A Study on Appraisal of Knowledge, Attitude and Practices of Trained AWWs regarding Malnutrition under IMNCI

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Abstract

Context: Malnutrition is the biggest health problem of children in developing countries. Approximately 60 million children are underweight in India and child malnutrition is responsible for 22% of the country’s burden of disease.

Aims: (i) To study the knowledge and attitude of anganwadi workers (AWWs) after IMNCI training regarding malnutrition. (ii) To assess the skills acquired by AWWs after IMNCI training regarding malnutrition.

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, who had received basic IMNCI training. Out of a total 833 AWWs, 774 were interviewed.

Statistical Analysis Used: Descriptive statistics and Chi-square test.

Results: The analysis shows that majority of AWWs were educated up to secondary level (49.49%). Nearly 20% of AWWs were educated up to primary level, which could be a barrier to any program implementation. 80.6% of the respondents correctly identified the grade-4 malnutrition from growth chart, while nearly 20% of the respondents were able to identify low-grade, i.e., first to third degree malnutrition.

Conclusions: Educational status plays a great role for the success of any program as it affects the understanding and grasping level of AWWs about their skillful management of malnutrition. Efficient and keen work in the field requires not only proper training but also assessment of their skills at all levels. Re-training at timely interval can play a lead role to improve their skills.

Keywords: Anganwadi worker, IMNCI, Malnutrition

Introduction

Malnutrition is the biggest health problem among children in developing countries. Approximately 60 million children are underweight in India and child malnutrition is responsible for 22% of the country’s burden of diseases.1 Malnourished children are less likely to perform well in school and more likely to grow into malnourished adults at greater risk of disease and early death. India reports that 50% of all child deaths are due to malnutrition.2 Despite global efforts for improving MCH and specific efforts like ICDS scheme, malnutrition among children remains a significant problem in India.

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Aims and Objectives

- To study the knowledge and attitude of anganwadi workers regarding malnutrition, who had undergone IMNCI training.
- To assess the skill learnt by trained anganwadi workers regarding managing malnutrition.
- To establish relationship between educational status of anganwadi workers and their knowledge, attitude and practice in managing malnutrition in children.

Materials and Methods

The present study was a cross-sectional study conducted from August 2012 to January 2013. After enlisting all talukas of Surendranagar district, five talukas (Sayla, Limbdi, Dhranghadhra, Muli and Wadhwan) were selected through simple random sampling for the study. The information was gathered by using pre-tested semi structured proforma from all AWWs of five talukas who have received basic IMNCI training.

Out of a total of 883 AWWs, 774 were interviewed at monthly taluka meeting and remaining 59 were either absent during this meeting or submitted incomplete details. Data analysis was done by using statistical software SPSS 20.

Results

Table 1 shows that most of the anganwadi workers were in the age group between 20 and 40 years. Mean age of anganwadi workers who participated in the study was 40.94±9.03 years.

Table 1.Age-Wise Distribution of Anganwadi Workers

| Age Group | No. of Trained AWWs | Percentage |
|-----------|--------------------|------------|
| 20–40     | 383                | 49.48      |
| 41–50     | 268                | 34.63      |
| 51–60     | 123                | 15.89      |
| Total     | 774                | 100        |

Figure 1 indicates that majority of anganwadi workers were educated up to secondary level (49.49%). Nearly 20% of the workers were educated only up to primary level; this group will have a low understanding and grasping during the training, which could end up as a barrier to program implementation.

Regarding the assessment of knowledge of anganwadi workers in relation to examination of malnourished child (Table 2), 43.8% of the respondents could be able to correctly mention all the tasks needed for assessment. While about one third of the respondents, i.e., 32.5% believed that use of growth chart is sufficient, very few of them knew that examination of pedal edema (7.4%) and direct examination of a malnourished child (16.3%) is sufficient to diagnose malnutrition in a child. When anganwadi workers’ knowledge was assessed for identification of stages of malnutrition, majority (80.6%) of the respondents correctly identified grade-4 malnutrition from the growth chart, while only 20% of the respondents could be able to identify grade 1, 2 and 3 malnutrition.

It was found that only 26% of the respondents could correctly identify all the steps needed for correct treatment.
in severe malnutrition. While from rest of others, 3% believed that vitamin A supplementation alone, 1.8% believed that advising mother about breast feeding, 4% believed to give an advice to mother to keep the baby warm and 65.2% AWWs suggested that urgent referral to hospital was sufficient as a treatment.

