

A STUDY TO ASSESS THE IMPLEMENTATION AND EFFECTIVENESS OF IMNCI PROGRAM AND EVALUATION OF SKILLS OF RURAL ANGANWADI WORKERS IN VADODARA TALUKA

Bharani Sheela¹, Parmar Tarun², Kantharia Neha³, Parmar Rahul⁴, Kharod Nikhil⁵

¹Assistant Professor, ²Resident, Department of Pediatrics, Baroda Medical College and SSG Hospital, Vadodara ³PhD Scholar, Department of Foods and Nutrition, M. S. University of Baroda, Vadodara ⁴Assistant Professor, Department of Preventive and Social Medicine, Baroda Medical College and SSG Hospital, Vadodara ⁵Professor, Department of Pediatrics, Pramukhswami Medical College, Karamsad

ABSTRACT

Background: IMNCI is an integrated approach to decrease morbidity and mortality amongst children between 0-5 years. Training to pre-service level during medical, nursing-education and anganwadi worker (AWW) is the first fundamental stage of IMNCI.

Objectives: To evaluate the skills of AWWs trained under the IMNCI program and to identify the problems in implementation of IMNCI program in rural areas.

Methods: A cross sectional study including 50 AWWs of Vadodara taluka, selected by random sampling technique.

Results: Most of the AWWs were ≤40 years of age. Out of 50 AWWs, 18 (36%) underwent IMNCI training between 1-2 years duration and 32 (64%) underwent training between 2-5 years period from the date of interview. Around 72% AWWs undertook 3 visits of young infants. All AWWs were equipped with weighing scales but were not having supplies like, ORS (70%), Cotrimoxazole (94%) and IFA (56%). Out of 46 (96%) who had maintained the register, only 9 (18%) had completed them. Lack of motivation and supervision with overburden due to other programs and inadequate stocks of drugs were major difficulties found in this program. Convulsions, lack of active body movements and nasal flare in young infants were the signs missed by 36%, 22% and 20% AWWs respectively. About 50% AWWs had knowledge about Kangaroo mother care. Breast-feeding problems were identified by 54% AWWs. Only 8% AWWs had checked immunization cards.

Conclusion: The study identified a number of programme-related and external constraints that, if taken care of, might improve implementation and effectiveness of IMNCI program.

Keywords: IMNCI program, AWWs, skills, problems in implementation

INTRODUCTION

Every year, more than 10 million children less than 5 years of age, die in developing countries¹. Most of these deaths are preventable and are mainly due to infective etiologies like diarrhea, respiratory tract infections, measles, malaria, AIDS, tuberculosis etc². Apart from malnutrition, the other factors contributing to illnesses in this age group are poor living conditions, unsafe drinking water, poor hygiene and overcrowding. There are two most important reasons for such high mortality that is

seen in this age group - (1) Inability of the parents to identify danger signs and symptoms especially in young infant at an early stage and not seeking treatment and (2) Poor quality of health services in rural areas.

It was noted that in spite of implementation of IMCI program that was developed by UNICEF and WHO based on the rationale that reduction in childhood mortality rate can be achieved without using expensive and sophisticated technologies, it was found that only neonatal mortality was responsible for more than 2/3rd of

the Infant mortality rate (IMR) in India³. So, to decrease Neonatal mortality rate (NMR) which is a major problem in India the strategy was strengthened with "N" (neonatal) component and now it was known as IMNCI (Integrated Management of Neonatal and Childhood Illnesses). IMNCI is evidence based syndromic approach for management of 0-2 months & 2 months - 5 years age group children^{4,5,6,7,8}.

In India, Ministry of Health and Family Welfare approved the implementation of IMNCI and by 2009 IMNCI was implemented in 18 out of 25 districts of Gujarat state. The present study was thus undertaken to evaluate the skills of Anganwadi workers trained under the IMNCI program and to identify the problems in implementation and effectiveness of IMNCI program in rural areas.

