



Original article

Oral health knowledge, attitudes and practices of Anganwadi workers of Bhopal city, India

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ABSTRACT

Introduction: Oral health is an integral part of general health and imparting oral health education at younger ages can prevent common oral diseases in the later ages. An Anganwadi or healthcare worker may play a significant role in promoting child oral health. **Aim:** To assess the knowledge, attitude and practices awareness of Anganwadi workers about oral health and to determine association between awareness about oral health and workers caries status. **Material and Methods:** The target population of this cross-sectional study involves Anganwadi workers of both rural & urban areas of Bhopal city. One hundred twelve of all the Anganwadi workers of Bhopal were selected using simple random technique. Data was collected using a self-administered questionnaire containing 30 questions for assessing Knowledge, Attitude and Practices of the Anganwadi workers and the clinical examination of the Anganwadi worker for caries presence or absence. Chi square, one way ANOVA and independent t test was applied for data analysis and $p < 0.05$ was considered statistically significant. **Results:** The study revealed that Anganwadi worker had knowledge about oral health & caries prevention. There was no statistically significant association between their mean knowledge score and caries status. **Conclusion:** Including oral health education in Anganwadi workers training programme may prove to be a significant step in developing good oral hygiene practices and caries prevention among preschool children.

KEYWORDS: Dental caries, child, primary health care, health education, knowledge

INTRODUCTION

“The development of children is the first priority on the country’s development agenda, not because they are the most vulnerable, but because they are our supreme assets and also the future human resources of the country [1].” In pursuance to the national policy for children, the Government of India launched the Integrated Child Development Services (ICDS) Scheme, which was introduced on experimental basis on 2nd October 1975. Today, this scheme represents one of the world’s largest

programmes for early childhood development. It aims in enhancing survival and development of children from the susceptible & deprived sections of the society.

Under the ICDS an Anganwadi usually covers a population of 1000 in both rural and urban areas and 700 in tribal areas. Services at Anganwadi center (AWC) are delivered by an Anganwadi Worker (AWW), who is a part-time honorary employee. She/he is a person of same vicinity, selected by

the people, having educational qualification of middle school or Matric or even primary level in some areas [2]. The usual functions of the Anganwadi Worker are health check up & health education about diet & nutrition to nursing mothers, other women (15 -45years) and children below 6 years of age [3].

AWW can provide oral health education; develop good oral hygiene practices to prevent common oral diseases in 0-6 year old children of AWC, as there have been few dental health programs conducted for such settings [4]. As studies on dental health in Anganwadi workers are scarce, this study was conducted in Bhopal city with an aim to assess the awareness of Anganwadi workers about oral health and its association with their caries status.

MATERIALS AND METHODS

The target population of this cross-sectional study involves Anganwadi workers of both rural & urban areas of Bhopal city. The study was conducted between December 2012 to January 2013. The sampling frame included all the Anganwadi centers in both the rural and urban areas of Bhopal. One hundred twelve of all the Anganwadi workers of Bhopal were selected using simple random sampling method. Anganwadi worker present in these centres present on the specific day were interviewed. Written informed consent was obtained from the Anganwadi workers & ethical approval was taken from ethics committee of the institution.

Data were collected by making personal visits to Anganwadi centers. Data was collected using following methods

1. Questionnaire containing 30 questions for assessing Knowledge, Attitude and Practice of the Anganwadi workers.

2. The clinical examination of the Anganwadi worker for caries presence or absence.

Questionnaire

A self-administrated questionnaire consisting of 30 close-ended items was used for data collection. There were-

- 1) Knowledge based questions-13
- 2) Attitude based questions-10
- 3) Practice based questions-7

The options given for the questions were dichotomized as knowledge, attitude and practice present and absent. The questionnaire was pretested on a random sample of Anganwadi workers to ensure practicability, validity and interpretation of responses. The validity of questionnaire was assessed using Cronbach’s alpha internal consistency coefficient which was in range of 0.82 to 0.86. The data obtained was complied and analyzed using spss version 17. Chi square, one way ANOVA and independent t test was applied for data analysis and p<0.05 was considered statistically significant.

