

## KNOWLEDGE AND PRACTICE OF ORAL HEALTH CARE AMONG ANGANWADI WORKERS IN A COMMUNITY BLOCK PANCHAYATH IN KERALA

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### **Keywords:**

*Oral health, Knowledge, Practice, Anganwadi workers.*

### **Abstract**

**Context:** In India, about 2 million Anganwadi workers (AWWs) reach out to a population of 70 million women and children. Early childhood caries (ECC) is a major health concern worldwide. AWWs have better accessibility than dental health professionals in reaching out to the rural population to combat ECC.

**Aims:** The study was designed to assess the knowledge and practice of oral healthcare among Anganwadi workers (AWWs) of a community block panchayath and to identify its determinants.

**Settings and Design:** A cross-sectional study design.

**Methods and Material:** A self-administered questionnaire was given to 145 AWWs on the day of their monthly meeting and the filled forms were collected back on the same day.

**Statistical analysis used:** Kruskal Wallis test, Spearman R correlation test.

**Results:** The mean knowledge and practice scores were found to be  $9.51 \pm 2.29$  and  $4.99 \pm 1.01$  respectively. The AWWs had moderate knowledge (53.10%) and good practice (73.8%) in oral healthcare.

**Conclusions:** The Anganwadi workers had moderate knowledge and good practice in oral healthcare, but few deficiencies were identified and recommendations given.

### **Introduction**

Dental caries is one of the most common preventable diseases, which hinders the achievement and maintenance of oral in all age groups. The global problem of dental caries still persists despite great improvements in the oral health of populations in several countries.[1] The prevalence of dental caries is declining in high-income countries, increasing in upper middle-income and is epidemic in lower middle income economies. [2]

In any population, 60–70% of all carious lesions are found in 15–25% of the children. [3] Approximately 22.7% of children aged 2–5 years had experienced dental caries and 10% of them had untreated tooth decay in primary teeth.[4] Quite often, the children do not receive dental care until they reach 3 years of age. By this time, more than 30% of the children from lower socioeconomic strata are affected by dental caries.[5] Left untreated, carious lesions can lead to expensive treatment, disruption of growth and development, pain, and life threatening infections. Early childhood caries (ECC) is a major health concern worldwide, which continues to negatively affect the oral health of infants and children which is associated with dietary practices. ECC is defined as the presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries) or filled tooth surfaces in any primary

tooth in a child 71 months of age or younger.[6] A comprehensive review by Milnes shows prevalence of ECC varying from population to population; however, disadvantaged children, regardless of race, ethnicity or culture, are most vulnerable.[7] Few of the published studies in the Indian population showed an ECC prevalence of 19-51% in the Indian population.[8,9,10]

In 1975, the Indian government started the Anganwadi system, as part of the Integrated Child Development Services program (ICDS), which is one of the largest and most exclusive programs for early childhood development. [11] An Anganwadi system is managed by an Anganwadi worker (AWW). An Anganwadi worker is of the same community, having educational qualification varying from primary level to degree. In India, about 2 million AWWs reach out to a population of 70 million women and children.[12] AWWs have various roles and responsibilities to women in the age group of 15-45 years and children below 6 years of age.[12] The Primary Health Care approach has been advocated as the strategy to achieve equitable health.[10] AWWs have better accessibility than dental health professionals in reaching out to the rural population.[13]

Dental strategies can be integrated into this approach which can be carried out by community health workers, social workers, AWWs and so on in addition to dental personnel.[14] Studies have shown that AWWs play an important role in developing healthy habits, such as tooth brushing and hand washing through nonformal education methods in early childhood.[15,16]

AWWs play an important role in grooming health in the community. In order to instil healthy preventive oral habits in people, the AWWs themselves need to have a good knowledge and practice towards oral health. Thus, the more knowledgeable and conscious the AWWs become about oral healthcare, the more they can practice, which will gradually bring a sea change in the oral health status of the society or peer group through positive oral health promotion.[17] Since, there is a paucity of literatures related to the knowledge and practice of AWWs in Kerala regarding oral healthcare, this study was undertaken to assess the knowledge and practice of oral healthcare among Anganwadi workers of a community development block in Kerala and to identify the determinants.

