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RESEARCH ARTICLE

KNOWLEDGE, ATTITUDE AND PRACTICE OF ANGANWADI WORKERS ABOUT ORAL HEALTH IN PALWAL DISTRICT

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Abstract

Early Childhood Caries (ECC) are considered as serious public health problem affecting children of every race and country. Anganwadi workers can act as promoters of oral health in society. The knowledge, attitude and practice (KAP) of Anganwadi workers are some of the essential factors in controlling ECC. A cross sectional quantitative study was conducted in Palwal District of Haryana to assess the knowledge, attitude and practice of Anganwadi workers about the oral health. Result shows the knowledge, attitude and practice of Anganwadi workers were good and satisfactory. Education and working experience of Anganwadi workers had a significant effect on their understanding, knowledge, attitude and practice. This study supports regular oral health training to Anganwadi workers.

INTRODUCTION

Early childhood caries (ECC) is a serious public health problems affecting almost every developing and developed country and race (Livny, Assali, & Sgan-Cohen, 2007). According to American Academy of Pediatric Dentistry (AAPD), presence of one or more decayed, missing or filled tooth surface in any primary tooth in a child age of 71 months of or younger is defined as ECC (American Academy of Pediatric Dentistry, 2003). Such problems are predictivefor further dental and oral problems, compromised nutrition and deteriorating development, growth and social life (De Grauwe, Aps, & Martens, 2004; Reisine & Douglass, 1998). In some cases, caries in childhood may lead to severe pain, surgical procedures under general anesthesia and even early orthodontic treatment (Alcaino, Kilpatrick, & Smith, 2000; Vargas & Ronzio, 2006).

The prevalence of ECC varies from 1% to 12% in developed countries and up to 70% in developing countries (Weinstein, Domoto, Koday, & Leroux, 1994). Different studies have shown different results in India. As per a study in Kerala state of India, the prevalence of severe ECC was reported12% in a preschool (Jose & King, 2003). In another study in Bangalore the prevalence of ECC was 27.5% among pre-school children (Prakash, Subramaniam, Durgesh, & Konde, 2012). There are differences in prevalence of ECC among different regions of India, aswell as studies conducted in North India tostudies conducted in South India. As per a cross-sectional study in North Indian city of Bahadurgarh the prevalence was 42% among pre-school children and 48% in another study conducted in a pre-school in Kanpur (M Virdi, N Bajaj, 2009; Prakasha Shrutha, Vinit, Giri, & Alam, 2013). The childhood caries among children attending Anganwadi centers in Chandigarh was 48.3% (Raj, Goel, Sharma, & Goel, 2013).

The knowledge of causalaspects of ECC is necessary to develop targeted interventions (Prakash et al., 2012). Some researchers has supported that inclusion of oral health modules in health promotion and educationalprogram

activities at Anganwadi centers along with regular oral health trainings to Anganwadi workers is necessary (Khatib, Zodpey, Zahiruddin, Gaidhane, & Patil, 2013). Empowering community workerslike Anganwadi workers to aware and deliver basic knowledge to mothers in order to sensitize them about oral health is also suggested (Raj et al., 2013).

Understanding and knowledge to Anganwadi workers about the pivotalfactors like living environment, host resistance and habits along with the underlying features that leads to ECC may also be helpful in reduction of childhood caries (Khatib et al., 2013). Whereas, early identification ofthe risks and signs in development of caries through screening is considered as best one of the best method of prevention of childhood caries. Therefore, being grass-root level workers, Anganwadi workers may play a vital role in controlling ECC and may act as oral health guide efficiently (Raj et al., 2013; Kakodkar, Matsyapal, Ratnani, & Agrawal, 2015).