MATERIALS AND METHODS

Vadodara taluka was selected for the study as it is adjacent to the Civil Hospital which is the 1st designated tertiary care unit for pediatric emergencies in the IMNCI program. The study was a cross sectional study carried out at the anganwadi centres of Vadodara taluka from 1st January 2009 to 31st December 2009. There are a total of 245 AWWs in Vadodara taluka, out of whom 231 got trained in IMNCI till 2009 and the total duration of the training was 8 days for each worker. The study was a pilot to understand the positives and negatives of the IMNCI program and training giving to AWWs, thus 50 AWWs (20%) were selected by simple random sampling technique.

The two components taken into consideration for evaluation of implementation and effectiveness of the program included:

1. Logistics: Maintaining of registers and equipment, problems faced by AWWs, drug supply, referral notes, etc.
2. Skills practiced: Two different age groups as defined in IMNCI were included i.e. (0 to 2 months) and (2 months to 5 years) and skills of the AWWs were observed.

All 50 centres were visited after giving prior notice to each AWW. Interview was taken in the local language (Gujarati) using a semi structured questionnaire to get an understanding about the logistic component and the standard IMNCI proforma was used to scrutinize the skill based performance of the selected AWWs.

The success of IMNCI program is based on the skills of AWWs. Skills practiced by the AWWs were thus evaluated as per the IMNCI training module. For each major group like serious bacterial infection, diarrhea, feeding problem skills of the AWWs were observed and scores were given with grading of the performance as very poor, poor, satisfactory and good based on the performance score. A scoring system was used to identify whether the AWW's had acquired the necessary skills and whether they were using them in the correct manner, so as to evaluate the effectiveness of training given under the IMNCI program. With correct identification and interpretation of the signs or symptoms of illness a score of 2 was given, while with every identification without interpretation of the sign a score of 1 was given and with no identification of the sign a score of 0 was given. All the data was compiled and analyzed using Epi Info statistical package and data analysis add-ons of Microsoft excel.

RESULTS

More than half (62%) of the AWWs studied were aged ≤ 40 years and 38% were above 40 years. Of the 50 AWWs, 18 (36%) underwent IMNCI training between 1 to 2 years duration and 32 (64%) underwent training between 2 to 5 years period from the date of interview. The results of skill based performance in young infants and 2 months to 5 years children were found similar in both age groups (≤ 40 years and > 40 years) with statistically insignificant p value. Out of 24 AWWs, who were trained within preceding 2 years, 4 AWWs had a score of $< 50\%$ in both the groups; while out of 26 AWWs who were trained between preceding 2 to 5 years, 10 and 12 AWWs had scores of $< 50\%$, respectively.

Logistics

Even though 92% of the AWW's had all the required registers, only 18% had registers with complete records. Around 73% and 85% of the newborns were visited by AWWs in both Ghatak 1 and 2 respectively. Around 14% AWWs had undertaken less than 3 visits of the young infants. There were inadequate supplies of chloroquine (94%), Co-trimoxazole (66%), Oral rehydration solution (ORS) (70%), Iron and Folic acid (IFA) (56%), 1% Gentian violet lotion (GV) (38%) and Paracetamol (PCM) (22%) in anganwadi centers (AWC). All the AWWs were equipped with weighing scale and all were in

working condition, but only 66% used it to monitor weight of the young infants. Chart books were available with 44 AWWs.

Out of 50 young infants who were referred to higher centers, only 10 went to private hospitals and 36 went to different Government hospitals; 4 did not go to any hospital of which 3 expired at home without treatment. Of the 46 referred young infants who were taken to hospitals, 39 were given discharge, 6 expired in hospitals and 1 took discharged against medical advice and died at home. Those babies who died in hospitals, death occurred in hospitals in 24 hours after referral. About 58% used rickshaw as a mode of transportation. Only 2 AWWs had given required pre-referral treatment as per IMNCI chart book. There were only 26% referred babies who were accompanied by paramedical health worker or Accredited Social Health Activist (ASHA) and 60% were not given referral note. Common reasons for referral were low birth weight (LBW) (30%), fever and cough (20%), respiratory distress (8%) and diarrhea (4%).

