Evaluation of Oral Health Care Awareness in Anganwadi Workers of Rangareddy District, Telangana, India- A Cross Sectional Study

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Abstract

Introduction: Oral health is an essential and leading component of children's overall health. Anganwadi workers play a key and pivotal role in health care of the rural population and they form a bridge between health care referral system and the population. Hence, the present study was conducted to assess the oral health awareness among Anganwadi workers of Rangareddy District, Telangana State.

Materials and methods: A total of 106 Anganwadi workers were participated in the study and a questionnaire consisting of 18 questions was given to them for knowing their opinion.

Results: The study showed that **52.62%** (p<0.05) had good knowledge about the importance of oral health. There was no significant difference in the level of awareness among Anganwadi workers regardless of their age, experience and qualification.

Conclusion: Anganwadi workers can be a vital link in health care delivery system as they provide a package of services to mothers and children. Within the limits of this study, the results confirm that providing training in oral health awareness to the Anganwadi workers can empower them to become guiding force in oral health care of the society.

Key words: Anganwadi workers, Awareness, Dental caries, Oral health.

Introduction

In young children, one of the most serious health condition is poor oral health which is an essential and leading component of overall health. The lack of availability and affordability of oral health services

especially in developing countries like India results in exacerbation of the disease and increases the treatment cost and care. Control of oral diseases is possible if services are oriented towards primary health care and prevention at a community level.1

In pursuance of National Policy for Children, the Integrated Child Development Services (ICDS) Scheme was launched on 2nd October, 1975 by Indian government. It has been recognised as the world's one of the largest and unique community-based programme for the women and child development.2,3,4. The Anganwadi Workers (AWW) are the community based voluntary workers of the ICDS program. They provide services like pre-school formal education, nutrition and health education, supplementary nutrition, referral services, Auxillary Nurse Midwife (ANM) in immunization and health check-ups. They play a key and pivotal role in health care of the rural population and forms a bridge between health care referral system and the population.2,5.

Oral health is very much ignored by most of the people and as Anganwadi workers involve at grass root level in close association with the community, assessing their knowledge, attitude and practices towards oral health helps us to improve the awareness on oral health among the general population. Thus, the present study was conducted to assess the oral health awareness among Anganwadi workers of Rangareddy District, Telangana State.

Methodology

A descriptive cross- sectional study was conducted in Telangana state, Rangareddy district to assess the oral health awareness among Anganwadi workers. . Convenience sampling technique was employed. Approval for the study was obtained from the college authorities & by the Head of the Dept. of Paedodontics and Preventive Dentistry, Government Dental College and Hospital, Hyderabad & Ethical Review Committee along with the project director of ICDS. Study was conducted over a period of 3 months Dec 2018 to Feb 2018, only 106 Anganwadi workers we're willing to participate in the study. The purpose of the study was explained and obtained consent. A specially designed, pretested, structured Questionnaire in Telugu and English languages consisting of 18 questions divided into three Groups consisting the queries about the awareness on 1) Oral changes during pregnancy 2) Causes of dental caries and 3) Caries prevention. The questionnaire was handed over to the participants and sufficient time was given to complete the form. All the 106 participants returned the completed questionnaire and the results were subjected to statistical analysis using chi square test (SPSS Version-25). Statistical significance was set at p≤0.05.

Inclusion criteria

All the Anganwadi workers of Shamshabad, Rangareddy district, Telangana who were ready to participate in the study till its completion.

Exclusion criteria

Those who were not available on the day of questionnaire distribution.

Results

The age of Anganwadi workers ranged from 20 – 50 years, with majority of them in 4th decade (50%), followed by 5th decade (33%) and 3rd decade (17%). All of them were educated, 27% have finished their high school education, 40% have finished their intermediate (+2 level), 29 were graduates and only 3 (3%) were post graduates and 1 (1%) studied till fifth standard only. Out of 106 Anganwadi workers, 75 of them had 12 to 18years experience, 19 had 6 to 12years experience and 12 had 0-6 years' experience. (Graph-1)

Oral changes during pregnancy (Group I)

Among the three questions about oral changes that occur during pregnancy, the response to the question related to bacteria causing tooth decay can spread from mother to child, showed that significant number of AWW (p≤0.05) were aware of the fact. (Table 1)

Causes of dental caries (Group II)

Out of 848 questions regarding causes of dental caries, 47.87% of them gave correct answers whereas 48.83% gave incorrect answers and 3.3% did not reply to any of

these questions. There was no significant difference found among Anganwadi workers regardless their age, experience and qualification. (Table 2)

