Anganwadi workers as Oral Health Guides: An interventional study

Pradnya Kakodkar, Chandan Kumar Matsuypal1, Nikita Ratnani1, Rohit Agrawal1

Abstract

Aim: This study was designed to evaluate if the Anganwadi worker can function as effective oral health guide subsequent to their oral health training.

Material and Methods: A total of 50 Anganwadi workers were equally divided into study and control group. At the start, baseline information was obtained with the use of a questionnaire. An information booklet was prepared, including different dental topics. Intervention to the study group was provided in the form of training using the booklet and the oral health and disease color plate. For the control group no training was provided.

Results: After, 1 month the questionnaire was administered again to both the groups. An overall, of 42.58% increase in the mean percentage of participants giving correct answers after the intervention was recorded. The results indicate an increase in dental knowledge among the study group while no change in the control group. The difference in the knowledge post‑intervention between the study and the control group was found to be statistically significant (for the “correct answers” \( t = 5.95, P = 0.0001 \); for “wrong answers” \( t = 3.23, P = 0.0002 \) and for “did not answer” \( t = 4.6205, P = 0.0001 \)).

Conclusion: Within the limits of this study, it can be concluded that training the Anganwadi workers can empower them to become oral health guide. This project can be considered as a pilot study based on which a bigger task of training the entire cohort of Anganwadi workers can be planned.

Key words: Anganwadi, children, dental training, oral health, oral health guide

Introduction

In India, there is an inequitable distribution of qualified dental practitioners. Seventy percent of the Indian population resides in rural area, for whom only 30% dental facilities are available. The oral disease burden is high in the rural areas. The Integrated Child Development Scheme (ICDS), initiated nearly 33 years ago, in October 1975, has become the largest child development program. The Anganwadi worker and helper, are the basic functionaries of the ICDS. They are not government employees but are called “social workers” or “voluntary workers.” The key functions of Anganwadi is to provide supplementary nutrition to the children below 6 years of age and to nursing and pregnant mothers from low income families; immunization of all children <6 years of age and immunization against tetanus for all the expectant mothers, provide nutrition and health education to all women in the age group of 18–45 years, as well as basic health check-up, which includes antenatal care of expectant mothers, postnatal care of nursing mothers, care of newborn babies and care of all children under 6 years of age. In the general health aspects, the Anganwadi workers have knowledge about immunization, prophylaxis against blindness, nutrition and health care, supplementary nutrition, growth monitoring, and referral services. [1]

Studies in the literature have shown that, training the Anganwadi workers in oral health has resulted in improvement in the knowledge of the community whom they catered.[2‑6] Educating the Anganwadi worker will produce a ripple effect of knowledge among the mothers in the community and teaching a mother is like teaching the entire family. [7] A study has indicated that the Anganwadi worker has been used as a key informant to identify blind children.[8] Probably if additional training in oral health care is provided to the Anganwadi workers, there is a high chance that they can efficiently function as oral health guides. Oral health guide is a person who is able to identify the oral health and disease condition and provide the information about the oral health prevention.

Hence, this study was designed to evaluate if the Anganwadi worker can function as effective oral health guide subsequent to their oral health training.

Material and Methods

The interventional study was conducted in Durg, Chhattisgarh during the period of July-August 2014. For convenience purpose, two clusters of Anganwadi workers were selected. Each cluster consisted of 25 Anganwadi workers who belonged to one
division. Once every month, a meeting is conducted where all the division workers gather. For the study purpose, two such meeting centers were selected. Titrudih, Durg Anganwadi center was the study site and the control site was Katulboard, Durg Anganwadi center. The study proposal was approved by the Institutional Ethics committee. Written informed consent was obtained from the participants. Participation information form was circulated among the participant for their reference and to know the intent of the study.

Study design and data collection

First phase (preintervention phase)

The baseline oral health knowledge, awareness and ability to identify oral health and disease condition were assessed using a pretested, open-ended, 17-item questionnaire [Figure 1] for both the study and the control groups.

Second phase (intervention phase)

Part 1 - Preparation of information booklet

The questionnaires were assessed. The deficiency in their knowledge was noted, and this information was used while preparation of the information booklet. The contents of the booklet were: Normal oral cavity anatomy; functions of teeth; dentition and their significance; teething; dietary habits and their effects on oral hygiene; etiology and prevention of dental caries; injurious oral habits; influence of oral health on general health; common dental/gum disorders; bottle feeding and its effect on nursing bottle caries; oral habits among children; information on oral health care and hygiene practices; importance of a regular dental visit and identifying

oral health and disease conditions. All the information was collected and compiled to develop an information booklet, which was first prepared in English and then translated in the Hindi language. A person proficient in both English and Hindi language, proofread the entire content and then the final draft was prepared. The language was kept simple in the booklet and hence that it was easily understood. It was a 20 page booklet in Hindi language with two color plates, which had pictures of the health and disease conditions in the oral cavity.

Part 2 - Training Module for the Anganwadi workers

Study group: Here, the Anganwadi workers were provided training using the booklet and also were given practical training for identification of oral health and disease condition. For practice, peer oral examination was recommended. It took around 3 h to complete the training and practical exercise. This was done in the afternoon period after their meeting (1:30-4:30 pm).

Control group: Here, the Anganwadi workers were not provided with any kind of training but generally an oral health education talk of 15 min was given.

Third phase (postintervention phase or evaluation phase)

After 1 month, the study group and the control group filled the prestudy questionnaire again.

Statistical analysis

The data obtained were analyzed using SPSS version 16. (SPSS Inc., Chicago, Illinois, USA). Frequency and percentages were calculated. t-test was applied to compare the differences between the study and control group. The level of significance was fixed at 5%.