## Materials and methods

The study was conducted among the Anganwadi workers of the Pulikeezh block Panchayath, which was formed in 1995, is situated in Tiruvalla Taluk in the district of Pathanamthitta, Kerala, India. The Pulikeezh Block Panchayath.[18] Anganwadi centers of Tiruvalla municipality and the five Panchayaths (local self-governing bodies) of Kadapra, Kuttoor, Nedumpuram, Niranam, and Peringara are included in this block. The Block consists of 155 Anganwadi schools with 155 teachers, 155 helpers and about 1500 children as beneficiaries.

A self-administered questionnaire was developed by the investigators; content validated by five subject experts and was modified based on their comments. The questionnaire was first translated from English to Malayalam and then back translated to English to avoid any linguistic errors. A pilot study was done on another group of AWWs before the actual study.

The questionnaire had three parts. Part 1 contained baseline variables, such as age, number of children in the Anganwadi center, years of experience, education, and location. Part two consisted of knowledge questions built on 5 domains about oral health—Facts about deciduous teeth, concept about dental treatment, diet and nutrition, etiology of dental caries, and preventive measures. Part three had questions relating to their practice regarding oral health education and good oral health practices.

Permission for the study was obtained from Child Development Project Officer (CDPO). Clearance from the ethics committee of the institution and informed consent from each of the AWW was obtained after explaining the purpose of the study. The questionnaire was distributed to the AWWs (n=145, as 10 of them were absent) on the day of their monthly meeting and the filled forms were collected back on the same day.

The data was entered and analysed statistically. Frequency of the baseline data was obtained. Kruskal Wallis test was used to find the association of baseline data with knowledge and practice scores. Spearman's R correlation test was used to find the relation between knowledge and practice.

## Results and Discussion

The response rate of the respondents was 93.5%. AWWs had students ranging from 1-26 (mean=10.76+3.91) in their centers. The mean age of the AWWs was 47.87. The AWWs work experience ranged from 1 week to 38 years (mean=15.45+10.6). Most (35.9%) AWWs were from Tiruvalla municipality and the least (10%) from Nedumpuram panchayath. The baseline characteristics of the 131 AWWs are presented in Table 1.

### Knowledge

The AWW's (53.10%) had moderate knowledge (Fig:1) with a mean of  $9.5 \pm 2.2$  (Table 2). They had more knowledge regarding diet and nutrition (90.0%) and least regarding the concept of treatment for deciduous teeth (38.6%). Percentage of correct answers for knowledge questions are given in Table 3. Table 4 presents knowledge according to baseline characteristics.

### Practice

The AWW's (73.8%) had good practice (Fig:2) with a mean of  $4.99 \pm 1.04$  (Table 2). Most AWWs (93.5%) taught good oral health habits to the students of the AWW centers, whereas 86.6% demonstrated good oral health practices. Table 5 gives the percentage of correct answers for practice questions. Table 6 presents practice score according to baseline characteristics.

## Discussion

We found that the mean percentage of practice of the AWWs was 83.2%, which was higher than the knowledge of 67.9%. This could be due to practice developed through perceptual knowledge. Practice was not significantly related to knowledge ( $r_s=0.117$ ,  $p=0.16$ , Table 2).

There was significant association between knowledge and area of the AWWs ( $p=0.004$ ). AWWs of the Niranam panchayath (15, 10.3%), aged  $\leq 40$  years, who passed degree with an experience of  $< 5$  years and had 8-11 students obtained the highest knowledge score. AWWs of the Kadapra panchayath (21, 14.5%), aged 41-54 years, who passed high school with an experience of  $< 5$  years and had  $\leq 7$  students in their Anganwadi center had more practice score. There was no significant association of knowledge or practice with socio economic factors such as age, education and experience of the respondents in this study ( $p>0.05$ ), which was contradictory to a study done by Yogesh et. al among the Anganwadi workers of Palwar district where the association was significant ( $p=0.0001$ ) [19].

In this study, 95.9% of the AWWs were undergraduates and 4.1% graduates, which was similar to other studies where  $>90\%$  of AWWs were undergraduates.[20,21,22] The minimum qualification to be eligible for the post of AWW is secondary schooling, which can be the reason for this. This also reflects on the high level of female literacy in Kerala at 91.98% [23]. For the 53.10% of the AWWs to have moderate knowledge can be due to this reason.