In India, few studies have been conducted to access the knowledge of Anganwadi workers about oral health. One KAP study found the oral health knowledge of AWWs satisfactory without any significant association with their oral health status (Ajay Bhambal, Manoj Gupta, G. Shanthi, & Sudhanshu Saxena, 2013). Whereas AWWs in Mangalore had moderate knowledge about the oral health, habits and hygiene (A Shakya, A Rao, R Shenoy, 2013). Another study conducted in Guntur on school teachers had shown that the knowledge of teachers about the oral health was below average (Sai Sankar A., E., Sreedevi, M, Suresh Babu, V Naveen, 2013). Nonetheless of the high prevalence of early childhood caries and below average to moderate and satisfactory knowledge of oral health among AWWs, oral health has not been included in Anganwadi trainings nationally. Oral health at primary health care is limited (Rao, Rajesh, Shenoy, Pai, & Simon, 2014). All the above facts were considered in designing this study. The objective of this research was to assess the knowledge, attitude and practice of Anganwadi workers about oral health.

METHODOLOGY

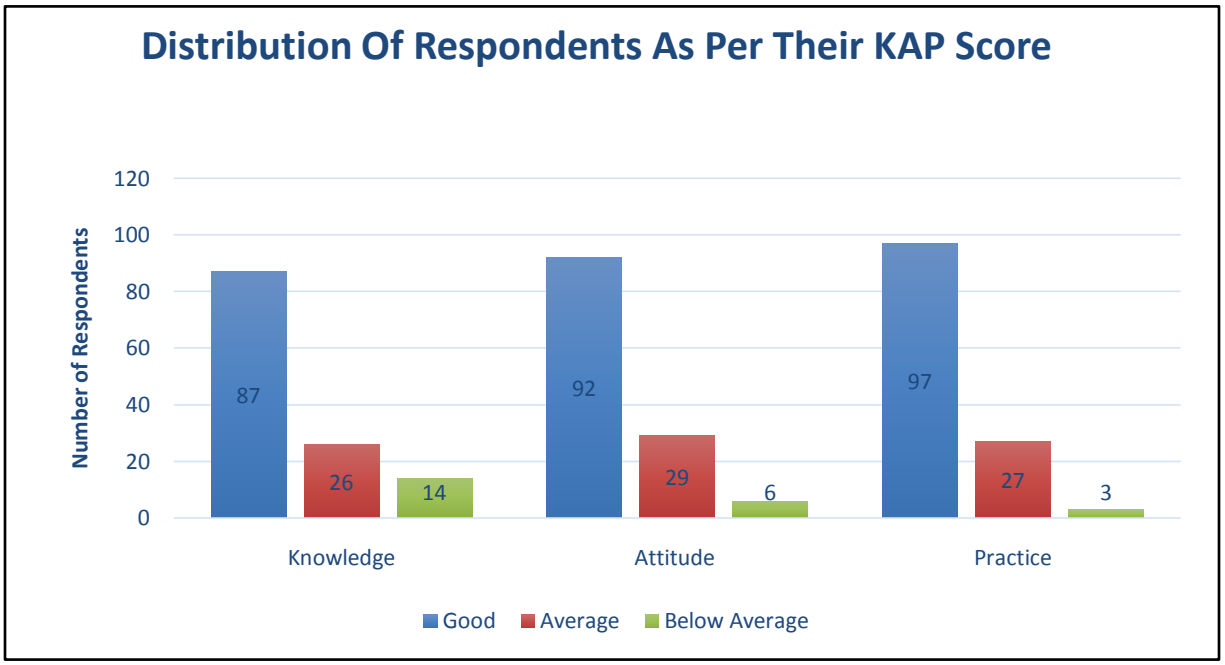
A quantitative cross-sectional study was conducted using semi-structured questionnaire in Rural and Urban part of ICDS Project Palwal-2 (Called “Palwal-2” in ICDS) of Palwal District of Haryana from June, 2013 to October, 2013. The sample size was 130, which was calculated with WHO Sample size calculation method. The proportionate Stratified Random Sampling technique was used for selection of samples. A pilot survey was conducted to test the feasibility of study and to pre-test thequestionnaire. Data was analyzed with statistical software R version 2.15.3 and presented in the form of frequency distribution, tables and graphs.Significance level was considered at 0.05 and associations were tested using student t-test and one way ANOVA test.