Table 2. Knowledge of AWWs regarding Malnutrition in 2 Months to 5 Years Old Children

| Knowledge about | Frequency | Percentage |
|-----------------|-----------|------------|
| Measuring mid-arm circumference | 126 | 16.3 |
| Examination for pedal edema | 57 | 7.4 |
| Decide degree of malnutrition from growth chart | 252 | 32.5 |
| All of the above | 339 | 43.8 |
| Total | 774 | 100 |

From the growth chart when child marking of weight for age is below the fourth curve it’s an indicator of:

| Grade of Malnutrition | Frequency | Percentage |
|-----------------------|-----------|------------|
| Grade-1 malnutrition | 68 | 8.8 |
| Grade-2 malnutrition | 20 | 2.6 |
| Grade-3 malnutrition | 62 | 8 |
| Grade-4 malnutrition | 624 | 80.6 |
| Total | 774 | 100 |

What advice do you give to a child’s mother with severe malnutrition?

| Advice | Frequency | Percentage |
|--------|-----------|------------|
| Vitamin A supplementation | 23 | 3 |
| Breast feeding | 14 | 1.8 |
| Keep baby warm | 31 | 4 |
| Urgent referral to hospital | 504 | 65.2 |
| All of the above | 202 | 26 |
| Total | 774 | 100 |

On follow up, what advice will you give to the mother in children weighing less than expected weight for age?

| Advice | Frequency | Percentage |
|--------|-----------|------------|
| Advice to mother about feeding problem | 122 | 15.8 |
| Follow up after 14 days | 61 | 7.9 |
| If feeding problem not solved, then referral to hospital and follow-up examination | 190 | 24.5 |
| All of the above | 401 | 51.8 |
| Total | 774 | 100 |

When their attitude was judged regarding follow up of malnourished child whose weight was less than expected age, it was found that about half of the respondents (51.8%) could be able to give advice correctly. 15.8% AWWs believed that advice to mothers about feeding problems would be sufficient, while only 7.9% respondents believed in follow-up after 14 days.

Association was shown between educational status of anganwadi workers and their knowledge regarding clinical features of malnutrition (Table 3). It is clearly seen that as the educational status of the AWWs increased, their level of knowledge also increased and the difference was also statistically significant ($\chi^2=189.43$ and $p=0.0001$).

Table 3. Association between Educational Status of Anganwadi Workers and Knowledge of Clinical Features of Malnutrition

| Educational Status   | On Examination Child Seems to be Malnourished | Examination for Pedal Edema | To Decide the Degree of Malnutrition from Growth Chart | All of the above | Total |
|----------------------|---------------------------------------------|-----------------------------|------------------------------------------------------|-----------------|-------|
| Primary              | 20                                          | 12                          | 39                                                   | 82              | 153   |
| Secondary            | 87                                          | 45                          | 164                                                  | 87              | 383   |
| Higher secondary     | 16                                          | 0                           | 44                                                   | 78              | 138   |
| Graduation           | 03                                          | 0                           | 05                                                   | 92              | 100   |
| Total                | 126                                         | 57                          | 252                                                  | 339             | 774   |

When their attitude was assessed regarding the follow up of malnourished child whose weight was less than expected age (Table 4), it was found that it clearly matched with their knowledge of the same.
When the association between the educational status of the AWWs and their attitude of referral in case of malnutrition in children aged 2 months to 5 years was assessed (Table 5), it was found that more than half (51.80%) of the respondents were following the standard protocol for reference. And the difference was statistically significant ($c^2=36.49$ and $p=0.00003$).

When they were asked for revised training for IMNCI (Table 6), more than three-fourths, i.e., 78% of the trained AWWs gave a positive response.

