status of AWWs with their knowledge and practice regarding IMNCI.

### MATERIALS AND METHODS

The study was carried out during the period of August 2012–January 2013. Of total 13 Talukas of Surendranagar district, five Talukas were selected through simple random sampling for the study, i.e., Sayla, Limbdi, Dhranghdra, Muli, and Wadhwan.

Of total 833 AWWs from selected Talukas who have received basic IMNCI training, 774 workers were selected and interviewed at monthly Taluka meeting. While remaining 59 AWWs were excluded from the study, as because either they were absent during this meeting or submitted incomplete questionnaire.

The selected AWWs were interviewed using a predesigned and pretested questionnaire to collect the relevant information.

The necessary ethical permission for the survey was obtained from the institutional ethical committee.

### RESULTS

Age distribution of AWWs shows that almost half (49.48%) of the AWWs were in the age group between 20 and 40 years. The mean age of AWWs who were participated in the study is  $40.94 \pm 9.03$  years. Literacy status of AWWs shows that almost half of them (49.5%) were educated up to secondary level. While nearby 20% of the workers were studied only up to primary education which could act as a barrier to any program implementation (Table 1).

When it was asked about the aims of IMNCI training, 57.4% of workers were answered it correctly, i.e., to decrease neonatal mortality and under-five mortality rate both. While remaining 42.6% AWWs were replied either one of them (Table 2).

To assess the knowledge of AWWs related to IMNCI, questions regarding diagnosis of various illnesses in <5-year child as per IMNCI guidelines were asked [Table 3]. When their knowledge was evaluated about clinical signs of dehydration in a case of diarrhea in <2-month-old child, it is noted that of the 774 respondents, 345 were answered it correctly. Moreover, of these 345 AWWs, majority were educated secondary and higher level as compared to primary level (18%). The knowledge regarding clinical signs to identify breastfeeding problems in 0–2-month-old child among AWWs educated up to primary level was observed lower (19.4%) as compared to secondary level (45.5%) and higher secondary and above (35.1%). The difference is also statistically significant ( $P < 0.05$ ) (Figure 1).

**Table 1:** Age-wise distribution of AWWs

Age group	Number of AWWs (%)
20–40	383 (49.48)
41–50	268 (34.63)
51–60	123 (15.89)
Total	774 (100)

AWW: Anganwadi worker

**Table 2:** Knowledge of AWWs regarding aims of IMNCI training

Aims of IMNCI training	Number of AWWs (%)
To decrease under-five mortality rate	92 (11.9)
To decrease neonatal mortality rate	238 (30.8)
Both of above	444 (57.4)
Total	774 (100)

IMNCI: Implementation of Integrated Management of Childhood Illness, AWWs: Anganwadi workers