Population was stratified on the basis of area of residence *i.e.* Rural and Urban. Then proportionate samples were selected from each rural and urban area according to the population of those areas. Since, the rural area constitutes for 66.9% and urban 33.1%of the total population of district, thus proportionately 87 and 43 samples were selected from rural and urban areas respectively with simple random sampling technique. The Proportionate method was used to avoid selection bias. The criteria for selection was to include those AWWs who had at least one year working experience. Mini Anganwadi, which have less population coverage as compared to regular Anganwadi but have the same nature of work, had been included. Anganwadi workers having lessthan one year of working experience were excluded from the study. The consent toparticipate was taken from all the participants.

Total 25 questions (10 for knowledge, 7 for attitude and 8 for practice) were asked to each participant. Knowledge score ranged from 0 to 10, was divided into 3 groups (by 10/3=3.3), good, average and below-average knowledge score groupwith score range of 6.7 to 10, 3.4 to 6.6and 0 to 3.3 respectively. Similarly, attitude score ranged from 0 to 7, was also divided into 3 groups (by 7/3=2.3), good, average and below-average with an attitude score of 4.7 to 7, 2.4 to 4.6 and 0 to 2.3 respectively. A score of 4.7 and above was considered as positive attitude. Practice score ranged from 0 to 8, also divided into 3 groups (by 8/3=2.6), good,average and below-average practice score in range of 5.3 to 8, 2.7 to 5.2 and 0 to 2.6 respectively.

RESULTS

Out of 130 selected participants, 2 refused to take part in studyand 1 participant was on leave, thus a total of 127 participants were questioned in this study. Out of 127 respondents, 85 were from rural area and 42 were from urban area. About 88 (69%) of the respondents had an experience of more than 10 years and about 14 (11%) were with an experience of up to5 years. There were only 25 respondents with an experience in range of 6 to 10 years.



The mean ageof respondents was 37±7 years, whereas minimum age was 23 and maximum was 52 years. Among all respondents, 57 weremore than 40 years of age, 21 were aged 25 years or less and 49 respondents were in an age group of 26 to 40 of years. The minimum qualification among respondents was high school pass (10th Std.) and maximum was post-graduation. There were 22 participants with an education at least graduation or higher and 56 participants with education of at least Intermediate (12th pass). The number of participants with education of at least High school pass was 49, which was second highest. The frequency of participants with an education of at least Intermediate (12thpass) was highest among all participants.

Among all, the participants of age more than 40 years had highest good KAP score and participants of age at least 25 years had lowest score. The number of participants with an experience of more than 10 years and good KAP score was highest among all. About 68.5% respondents had good knowledge about oral health, whereas only 11.1% of the respondents had below average knowledge and 20.4% of the respondents had average knowledge about the

Table 1
KAP Score Distribution Among Respondents

Group	Total	Good		Average		Below-Average	
		No.	%	No.	%	No.	%
Knowledge	127	87	68.5	26	20.4	14	11.1
Attitude	127	92	72.4	29	22.8	6	4.8
Practice	127	97	76.3	27	21.2	3	2.5
Attitude		No.					%
Positive		92					72.4
Negative		35					27.6
Total		127					

oral health. According to the responses, 92 respondents had good attitude, 29 had average attitude towards oral health. Whereas attitude of 6respondents was below-average for oral health.