Few studies have assessed the knowledge and practice of AWWs about oral health. The findings of the study by Basavaraj reveals that the AWWs showed some degree of knowledge, however it appeared to be inconsistent in some aspects. [20] The knowledge and practices AWWs were less than desirable and very poor in some dimensions in a study by Gangwar et al.[24]

**Table 1: Baseline characteristics of the AWW.**

CHARACTERISTICS	No.	%
Age in years		
<40	23	15.9
41-54	96	66.2
≥55	26	17.9
Years of experience		
< 5	32	22.1
6-16	47	32.4
17-27	20	13.8
≥ 28	46	31.7
No. of children in Anganwadi schools		
<7	28	19.3
8-11	58	40.0
>12	59	40.7
Education		
Secondary School	82	56.6
Senior Secondary school	57	39.3
Degree	6	4.1
Area		
Kadapra	21	14.5
Kuttoor	19	13.1
Nedumpuram	14	9.7
Niranam	15	10.3
Peringara	24	16.6
Tiruvalla Municipality	52	35.9

n=145

**Table 2: Scores on knowledge and practice of Anganwadi teachers on oral health care**

Score on	Mean±sd	Median	Spearman Rank Coefficient
Knowledge	9.51±2.29	10.00	r <sub>s</sub> =0.117, p=0.16
Practice	4.99±1.04	5.00	

n=145

**Table 3: Percent of correct answers for knowledge questions**

Sl.	Content Areas	Correct answer %	P value
1	Knowledge about importance of deciduous teeth	62.7	0.0001
2	Knowledge about treatment of deciduous teeth	38.6	0.001
3	Knowledge about diet & nutrition	90.0	0.0001
4	Etiology of dental caries	63.1	0.0001
5	Preventive measures	84.3	0.0001

**Table 4: Association of knowledge score according to baseline characteristics**

Variables	Mean $\pm$ sd	Median	Mean rank	P value
Age in years				
< 40	10.04 $\pm$ 2.6	11.0	84.69	0.227
41-54	9.34 $\pm$ 2.1	9.0	69.11	
$\geq$ 55	9.58 $\pm$ 2.3	10.0	74.62	
Experience in years				
< 5	2.6 $\pm$ 1.8	3.5	79.55	0.747
6-15	9.2 $\pm$ 2.7	8.0	72.62	
16-25	20.5 $\pm$ 2.7	20.0	72.70	
$\geq$ 25	28.4 $\pm$ 2.7	28.0	68.97	
No. of Children in Anganwadi schools				
$\leq$ 7	9.36 $\pm$ 2.2	9.50	69.93	0.214
8-11	9.90 $\pm$ 2.3	10.00	80.34	
>12	9.20 $\pm$ 2.2	9.00	67.24	
Education				
Secondary School	9.45 $\pm$ 2.2	10.00	71.59	0.894
Senior Secondary school	9.58 $\pm$ 2.3	10.00	74.70	
Degree	9.67 $\pm$ 2.2	10.00	76.17	
Area				
Kadapra	9.5 $\pm$ 2.6	10.0	76.62	0.004
Kuttoor	8.5 $\pm$ 2.3	8.0	55.03	
Nedumpuram	8.7 $\pm$ 2.0	9.0	57.71	
Niranam	10.6 $\pm$ 1.9	11.0	94.07	
Peringara	8.5 $\pm$ 2.9	8.5	55.77	
Tiruvalla Municipality	10.1 $\pm$ 2.6	10.0	84.10	