RESULTS

All the participants of the study were females with a mean age of 44.64+9 years. Highest number (49) of workers were in the 41-50 years age group & lowest (10) were from 21-30 years age group.[Table 1] Out of 112 workers, 76(67.9%) had completed higher secondary education and 36(32.1%) were graduate.[Table 1] Out of 112 AWW, 58(51.8%) had at least one carious tooth.[Table 1]

Table 1: Distribution of demographic details and caries status of Anganwadi workers

Demographic characteristics		Frequency (%)
Age Groups	21-30 years	10 (8.9)
	31-40 years	21 (18.8)
	41-50 years	49 (43.8)
	51-60 years	32 (28.6)
Education	Higher Secondary	76 (67.9)
	Graduation	36 (32.1)
Caries Status	Caries present	58 (51.8)
	Caries absent	54 (48.2)

Most of the respondents (96.4%) believed that improving oral health can improve general health. All the respondents answered that more sweet items cause tooth decay. In most of the Anganwadi centers medicines were given in syrup form (n=74, 66.1%) Only 18(16.1%) were aware of the effect of syrup like medicines. Only 24(21.4%) respondents were aware of the importance of rinsing after taking liquid medicines. A higher number 80(71.4%) believed that sweets

should be taken in between meals. [Table 2] 46(42.9%) respondents had never visited a dentist ever. [Table 3] 40(35.7%) respondents visited the dentist for carious teeth. [Table 4] 70(62.5%) respondents used to brush once a day and most of the respondents were brushing in a horizontal fashion. 10(8.9%) of the respondents were not rinsing after meal. 10(8.9%) participants were rinsing irregularly after meal. 14(12.5%) out of 112 were using finger for cleaning

their teeth. [Table 5] More than 50% of participants had one or more carious teeth. Out of 64(57.2%) participants who

described their oral health status as 'Good', 30(26.8%) had at least one carious tooth. [Table 6]

Table 2: Distribution of responses of the participants according to knowledge on oral health

Knowledge questions	Responses	Frequency (%)
Oral health improves general health	Yes	107 (96.4)
Main cause of tooth decay	Sweets and Biscuit	112 (100)
Most common dental problem you come across	Tooth decay	74 (66.1)
	Bleeding gums	26 (23.2)
How will you detect tooth decay?	Tiny black spot	68 (60.7)
	Tooth pain	26 (23.2)
	Large hole	10 (8.9)
If tooth decay is not treated in time?	Decay deepens with pain & loss of teeth	104 (92.9)
Availability of dental treatment facilities in your area?	Government Hospital	46 (41.1)
	Private Hospital	46 (41.1)
	Nothing	16 (14.3)
	Don't Know	4 (3.6)
Importance of milk teeth	Yes	80 (71.4)
Microorganism cause dental decay?	Yes	92 (82.1)
Vigorous tooth brushing leads to....	Gum problems	56 (50.0)
	Abrasion	26 (23.2)
	Tooth sensitivity	26 (23.2)
Sweet items should be taken with....	With meals	26 (23.2)
	In between meals	80 (71.4)
	Don't know	6 (5.4)
Do you know effect of liquid sugar medications on teeth?	Yes	18 (16.1)
	No	70 (62.5)
	Don't know	24 (21.4)
Importance of rinsing after taking medicines in syrup form	Yes	24 (21.4)
	No	74 (66.1)
	Don't know	14 (12.5)

Table 3: Frequency of visit to dentist by Anganwadi worker during past one year

Visit to dentist by Anganwadi worker during past one year	Frequency (%)
Once	42(37.5)
Twice	12(10.7)
Thrice	10(8.9)
Not visited	46(41)

Higher education was significantly related with lesser caries presence among the AWW (p= 0.004). [Table 6] Respondents who claimed to visit a dentist had significantly lesser caries presence. [Table 6] Overall Mean 'Knowledge' score was 8.75+/-1.21. [Table 7]Participants with younger

ages had higher mean knowledge scores as compared to older age groups but this was not statistically significant.(p= 0.19) [Table 8] Association between knowledge about oral health & their caries status was statistically not significant.(p= 0.8) [Table 8]

Table 4: Distribution of the responses of the participants according to attitudes on oral health

Attitude questions	Responses	Frequency (%)
How do you describe the condition of your mouth?	Good	64 (57.1)
	Fair	28 (25.0)
	Poor	10 (8.9)
	Don't know	10 (8.9)
Have you ever visited a dentist for any dental problem?	Yes	62 (55.3)
	No	48 (42.9)
Frequency of visit during the past one year?	Once	42 (37.5)
	Twice	12 (10.7)
	Three times	10 (8.9)
Reason for visiting a dentist	Tooth decay/Pain	40 (35.7)
	Gum diseases	10 (8.9)
Are you satisfied with the dental treatment in your area?	Yes	34 (30.4)
	No	66 (58.9)
Are you aware of the fact that we should regularly undergo dental check up at least once in a year?	Yes	104 (92.9)
In your opinion, the important cause for bleeding are-	Gum disease	60 (53.6)
	Vigorous brushing	42 (37.5)
	Decay in tooth	8 (7.1)
In case of bleeding gums or painful teeth, you wish to approach a dentist or not?	Yes	98 (87.5)

Table 5: Distribution of the responses of the participants according to practices on oral health