In practice score, 97 (76.3%) had good practice about the oral health, the practice of 27 respondents was average and 3respondents had below-average practice. The association between KAPscore and education (p = 0.001) was statistically significant, but the associationbetween mean knowledge score and area of respondents (p> 0.05) was not significant. The mean score of participants of age up to 25 years (8.64±1.08, 6.21±0.57 and 6.71±0.82 for knowledge, attitude and practice respectively) was higher than their older counterparts. There was significant association between knowledge and attitude (p = 0.001, significance at 0.05). Out of all, 92 (72.4%) of the

Table 2.
Distribution of Respondents As Per Socio-Demographic Factors And Knowledge Score

Age	Good	Average	Below-Average	Total
≤ 25	12	7	2	21
26 – 40	34	8	7	49
>40	36	16	5	57
Education				
≤10th	32	13	4	49
12th	43	7	6	56
>12th	7	11	4	22
Work Exp.				
≤ 5	7	4	3	14
6 – 10	12	8	5	25
>10	63	19	6	88
Area				
Rural	61	14	10	85
Urban	21	17	4	42

respondents had positive attitude towards oral health and 35 (27.6%) had negative attitude, as shown in Table No. 1.

Figure 1 Distribution of Respondents as Per Their Work Experience

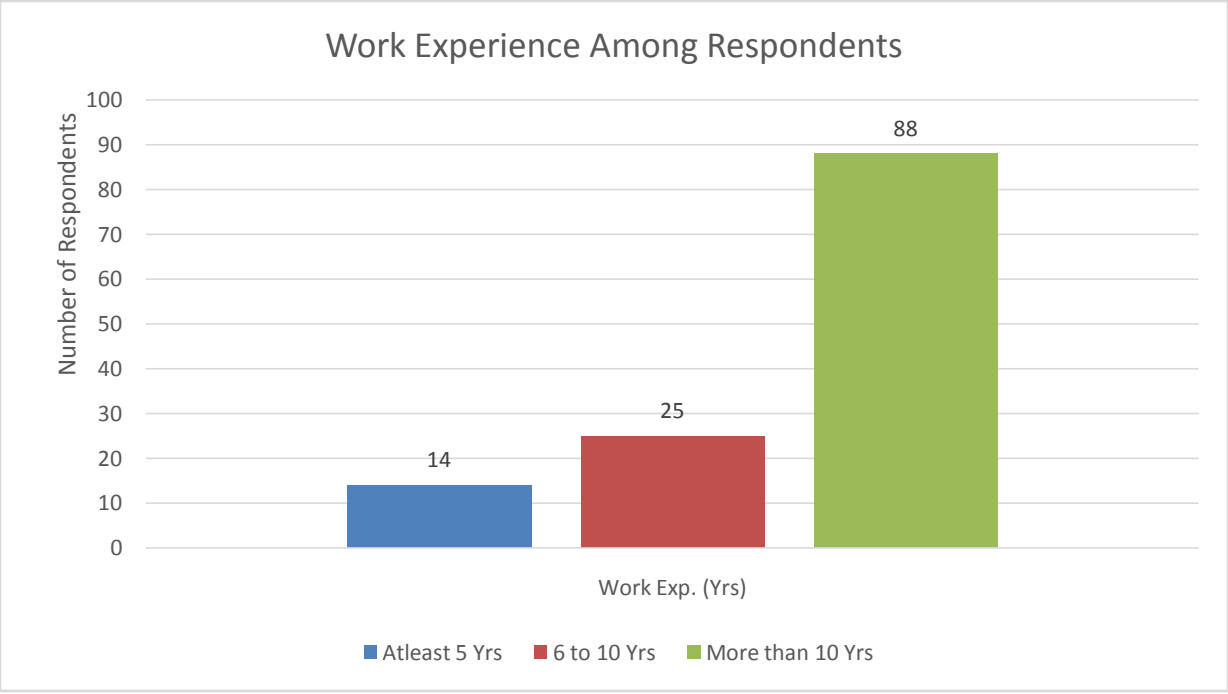


Table: 3
Mean KAP Score and Socio-Demographic Characteristics of Respondents

Age	Knowledge Mean ± SD	Attitude Mean ± SD	Practice Mean ± SD	Total
≤ 25	8.64±1.08	6.21±0.57	6.71±0.82	21
26 – 40	7.29±2.05	5.35±1.24	6.14±2.05	49
>40	5.84±2.68	4.62±1.58	5.6±1.60	57
p value	0.0001*	0.0001*	0.01*	
Education				
≤10th	4.86±2.44	4.04±1.45	5.1±1.63	49
12th	8.23±0.94	5.83±0.71	6.63±0.22	56
>12th	8.36±1.13	6.18±0.58	6.72±0.82	22
p value	0.0001*	0.0001*	0.0001*	
Work Exp.				
≤ 5	8.64±1.08	6.21±0.57	6.71±0.82	14
6 – 10	8.2±1.04	6±0.76	6.64±0.81	25
>10	6.29±2.54	4.79±1.46	5.77±1.55	88
P value	0.0001*	0.001*	0.001*	
Area				
Rural	7.01±2.42	5.18±1.43	6.09±1.38	85
Urban	6.76±2.34	5.16±1.35	5.95±1.51	42
p value	0.57	0.0001*	0.0001*	
History of Any Oral Disease				
Yes	6.94±2.37	5.53±1.42	6.14±1.35	
No	6.91±2.43	4.8±1.28	5.93±1.50	
p value	0.95	0.001*	0.039	
Children				
One	7.95±1.67	5.63±1.29	6.72±1.16	22
Two	6.66±2.54	5.11±1.43	5.68±1.35	81
Three	6.67±2.30	4.95±1.39	5.68±1.35	22
Four	8±0	6±1.41	6±1.41	2
p value	0.20	0.24	0.02*	
Family Type				
Nuclear	6.80±2.53	5.11±1.45	6.00±1.43	104
Joint	7.47±1.53	5.52±1.16	5.52±1.16	23
P value	0.10	0.15	0.08	

Statistically Significant. Student T-Test was performed two means and ANOVA for more than two means