n=145

*Table 5: Percentage of correct answers for practice questions*

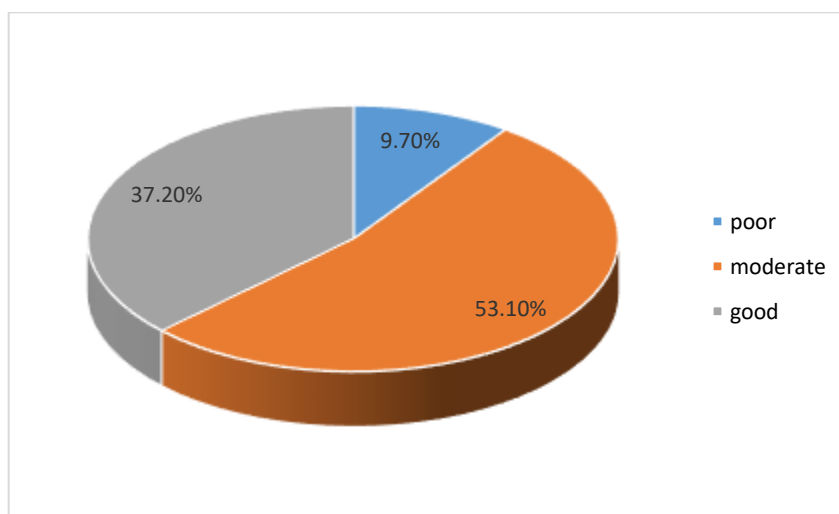
SL	QUESTIONS	Percentage %	P value
1	Oral health education	93.5	0.0001
2	Good oral health practices	86.6	0.0001

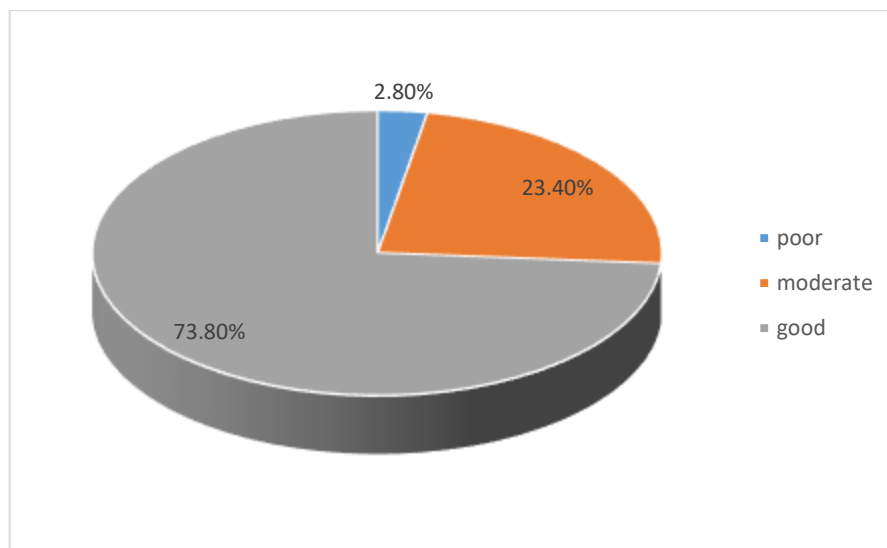
n=145

*Table 6: Association of practice score according to baseline characteristics*

Variables	Mean $\pm$ SD	Median	Mean Rank	p value
Age in years				
< 40	4.7 $\pm$ 1.3	5.0	67.19	0.277
40-54	5.1 $\pm$ 0.9	5.0	76.98	
$\geq$ 55	4.8 $\pm$ 0.9	5.0	64.96	
Experience in years				
< 5	5.1 $\pm$ 1.1	6.0	83.48	0.337
6-15	4.8 $\pm$ 1.0	5.0	69.40	
16-25	5.1 $\pm$ 0.9	5.0	75.68	
> 25	4.9 $\pm$ 0.9	5.0	68.22	
No. of children in anganwadi schools				
< 7	5.07 $\pm$ 1.0	5.0	76.64	0.664
8-11	4.91 $\pm$ 1.0	5.0	69.44	
>12	5.03 $\pm$ 1.0	5.0	74.77	

n=145

*Figure:1 Distribution of Knowledge of oral health among AWWs*



**Figure 2: Distribution of Practice of oral health among AWWs**

## Conclusion

This study concludes that the AWWs of the block panchayath had moderate knowledge and good practice of oral health care. There are some deficiencies that need to be addressed. The limitation of this study was that it was conducted only in one block panchayath, which cannot be generalized to all the Anganwadi workers of Kerala.

Oral disease, predominantly ECC can be prevented to a great extent by training AWWs in oral healthcare. They need to be educated by conducting periodic oral health education programs. The training curriculum should include oral health related topics.

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