Practice questions	Responses	Frequency (%)
Which of the following do you use for cleaning your teeth?	Toothbrush	90 (80.4)
	Finger	14 (12.5)
	Neem stick	2 (1.8)
	Others	2 (1.8)
What material do you use for Cleaning your teeth?	Toothpaste/ Powder	88 (78.6)
	Lime/Salt	20 (17.9)
How many times you brush Daily?	Once	70 (62.5)
	Twice	36 (32.1)
How do you use your brush?	Vertically	44 (39.3)
	Horizontally	58 (51.8)
	Both	2 (1.8)
When will you change your tooth brush?	1-3 month	72 (64.3)
	4-6 month	24 (21.4)
	1 year or more	4 (3.6)
	After wear	6 (5.4)
Do you have the habit of rinsing after each meal?	Yes	90 (80.4)
	No	10 (8.9)
	Sometimes	10 (8.9)
How often do you take sweet items?	Less than 3 times	94 (83.9)
	More than 3 times	18 (16.1)

Table 6: Association of age, education, visit to dentist and oral health perception with AWW caries status

AWW Characteristics		Caries status		χ^2 value	p value
		Caries present n (%)	Caries absent n (%)		
Age Groups	21-30 years	10(8.9)	0(0.0)	$\chi^2 = 12.32$	p = 0.06 (NS)
	31-40 years	12(10.7)	9(8.0)		
	41-50 years	24(21.4)	25(22.3)		
	51-60 years	12(10.7)	20(17.9)		
Education	Higher Secondary	32(28.6)	44(39.3)	$\chi^2 = 8.87$	p= 0.004 (HS)
	Graduation	26(23.2)	10(8.9)		
Visit to Dentist	Yes	26(23.2)	36(32.1)	$\chi^2 = 8.81$	p = 0.012(S)
	No	32(28.6)	16(14.3)		
	Don't remember	0(0.0)	2(1.8)		
Perception of participants about their oral health	Good	30(26.8)	34(30.4)	$\chi^2 = 3.19$	p = 0.36(NS)
	Fair	18(16.1)	10(8.9)		
	Poor	4(3.6)	6(5.4)		
	Don't Know	6(5.4)	4(3.6)		

S = significant, HS = highly significant, NS = not significant, AWW= Anganwadi worker

Table 7: Overall Knowledge, Attitude and Practice scores of Anganwadi workers

Characteristic	Overall Score	Maximum Score
Mean 'K' score	8.75+/-1.21	13
Mean 'A' score	5.80+/-2.05	10
Mean 'P' score	4.80+/-1.52	7

K= knowledge, A= attitude, P= practice

Table 8: Distribution of mean knowledge score of AWW according to their age, education and caries status

AWW Characteristics		Frequency (%)	Mean 'K' Score	F / t value	p value
Age Groups	21-30 years	10 (8.9)	9.40+/-1.43	F= 1.46	p = 0.19 (NS)
	31-40 years	21 (18.8)	8.86+/-1.10		
	41-50 years	49 (43.8)	8.57+/-1.13		
	51-60 years	32 (28.6)	8.75+/-1.32		

Education	Higher Secondary	76 (67.9)	8.71+/-1.22	t = -0.496	p= 0.62 (NS)
	Graduation	36 (32.1)	8.83+/-1.23		
Caries Status	Caries present	58 (51.8)	8.72+/-1.29	t = -0.232	p = 0.8 (NS)
	Caries absent	54 (48.2)	8.78+/-1.14		

K= Knowledge, NS = Not significant, AWW = Anganwadi workers

DISCUSSION

The present study reveals that Anganwadi workers knowledge regarding good oral health practices & prevention of caries was not consistent with their attitudes & practices. Anganwadi's can form an ideal setting for enhancing oral health and Anganwadi workers can form the major driving force in the country for incorporating good oral health behavior among children. Studies have reported that behaviors acquired during early life remain throughout the life [5]. In order to instill good behaviors among children Anganwadi Workers are supposed to be well equipped with sound knowledge, attitudes and behavior regarding the oral health. Studies to assess the oral health awareness among the Anganwadi Workers are few and till date there is no such study reported from central India.

Children have inadequate knowledge of the causes and prevention of the most common oral diseases [6-11]. Moreover, while many parents understand the importance of tooth brushing in general, some do not know how to prevent tooth decay and gum diseases. Moreover the role of fluorides in the prevention of dental decay is poorly understood. "In many countries, less than half of mothers have received any oral health advice from dentists [12-13]." Anganwadi Workers can play an important role in imparting oral health education to the children & their parents.