There was significant difference in means withof knowledge, attitude and practice of different age groups (p<0.05) of participants (Table 3). Participants of age of 25 years or less had higher mean KAP score than participants of age of 26 years or more. Participants with higher education level (more than Intermediate level) had higher KAP mean scores. The mean knowledge, attitude and practice score of participants with education higher than intermediate had 8.36±1.13, 6.18±0.58 and 6.72±0.82 respectively. There was significant difference in means of knowledge, attitude and practice with education level (p<0.05).

Work experience of participants had a significant impact on their KAP scores, as participants with a work experience of at least 5 years in service had a higher mean score of KAP as compared to participants with an experience of at least 10 years and more than 10 years.
There was significant difference in means of participants' KAP scoreofparticipants of different years of service experience (p<0.05). There was significant difference in mean attitude and practice scores with the area of residence of participants, butthere was no significant difference in the mean knowledge score of participantswith the area of their residence. The p-value was much lower than 0.05 for attitude and practice, expect for the knowledge score (p = 0.57) with area of residence of participant. Participant with history of any oral disease had higher mean score of knowledge, attitude and practice than the participants without any history of oral disease.

Therewas significant difference in means of participants'mean attitude and practice scoresof participants with history of any type of oral disease. The minimum number of children per participant was 1 and maximum was 4. There was a significant difference between the mean practice scores of participants with number of children they have ($p = 0.02$).

There was significant association between all of the KAP scores and socio-demographic factorsage, education and experience of respondents. There was no significant difference in means score of knowledge, attitude and practice on comparing participants of nuclear and joint family ($p > 0.05$). Mean knowledge and attitude (7.47±1.5, 5.52±1.1 respectively, $p = 0.10$ and $p = 0.15$ respectively *i.e.* $p > 0.05$) score of participant from joint family was higher than the mean knowledge and attitude score (6.80±2.5, 5.11±1.4 respectively) of participants from nuclear family. Whereas the mean practice score (6.00±1.4) of participants nuclear family was higher than mean practice (5.52±1.1) of participant from joint family ($p = 0.08$).