**Table 3:** Association between educational status of AWW and their knowledge regarding IMNCI

Questions related to IMNCI showing knowledge of AWW	Educational status of AWW				$\chi^2$ value (P value)
	Primary n (%)	Secondary n (%)	Higher secondary and above n (%)	Total n (%)	
Examination in case of diarrheal illness in 0–2 month-old baby					
Look for consciousness and general condition	10 (22.7)	24 (54.6)	10 (22.7)	44 (100)	14.49 (0.1)
Frequency of diarrhea and skin pinch	62 (19.8)	143 (45.5)	109 (34.7)	314 (100)	
Examination of eyes	19 (26.8)	37 (52.1)	15 (21.1)	71 (100)	
All of the above	62 (18.0)	179 (51.9)	104 (30.1)	345 (100)	
Look for signs of breastfeeding problem in 0–2-month-old baby					
Look for general condition	4 (19.1)	13 (61.8)	4 (19.1)	21 (100)	22.18 (0.008)
Look for sucking of baby	7 (12.3)	38 (66.7)	12 (21.0)	57 (100)	
Look for proper attachment of baby	41 (23.4)	95 (54.3)	39 (22.3)	175 (100)	
All of the above	101 (19.4)	237 (45.5)	183 (35.1)	521 (100)	
Clinical features of pneumonia in 2 months–5-year-old child					
Breathlessness and increased RR	33 (17.1)	95 (49.2)	65 (33.7)	193 (100)	12.15 (0.2)
Indrawing of chest	3 (11.5)	11 (42.3)	12 (46.2)	26 (100)	
Cough	20 (29.0)	27 (39.1)	22 (31.9)	69 (100)	
All of the above	97 (20.0)	250 (51.4)	139 (28.6)	486 (100)	
Clinical features of malaria in 2 months–5-year-old child					
Unconsciousness	16 (41.0)	19 (48.7)	4 (10.3)	39 (100)	33.29 (0.0001)
Convulsion	8 (18.2)	14 (31.8)	22 (50.0)	44 (100)	
Fever	73 (16.6)	228 (51.8)	139 (31.6)	440 (100)	
All of the above	56 (22.3)	122 (48.6)	73 (29.1)	251 (100)	
Clinical examination to diagnose malnutrition in 2 months–5-year-old child					
Child seems to be malnourished on examination	20 (16.2)	67 (54.5)	36 (29.3)	123 (100)	31.74 (0.0002)
Examination for pedal edema	12 (44.4)	15 (55.6)	0 (0.0)	27 (100)	
To decide the degree of malnutrition from growth chart	41 (14.9)	129 (46.9)	105 (38.2)	275 (100)	
All of the above	80 (22.9)	172 (49.3)	97 (27.8)	349 (100)	
Clinical examination to identify anemia in 2 months–5-year-old child					
Examination of eye	20 (16.0)	66 (52.8)	39 (31.2)	125 (100)	29.34 (0.0005)
Examination of tongue	19 (20.9)	57 (62.6)	15 (16.5)	91 (100)	
Examination of palm	46 (19.3)	97 (40.8)	95 (39.9)	238 (100)	
Examination of blood	68 (21.3)	163 (50.9)	89 (27.8)	320 (100)	

AWW: Anganwadi worker, IMNCI: Implementation of Integrated Management of Childhood Illness

When their knowledge was assessed regarding clinical features of pneumonia in 2 months–5-year-old child, it was seen that the AWWs who studied secondary level and above were having good knowledge about pneumonia (51.4% and 28.6%) as compared to workers who studied only up to primary level (20%). However, there was no statistically significant association found with education. It was observed that only 251 workers of 774 could answer correctly regarding clinical features of malaria in 2 months–5-year-old child. Of these 251 respondents, majority were educated up to secondary level (48.6%) or above (29.1%).

Of 774 respondents, 349 were responded correctly about the clinical examination for malnutrition in 2 months–5-year-old child, and the difference is statistically highly significant with the literacy status of AWWs. When they were assessed regarding their knowledge about clinical examination of anemia in 2 months–5-year-old child, it was observed that only about 1/5<sup>th</sup> of respondents educated up to primary level could answer the questions correctly as compared to secondary level (50.9%) and higher secondary and above (27.8%) level education.

Table 4 depicts the association between literacy status of AWWs and their practice regarding IMNCI. It shows that

of 774 AWWs only 294 (37.98%) were following correct treatment guideline for mild infection in <2 months child. Of 592 respondents who were correctly counsel the mother about the preparation of oral rehydration solution for dehydration, it was found to be significantly higher difference ( $P < 0.001$ ) among AWWs educated up to secondary level (44.8%) and above (35.8%) as compared to primary level (19.4%).

It is seen that around 55% of the total respondents were correctly examined the case of pneumonia in 2 months–5-year-old child. Among these, the proportion of workers who studied secondary level was higher (48.3%) followed by higher secondary and above (32.5%) and primary level education (19.2%), and the difference was also found statistically significant. When they were observed for the practice of the treatment of pneumonia in 2 months–5-year-old child, it is seen that only 19.4% of the workers who were educated up to primary level could treat the child correctly as compared to secondary level (51.1%) and higher secondary and above (29.5%). When their skill regarding referral of the malnourished child of 2 months to 5 years old was assessed,

it was found that majority of the workers who had correctly follow the IMNCI guideline to refer the malnourished child were educated up to secondary level (45.1%) followed by higher secondary and above (29.5%) and primary level (25.4%).