### Table 4. Attitude of Anganwadi Workers about Referral in Case of Malnutrition in 2 Months to 5 Years Old Child on Follow Up Examination

| Advice to mother about feeding problem | Frequency | Percent |
|---------------------------------------|-----------|--------|
| Follow up after 14 days and weighing of child | 61 | 7.9 |
| If feeding problem continues, than referral to hospital and follow up examination | 190 | 24.5 |
| All of the above | 401 | 51.8 |
| Total | 774 | 100 |

### Table 5. Association between Educational Status of Anganwadi Workers and Attitude of Referral in Case of Malnutrition in Children Aged 2 Months to 5 Years

| Educational Status | Advice to Mothers about Feeding Problem | Follow Up after 14 Days | If Feeding Problem is Not Solved then Referral to Hospital & Follow Up Examination | All of the above | Total |
|--------------------|----------------------------------------|------------------------|--------------------------------------------------------------------------------|----------------|-------|
| Primary            | 21                                     | 13                     | 17                                                                              | 102            | 153   |
| Secondary          | 62                                     | 35                     | 105                                                                             | 181            | 383   |
| Higher secondary   | 22                                     | 13                     | 44                                                                              | 59             | 138   |
| Graduation         | 17                                     | 0                      | 24                                                                              | 59             | 100   |
| Total              | 122                                    | 61                     | 190                                                                             | 401            | 774   |

### Table 6. Number of Anganwadi Workers Who Were in Need of Refresher Course of IMNCI

| Do you want to have a refresher training of IMNCI course? | Frequency | Percent |
|----------------------------------------------------------|-----------|---------|
| Yes                                                      | 605       | 78      |
| No                                                       | 169       | 22      |
| Total                                                    | 774       | 100     |

### Discussion

Assessment of anganwadi workers regarding the knowledge in relation to examination of malnourished children shows that around 44% of the respondents were able to correctly mention the entire task needed for assessment. While 32.5% believed that plotting on growth chart was sufficient, minority of them believed presence of pedal edema (7.4%) and direct examination of a malnourished child is sufficient (16.3%) to diagnose malnutrition in a child. Statistically significant association was found between educational status and knowledge of anganwadi workers about clinical features of malnutrition.

The study done by Chaudhary et al. shows that only 63.5% of anganwadi workers trained in IMNCI could be able to check correctly for under-nutrition, which is consistent with our findings. The above findings are also consistent with a study in Madagascar evaluative supervision of IMNCI in Madagascar, which shows that 71% of health workers correctly checked for nutrition status in the supervisory visits.

When knowledge was assessed regarding the identification of malnutrition grade-4 from growth chart, 80.6% of the respondents correctly identified the grade of malnutrition, while remaining 20% respondents could not. The findings in our study are consistent with a study done by Kapil et al.

The study done by Amaral et al. in Brazil shows that health workers assessment task for weight checked against growth chart is 77.5% which is nearly similar to our findings. The findings of a study report by Kelley and Black show that IMNCI-trained health workers checked children's weight against growth chart 82% of the times correctly than the non-IMNCI-trained workers. Chattopadhyay in his study “Knowledge and skills of anganwadi workers in Hoogly District, West Bengal” shows that 60.9% of anganwadi...
workers have average skills regarding growth monitoring.

When anganwadi workers were assessed regarding their practice for treatment in severe malnutrition, it was found that only 26% respondents correctly identified all the steps needed for correct treatment and 3% believed that vitamin A supplementation alone was sufficient for treatment. Only 1.8% believed that advising mother about breast feeding was sufficient, and 4% believed in advising mother to keep baby warm and 65.2% believed that urgent referral to hospital was necessary. Similar findings are observed by Kelley and Black\(^7\) in their study report, which shows that sensitivity of anganwadi workers to PEM (protein energy malnutrition), was 30% and specificity 29%.

When their attitude was assessed regarding the follow up of malnourished child weighing less than expected age, it was found that almost half of the respondents were able to give correct advice. The findings in our study are almost similar to a study conducted by Beracochea et al.,\(^9\) which shows that only 42% of health workers correctly referred severely malnourished child to the health center.

**Conclusion and Recommendation**

The present study shows that the skills regarding case management, observation, skill, assessment and classification regarding malnutrition were correct during the study. However, the decision about correct treatment was poor because of long gap between training and implementation and delay of logistic supply. The study indicates that to sustain the skill of anganwadi workers in the field, required follow-up visits should be at suitable time interval after training, and the interval between training and follow up visit should not be too long.

Educational status plays a great role for the success of any program as it affects the understanding and grasping level of anganwadi workers about their skillful management of malnutrition. For efficient and keen work in the field, they require not only proper training but also assessment of their skills at all levels. Re-training at timely interval can play a lead role in case of improvement of skills of anganwadi workers. Various modes of training for better understating regarding skills and management of malnutrition in their own words can be helpful.

**Conflict of Interest:** None

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