Results

A total of 50 Anganwadi workers in the age range of 25-55 years old (mean age of 38.5 years) participated in the study. Twenty-five belonged to study group and the other 25 belonged to the control group. All the 50 participants filled the prestudy questionnaire.

Prestudy results

According to the responses of the entire sample, the results are depicted in the ascending order of the percentage of participants answering correctly [Graph 1]. Certain questions related to number of teeth among children (Q2), symptoms of dental caries, types of dentition (Q3), dental problem associated with prolonged bottle feeding (Q5), when should one go for routine dental visit (Q11), problems encountered with children with crooked teeth (Q7), different problems of the cheeks (Q17), pregnancy-related changes in the mouth (Q13), kinds of food causing caries (Q9) and bad habits in children (Q8) were answered correctly by <50% participants.

The mean (standard deviation) number of participants giving correct answers in study and control group were 12.23 (7.1)
and 13.76 (7.07), respectively. The two groups were similar at the baseline.

Graph 2 indicates comparison of correct answer responses of the study and the control group.

Poststudy results: In the study group, an overall, of 42.58% increase in the mean percentage of participants giving correct answers after the intervention was recorded. The mean percentage of participants giving wrong answers had reduced from 32.66% to 4.66% respectively and also those opting for “don’t know” response had reduced from 15.55% to 3.33%, respectively. The pre- and post-study results for correct answers are depicted in Graph 3.

In the control group, a mere 3.05% increase in the mean percentage of people giving correct answers was noted as compared to the baseline values. Majority responses were same as baseline. The mean percentage of participants giving wrong answers pre- and post-study were 19.76% and 18.82% respectively, and those opting for “don’t know” response were 25.17% and 23.05% respectively. The pre- and post-study results for correct answers are depicted in Graph 4.

Table 1 depicts comparative results between the study and control group post-intervention. Application of statistical criteria showed a significant difference between the study and the control group with regards the different responses to the questionnaire. The difference in the knowledge post-intervention between the study and the control group was found to be statistically significant (for “correct answers” $t = 5.95$, $P = 0.0001$; for “wrong answers” $t = 3.23$, $P = 0.0002$ and for “did not answer” $t = 4.6205$, $P = 0.0001$).

**Discussion**

Literature reveals that Anganwadi workers have successfully embarked on different roles like providing information about breastfeeding and complementary feeding,[9] identifying childhood disability and instituting immunization and supplementary nutrients,[10] participating in rural newborn care program,[11] identifying childhood blindness.[8] and the present study has confirmed that after appropriate training they can be empowered to become an oral health guide. An earlier study in Haryana has confirmed that Anganwadi workers can effectively educate the community about infant dental care[12] and also in Kerala they were found to conduct effective training in community oral health issues to mothers[3] Raj et al.[5] conducted a study to evaluate the impact of oral hygiene training package to Anganwadi workers on improving oral hygiene of preschool children.
and justified that the workers can be used for oral hygiene training.

In this study, at baseline, when the questionnaire eliciting the dental knowledge was administered to the Anganwadi workers, it was observed that the number of participants answering the question wrongly and leaving the question unanswered were more as compared to those answering correctly. However, post intervention the knowledge of the study group improved tremendously [Graph 3]. However, the knowledge of the control group did not change much [Graph 4].

The single training session had successfully brought about a change in the dental knowledge. After the postintervention questionnaire was administered, and while interacting with the workers, they revealed that they had not got any formal training on the dental topic and they really felt that such type of training was useful. This finding is also confirmed by the earlier studies.\(^{[8,13]}\) The workers also discovered that this training has helped them to identify the severe dental caries among the Anganwadi children and that they will inform their parents about taking the children to the dentist. We were also astonished to know that after the training one of the Anganwadi worker had identified a child with cleft palate and inquired with us about its treatment.

Few studies done on Anganwadi workers has revealed that they possess the dental knowledge to some extent on certain topics,\(^{[2,7]}\) but providing them with official dental training is required.\(^{[7]}\)

Although the results are promising, certain limitations cannot be overlooked. The results presented here, are based on a small sample size, with inputs collected over a fairly small window period of 1 month. It would be imperative to study the knowledge retention of these participants after about a year. Most of the workers are beyond 35 years of age; during this phase the time span of concentration is reduced, and the motivation and willingness to learn new topics is reduced. Hence, providing them with oral health training will need extra effort. In addition, the ground reality about Anganwadi worker cannot be neglected. They are overloaded with excessive record maintenance\(^{[6,14]}\) and are given inadequate honorarium.\(^{[6,14]}\) In such a scenario, training them to become oral health guides will be a challenging task. They need to be really motivated and provided with an incentive to create interest in undergoing the training session.

### Conclusion

Within the limits of this study, the results confirm that providing dental training to the Anganwadi worker can empower them to become an oral health guide. Therefore as an oral health guide, the Anganwadi worker can successfully perform the following functions:

- **Identify the health and disease condition of the children up to 6 years of age**
- **Educate the parents about oral health diet, reasons for different dental problems in children, oral habits, teething, dental caries process and the necessity to get the dental treatment at the earliest stage**
- **Educate the pregnant women about the oral changes during pregnancy**
- **Finally, the Anganwadi worker can provide information about oral hygiene aids and brushing technique for children up to 6 years of age.**

### Recommendation

When the Anganwadi worker is freshly recruited, they undergo an official 4 month training, in which the authorities can consider to include dental training in their curriculum. Furthermore, the dental colleges can adopt Anganwadi centers in their vicinity and the dental interns can be utilized to train the Anganwadi workers.

### Acknowledgments

This study is funded through ICMR-STS 2014.

### References

4. Prathibha B, Anjum A, Reddy P, Kumar J. Oral health awareness among...