When they were asked about the need of refresher course/training, more than 3/4<sup>th</sup> (78.1%) of the respondents were in favor of it and statistically significant association ( $P < 0.01$ ) was also found between educational status of AWWs and their response regarding need for refresher training (Table 5).

## DISCUSSION

ICDS scheme is the largest programme for promotion of maternal and child health and nutrition not only in India but also in the whole world. As the AWWs are the backbone of the ICDS, the success of the program depends on the extent to which they can deliver their services. The study participants' mean age was  $40.94 \pm 9.03$  years which was nearly similar to

**Table 4:** Association between educational status of AWW and practice regarding IMNCI

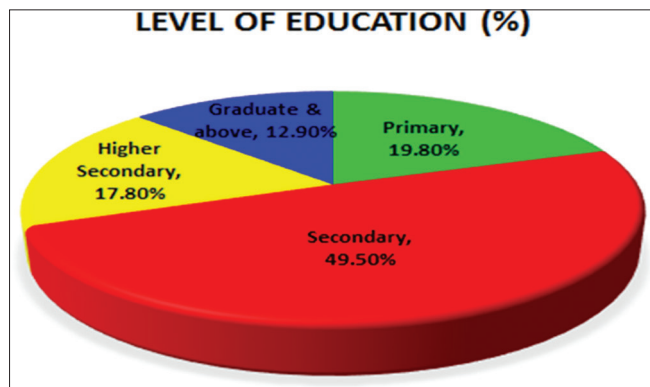
Questions related to IMNCI showing practice of AWW	Educational status of AWW				$\chi^2$ value (P value)
	Primary (%)	Secondary (%)	Higher secondary and above (%)	Total (%)	
What treatment will give in mild infection in 0–2-month-old baby?					
Cotrimoxazole orally for 5 days	53 (14.6)	165 (45.3)	146 (40.1)	364 (100)	54.72 (<0.001)
Advice mother to apply gentian violet	11 (20.0)	40 (72.7)	4 (7.3)	55 (100)	
Follow-up after 2 days	5 (8.2)	42 (68.8)	14 (23.0)	61 (100)	
All of the above	84 (28.6)	136 (46.2)	74 (25.2)	294 (100)	
Counseling of mothers about how to make ORS					
Wash hands	19 (35.8)	32 (60.4)	2 (3.8)	53 (100)	50.08 (<0.001)
1 packet of ORS powder mix in 1 L of water	11 (21.6)	26 (51.0)	14 (27.4)	51 (100)	
Stirring of powder and taste it	8 (10.3)	60 (76.9)	10 (12.8)	78 (100)	
All of the above	115 (19.4)	265 (44.8)	212 (35.8)	592 (100)	
Examination of a case of pneumonia in 2 months to 5 years child					
Count RR for 1 min	57 (21.2)	124 (46.1)	88 (32.7)	269 (100)	18.96 (0.004)
Examination of chest for indrawing	14 (18.2)	52 (67.5)	11 (14.3)	77 (100)	
All of the above	82 (19.2)	207 (48.3)	139 (32.5)	428 (100)	
Treatment of pneumonia in 2 months to 5 years child					
Cotrimoxazole orally for 5 days	35 (20.4)	85 (49.4)	52 (30.2)	172 (100)	18.64 (0.02)
Follow-up examination after 2 days	27 (25.5)	45 (42.4)	34 (32.1)	106 (100)	
Household remedy for cough and cold	10 (12.7)	40 (50.6)	29 (36.7)	79 (100)	
All of the above	81 (19.4)	213 (51.1)	123 (29.5)	417 (100)	
Refer the case of malnutrition in 2 months to 5 years child					
Advise about feeding problem	21 (17.2)	62 (50.8)	39 (32.0)	122 (100)	36.49 (0.00003)
Follow-up after 14 days	13 (21.3)	35 (57.4)	13 (21.3)	61 (100)	
If feeding problem is not solved, then refer to hospital and follow-up examination	17 (8.9)	105 (55.3)	68 (35.8)	190 (100)	
All of the above	102 (25.4)	181 (45.1)	118 (29.5)	401 (100)	