In the current study, most of the respondents (66%) said that caries was the most common problem they come across. This was quite similar to Study done by Sequeria and Anup in which 73% of Anganwadi Workers believed dental caries as the commonest problem around them [14]. Dental caries among children have a high prevalence. For optimal oral health, oral hygiene habits should be instilled at a very young age itself. Primary health care including dental care is the way of achieving good oral health for the community. The most practical and acceptable method to achieve this is through integration of oral healthcare in the present primary healthcare activities, through training of community level workers like AWW to identify and promote oral healthcare practices [15].

In a similar study done by Nair et al, 72% respondents agreed in favour of proper care of milk teeth [15] which is in close agreement with the present study in which 71% respondents believed that milk teeth are important. In the present study, 82% respondents said that microbes are the cause of dental caries which is in contrast to the study of Nair et al in which only 12% had the knowledge about the cause of caries [15]. It is generally accepted that the presence of dental plaque is a high risk factor for developing caries in young children [16-17]. Some studies have reported that a child's brushing habit, frequency of brushing,

and/or use of fluoride toothpaste is associated with the development and occurrence of dental caries [18-19].

It was found that children who did not brushed at bed time had a higher possibility of developing Early Childhood Caries [20]. As young children lack the ability to clean their own teeth effectively, parents are recommended to clean their children's teeth at least until they reach school age [21]. Education of the parents about prevention of caries and proper oral hygiene can be done through Anganwadi workers. Early Childhood Caries is a preventable disease. The physical, psychological, and economic consequences of Early Childhood Caries can be avoided through the education of prospective and new parents on good oral hygiene and dietary practices, using agents such as fluoride and non-cariogenic sweeteners [22]. This study clearly indicate that though all the Anganwadi Workers had knowledge about the cause of tooth decay & most of them could detect decay but they were inconsistent in visiting a dentist.

Nair et al [15] in his study shown that oral health education classes can improve knowledge of oral hygiene practices of mothers and community workers in study which is in contrast to our study in which a change in attitude has to be emphasized as the participants have shown considerably better knowledge. This can conclude the fact that not only an improvement in the knowledge is needed a simultaneous attitude change is also required.

"Fourty seven % respondents described the condition of their mouth as "good" in a study done by Frazão and Marques [23]; which is similar to the present study. Out of the 64(57.2%) participants who had described their oral health condition as good, 30(26.8%) had at least one carious tooth. This clearly indicates lack of awareness in the Anganwadi Workers about their present oral health status and this social desirability bias may also be a reason that could be attributed to the wrong responses given by the participants. So there is a need of clinical oral examination and health education programme for the workers and periodic evaluation. 43% of the respondents never visited a dentist in the present study. This may be attributed to lack of awareness, time and cost related issues [24].

In the study done by Frazão and Marques [23] among community health worker the frequency of twice a day brushing was 90% which is different from the present study in which the frequency is only 32%. Nearly all women interviewed used to brush their teeth, but their oral hygiene practices were inconsistent. Very few Anganwadi workers knew about the proper brushing technique as more than 50% of them were using brush in a horizontal fashion. These

workers should be educated about proper oral hygiene practices so that they can educate preschool children and their parents about oral hygiene. Most of the Anganwadi workers are women and they are considered primary family caretakers providing strong leadership under difficult or adverse conditions. "When women are empowered, i.e., acquire necessary skills to make decisions and have control over the health-disease process, they can play an efficient and significant role in health promotion and thus can prove to be a perceptibly key agents in the change process [23].

Mean knowledge score of the participants in the present study was 8.75 which is similar to the study done by Frazão and Marques in which the mean score among Community Health Workers was 9.09 [23]. The wide gap between knowledge and attitude as well as practices can be attributed to lack of motivation. To bridge this gap following steps must be taken.

1) Anganwadi workers devote their much of time to their families after their work in Anganwadi. Due to time constraint dental educational programme by a dentist in the centre is required to improve their oral health practices.

2) A dentist should be employed in the local health centre near Anganwadi so that supervision of the oral health condition of the children and their parents can be easily done.

3) An in service training of the Anganwadi Workers on oral health education should be done to improve their oral health related attitude and practices.

Limitations: This study has been conducted on a very small population which cannot be generalized for all the Anganwadi workers of India. Another drawback of this study is that only caries status has been assessed. An overall oral health status assessment is recommended which would yield a much more sensitive result.

CONCLUSION

Overall knowledge and attitude of Anganwadi workers about oral health was good. Previous dental visit and higher education were significantly related with lesser caries presence. Their oral health practices need to be addressed. An Anganwadi worker could become an important link in developing good oral hygiene habits & preventing caries as the children visiting AWC are in continuous supervision by the workers. Including oral health education in Anganwadi Workers training programme would enable them to provide oral healthcare instructions to mothers and children visiting Anganwadi centre.

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