There were 132 children in 2 months to 5 years age group who were referred. Of these, 18 were referred to private hospitals and 114 referred to government hospitals. Of these, 120 reached the referral centers and 12 did not. There were 2 deaths amongst 120 referred cases, while 1 death occurred out of 12 cases not referred. The common reasons for referral were cough, protein energy malnutrition, diarrhea, skin lesions, fever, respiratory distress etc. There

were total 7 deaths in this age group of which 4 did not access any health facilities and died at home without treatment. 1 child died at home as referral was refused, while 2 expired at referral places.

Evaluation of Skills

Serious Bacterial Infection (SBI)

AWWs look for signs and symptoms of SBI as per the chart book. A total score of 20 was given for correct identification and interpretation of signs. None of the AWWs had very poor performance. Out of 50, 46 had satisfactory and good performance with scores of more than 10 out of 20 (Table 1).

Table 1: Performance of the AWWs in use of signs to identify serious bacterial infection (n=50 & max. marks=20)

Performance	Marks	No. AWWs
Very Poor	<5	0
Poor	6-10	4
Satisfaction	11-15	11
Good	16-20	35
Total		50

Amongst the signs and symptoms of SBI, convulsions (36%), poor body movements (22%), nasal flaring (20%) were missed by AWWs. Amongst 66%, the AWWs had given proper advice to the mother about prevention of hypothermia in the newborns while only 50% AWWs had knowledge about Kangaroo Mother Care (KMC).

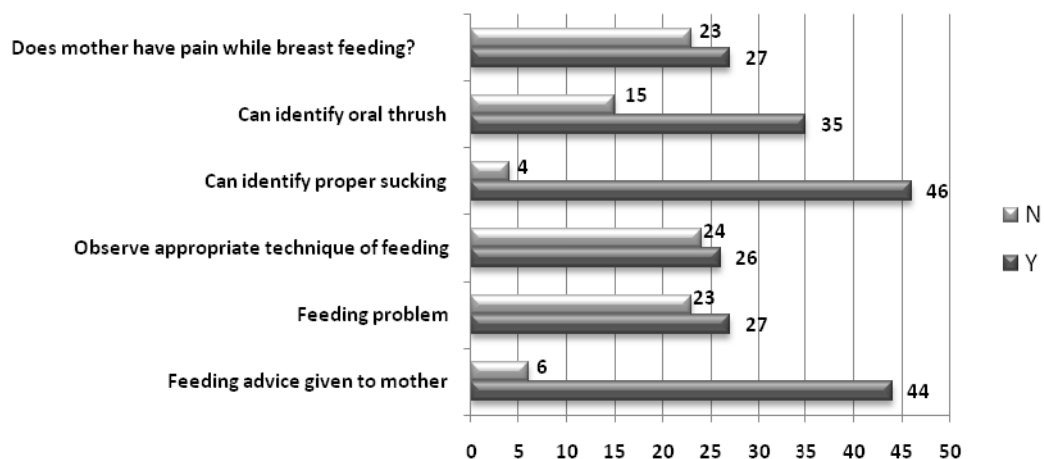


Figure 1: Evaluation of breast feeding technique by the AWWs (n=50)

Feeding in young infants

As shown in the Figure 1, among 50 AWWs, 88% gave appropriate advice for exclusive

breast feeding to the mothers and 54% could identify feeding problems encountered by

mothers. However, only 52% AWWs had observed the technique of breast feeding

Immunization

Most of the AWWs (96%), checked for immunization status. But among them only 8% checked through the immunization card and rest (88%) elicited information verbally. 76% were able to give proper advice to the mother about immunization.

Danger signs

There were 22% AWWs who were able to explain the danger signs properly to the mother. However, only 6% AWWs had checked the understanding of mother.

In the age group of 2 months to 5 years children, 12 AWWs performed poorly or very poorly in asking general danger signs. Convulsion was the sign that was missed by 34% AWWs.