ORS: Oral rehydration solution, AWW: Anganwadi worker, IMNCI: Implementation of Integrated Management of Childhood Illness

**Table 5:** Association between educational status of AWWs and the need for refresher course

Educational status	Need for refresher course?		Total
	Yes (%)	No (%)	
Primary	118 (77.1)	35 (22.9)	153 (100)
Secondary	282 (73.6)	101 (26.4)	383 (100)
Higher secondary	118 (85.5)	20 (14.5)	138 (100)
Graduation and above	87 (87)	13 (13)	100 (100)
Total	605 (78.1)	169 (21.9)	774 (100)

Chi-square=13.64, df=3, P=0.003. ORS: Oral rehydration solution, AWW: Anganwadi worker



**Figure 1:** Education level of Anganwadi workers

the study conducted by Datta *et al.* in Pondicherry where the mean age of AWWs was 42.64 ± 7.19 years.<sup>[4]</sup>

As the AWW is the key person in the program, her education level plays an important role related to her performance in the Anganwadi center. In our study, 49.5% of AWWs were studied up to secondary level education, 17.8% up to higher secondary level, 12.9% graduate and above, and 19.8% up to primary level. The educational status of AWWs in the study conducted by Gaurav Desai was 37% up to secondary level education, 37% higher secondary level, 23% graduate and above, and only 3% up to primary level education.<sup>[5]</sup>

As per the findings of our study, AWWs have good knowledge about breastfeeding (67.3%) and pneumonia (62.8%) followed by diarrheal illness, malnutrition, and anemia, while least about malaria (32.4%). There have been extremes of observation in different studies with regard to the knowledge of AWWs. Bhasin *et al.*<sup>[6]</sup> reported that 99% of AWWs had adequate knowledge about the significance of the growth charts that indicate different grades of nutritional status, 90–91% had correct knowledge about weight of a child at 1 and 3 years, and 17–30% knew the correct mid-upper arm circumference for an optimally nourished child aged 2 and 4 years. Chattopadhyay<sup>[7]</sup> found that only 11.8% of AWWs could define fever. In a study by Kant *et al.*,<sup>[8]</sup> none of the AWWs could enumerate correctly all her job responsibilities. On the other hand, Kapil and Tandon<sup>[9]</sup>

found that knowledge, attitude, and practice of AWWs with respect to growth monitoring, supplementary nutrition, and immunization were adequate. The present study shows that AWWs who were educated secondary level and above had greater knowledge about different component of IMNCI as compared to the workers who were studied only up to primary level. Significant association was found between educational status of AWW and knowledge scores ( $P < 0.001$ ) in the study by Sondankar *et al.*<sup>[10]</sup> and in the study by Ghoghra *et al.*<sup>[11]</sup>

Although knowledge regarding various components of IMNCI was found average in majority of AWWs, still the practice regarding clinical examination, treatment, and referral services was nicely followed by workers as per IMNCI guideline. This is also highly associated with the workers educated secondary level and above that as compared to primary level.

Although all the workers were trained, it was found that performance as well as awareness among AWWs regarding various components of IMNCI were not that much satisfactory, which indicates regular quality training as well as on spot training program are strongly needed.

## CONCLUSION

AWWs play a role of bridge between the community and the Government Health Sector and bringing the health-care services to the doorstep of the beneficiaries. From the present study, it can be concluded that awareness and practice of AWWs related to the various services under IMNCI were inadequate, and it is also statistically associated with the educational qualification of the workers. Although education norms for selection of AWW are minimum 8<sup>th</sup> standard pass, in the present study, around 1/5<sup>th</sup> (19.8%) of AWWs had primary education. Educational status plays a key role for the knowledge and performance of the workers. Thus, it is recommended that the level of education should be given a prime importance during the recruitment of AWW, and it is also suggested that continuous education in the form of refresher training should be on regular basis for updating their knowledge.

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