DISCUSSION

Prevention of ECC is a challenge in developing countries. Being a serious public health problem, its consequences may be compromised social and personal development of children. In India, only regional statistics of ECC are available. The ECC burden is high up to 70% by some reports with significant high prevalence in local studies (Weinstein et al., 1994). According to one cross-sectional study, the prevalence of ECC at a preschool in Bangalore was 44.8% in children of 3 years old and 35% in 4 years old children (Singh, Vijayakumar, Priyadarshini, & Shobha, 2012).

Whereas, in an another study the prevalence of ECC was 33.4% in children of 2 to 5 years of age attending Anganwadi centers in Wardha, Maharashtra (Khatib et al., 2013). Anganwadi workers can play a significant role in teaching and guiding children about oral health. Monitoring and screening at Anganwadi centers can reduce the oral health problems in children and can significantly improve status of oral health. Sensitization and promotion at monthly meetings and day activities at Anganwadi centers may develop good oral habits among children and mother too can perceive the knowledge so that they can teach their children. To do so, Anganwadi workers should possess enough and precise knowledge about general oral health, oral habits and diseases. There are few studies to access the knowledge, attitude and practice of Anganwadi workers about oral health. In a cross-sectional study in Mathura district about 67% of the teachers showed good knowledge and attitude of 57% was favorable (Haloi R, Ingle N. A, 2012). Whereas, awareness among AWWs was considerablygood but identified some knowledge gaps in a study done in Mangalore (A Shakya, A Rao, R Shenoy, 2013). Whereas, the results seen in another study in Bareilly were not similar to previous mentioned study. In another study, the KAP of AWWs were moderate with less than desirable in some dimensions like tobacco and cancer (Gangwar C, Kumar M, 2014).

Sandhya et al.concluded that oral health training to primary healthcare workers in Nellore district improves their knowledge and attitude for oral health and their role in rural areas can be effective in promotion of oral health and education.A study conducted in Bhopal by Bhambal A et al. found that Anganwadi workers had enough knowledge about oral health but the knowledge could not reflect their attitude and practice, so there was no significance between knowledge and attitude along with practice. Some of the questions asked were; "is cleaning teeth is important?", "should be brush our teeth at least two times a day?", "is bad breath can be a symptom of bad oral health?", "do you check teeth of children regularly?", "bad oral health can affect social life?" etc. In our study 87 (68.5%) participants achieved good score for knowledge section, 92 (72.4%) good attitude, which was considered as positive attitude and 97 (76.3%) participants were comparatively good in practicescores.

Knowledge of the participants was not significant associated with the attitude, as $p > 0.05$. Age, education and working experience of the respondents was significantly associated with the mean score of knowledge, attitude and practice. The area of the residents was not significantly associated with their knowledge about oral health, but attitude and practice were. The significance was not found between KAP score and type of family. Almost similar results were seen in case of number of family members in a family of the respondents and the KAP score except the practice score and number of family members of the respondents.

CONCLUSION

This study showed that maximum number of Anganwadi workers had good knowledge, attitude and practice. The non-significance association between socio-economic factors and KAP score may be attributed to the experience in service, number of trainings or age. Participants with higher education had higher knowledge than participants with less education. There was another important finding in our study that knowledge, attitude and practice score was higher in participants with any history of oral disease, and it shows thatthe participants with any history of oral disease were more aware than participants without any history of oral disease. Education and experience play an important role in perceiving knowledge and reflects in attitude and practice, therefore the regular oral health training to Anganwadi workers should be provided to improve their knowledge and efficiency. The training manuals and educational material at Anganwadi centers should be modified and include the oral hygiene, brushing techniques and other oral health messages. Since, Anganwadi workers are the grass-root level workers in society, thus their impact on oral health can improve the oral health of children.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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