There were only 4 children with respiratory infection, 3 with diarrhea and 7 with fever,

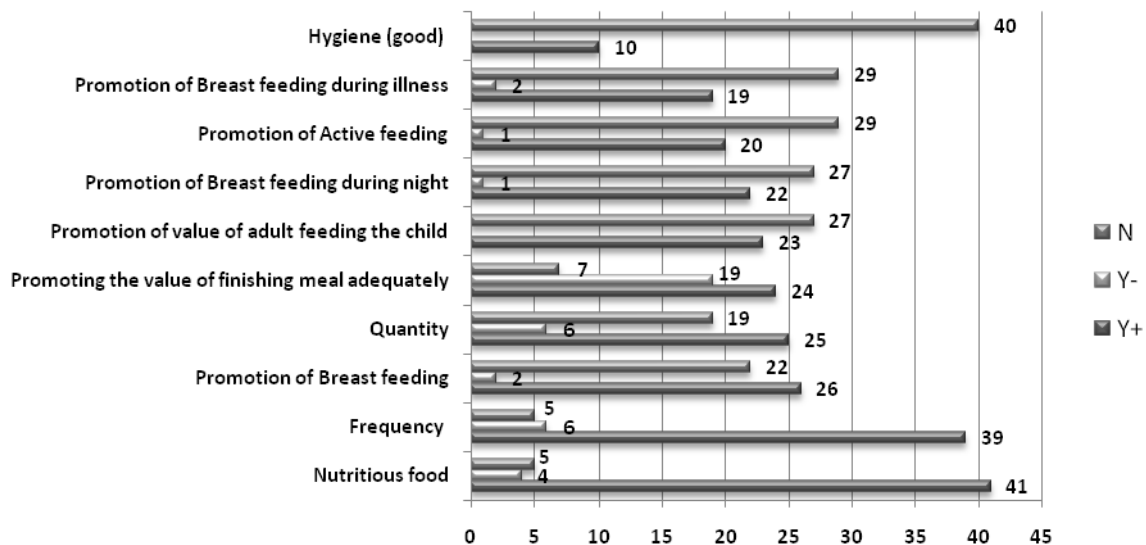
which were observed for the skills of AWWs. The sample size is too small to comment on the performance.

Nutritional status

All the 50 AWWs had looked for signs of undernutrition. 88% AWWs could identify undernutrition grades, while 12% had difficulty in grading nutrition status properly. Among 50 AWWs, 44% had given proper advice regarding administration of iron and folic acid tablets or syrup.

Feeding in older children

Figure 2 shows the feeding practices asked and checked by AWWs. About 80% AWWs had not given any importance to hand washing. Similarly, feeding during illness, active feeding, breast feeding in night hours and the importance of adult feeding the child were common errors of AWWs which were identified.



* Y+ = Looked for the sign and interpreted correctly
 Y- = Looked for the sign but could not interpret it correctly
 N = Did not look for the sign

Figure 2: Assessment of skills to check for Feeding Practices (n=50)

DISCUSSION

IMNCI is relatively a new program and for any new program the success and results are dependent on its effective implementation. The success of the program is again based on skills of the frontline workers. The age of the frontline workers and training intervals are important

factors in grasping and effective use of skills in the community.

It was expected that the age of AWW and duration of their training would be important aspects for better implementation of the program. But statistical analysis shows that p value is not significant. (p>0.05)

AWWs had many other registers to maintain apart from IMNCI program registers. So if at all they had started filling the data in the registers, it was left incomplete, thus leading to unavailability of reliable data which is necessary to evaluate the success of any program.

Because of some social customs like first delivery at mother's place and restrictions on mother and child after delivery which made meeting any outsider including health worker difficult, postnatal visits of newborns were difficult for AWWs. Because of institutional deliveries and cultural norms it may not be possible to visit the newborns on day 1. Thus, even though, 79% of the newborns were visited by AWWs and 72% had 3 visits, visit in first few days was missed by most of the AWWs. As most of the neonatal deaths are early neonatal deaths this miss may be very crucial.

According to a study on child health⁷ in districts where IMNCI is implemented, out of reported birth only 63% newborns were visited on the first day by AWWs and 61% newborns had 3 visits during first 10 days of life.

For the success of IMNCI program, availability of drugs is very essential and an important component without which we may not achieve our goals. As observed in this study, most of the essential drugs were not available. This may lead to loss of confidence in services provided by AWWs at community level. Even though AWWs classified illnesses correctly, she could not give the medicine because of unavailability. If one wants to strengthen the IMNCI program, availability of drugs is the main corner stone to achieve good results.

According to the IMNCI guidelines, supervisory visits should occur at regular intervals to improve the program quality. However, no supervisory visits had taken place in the study area.

Most of the AWWs did not take care of pre-referral treatment while referring sick young infant to a health centre. This is an important aspect of treatment which has to be started at the AW centre, to facilitate child survival and reduce complications & hospital stay. A single dose of treatment before referral changes the outcome in terms of mortality in young infants. Unavailability of the drugs is an important issue which affects the pre-referral treatment.

Avoiding medical advice at proper time resulted in poor outcome. So there is an urgent need to

promote early and timely referral of a sick infant.

Most common signs that were missed by AWW while assessing a young infant were convulsion, poor activity and nasal flaring.

Identification of feeding problems and to observing the feeding technique were other weak aspects in the AWWs performance and need further strengthening because feeding, malnutrition and morbidities are interrelated.

Another aspect that should be emphasized is checking the immunization card to get correct information regarding immunization especially when coverage is only 45 to 50% in most of the state.

Hand washing, active feeding and feeding during illness also need further reinforcement in refresher trainings.

AWWs also did not do well in identifying sick child of 2 months to 5 years age group. Only 8% AWWs had scored >40% in identifying different skills in age group of 2 months to 5 years.

Thus, the study could identify weak links in IMNCI implementation which need to be addressed. There is a need to teach the AWWs, correct way of identification and classification e.g. convulsion can be shown by video or visual demonstration.

CONCLUSION

Based on short term observations a number of program related and skill related deficiencies were observed. There is a lot of scope to improve IMNCI implementation and strengthen it further.

ACKNOWLEDGEMENTS

We are grateful to all the AWWs for their cooperation and support during the study.

REFERENCES

1. Darnal S, Humphreys C, Jha R, Joseph P, Meier J. The Changing Role of Anganwadi Workers: A Case Study on IMNCI in Valsad District, Gujarat. Youth speak: Case Studies of Development in Practice. p 51.
2. The State of Asia-Pacific's Children 2008. Available at: http://www.unicef.org/sapc08/docs/SAPC_Full_Report.pdf. Accessed on September 8, 2011

3. Millennium Developmental Goals - India Country Report 2011-Mid Term Statistical Appraisal, Ministry of Statistics and Programme Implementation (MoSPI). Available at: http://mospi.nic.in/Mospi_New/upload/MDG_2010_01jan12.pdf. Accessed on March 31, 2012.
4. WHO Department of Child and Adolescent Health and Development (CAH), Ministry of Health and Family Welfare. Student's handbook for Integrated management of neonatal and childhood illness. 2003. Available at: http://www.whoindia.org/LinkFiles/Child_&_Adolescent_Health_IMNCI_Student_Manual__June_03__%282%29.pdf. Accessed on July24, 2011.
5. IMNCI (Integrated Management of Neonatal and Childhood Illness) pg.48. Integrated Management of Childhood Illnesses, (IMCI). Available at: <http://www.who.int/child.adolescent-Health/integr.htm>. March 13, 2004.
6. Integrated Management of Neonatal and Childhood Illness. Training Modules for Physicians. Ministry of Health and Family Welfare, Govt. of India, 2003.
7. Ingle G K, Malhotra C. Integrated management of neonatal and childhood illness: An overview: Indian Journal of Community Medicine Vol. 32, No. 2 2007; Page: 108-110.
8. Integrated Management of Childhood Illness, Indian Pediatrics 2006; 43:1029-1031, Available at: www.indianpediatrics.net/1aug99.htm. Accessed on: November 30, 2011.

Correspondence:

Neha Kantharia
804/Tower-3, Natraj Enclave,
Near Jalaram Temple,
Karelibaug, Vadodara.
Email: nehakantharia@yahoo.co.in