Dental caries prevention (Group III)

Regarding prevention of dental caries, 48.78% of Anganwadi workers answered correctly and 48.52% answered incorrectly whereas 2.7% did not answer at all. The difference in awareness about dental caries prevention was statistically significant (p < 0.05) regardless of their age, experience and qualification. (Table 3)
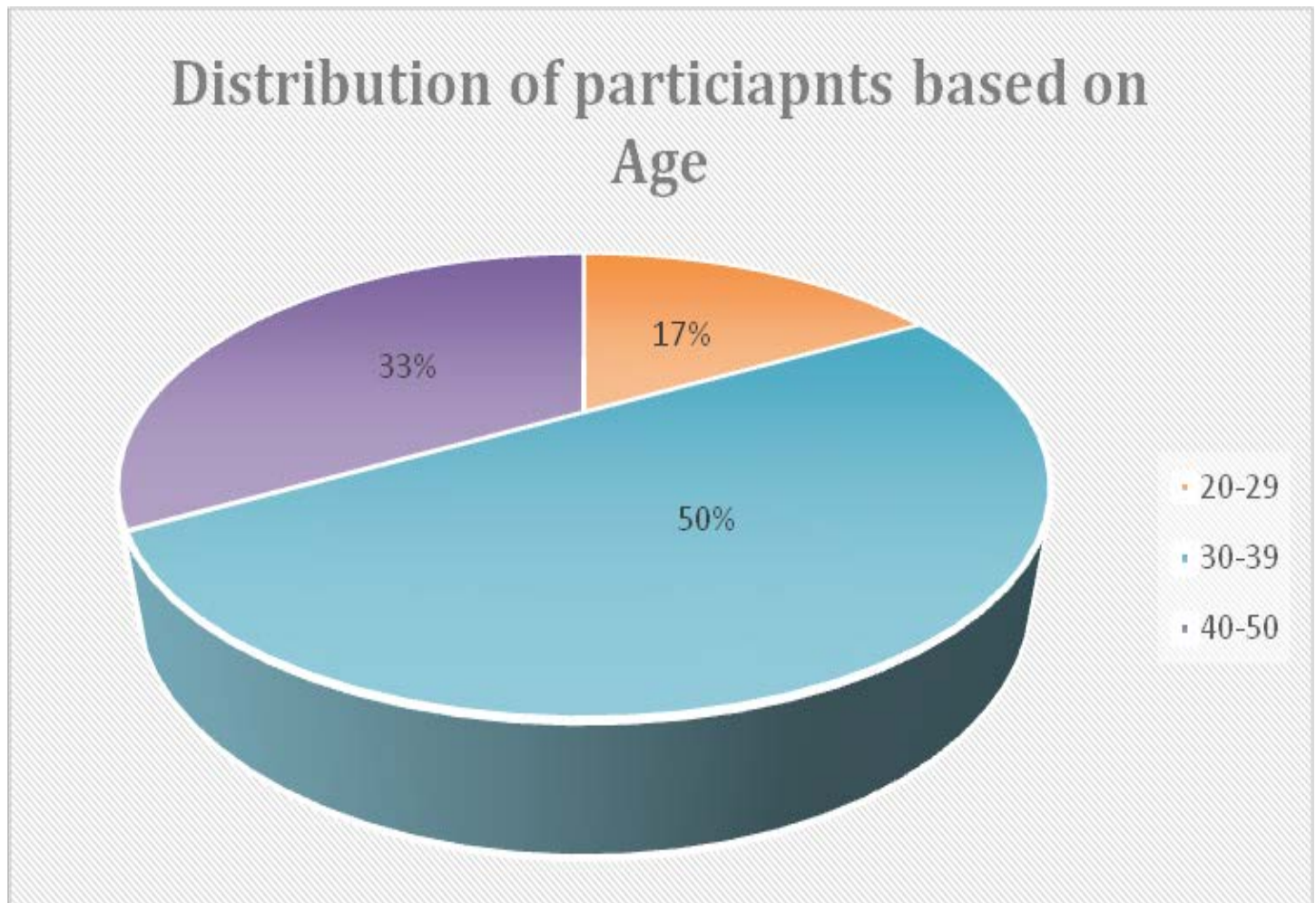
Graph 1: Socio-demographic characteristics of Anganwadi workers

a- **Age**

b- **Education**

c- **Working experience**

Graph -1 (a): Distribution of participants based on Age

Graph 1- (b): Distribution of participants based on education
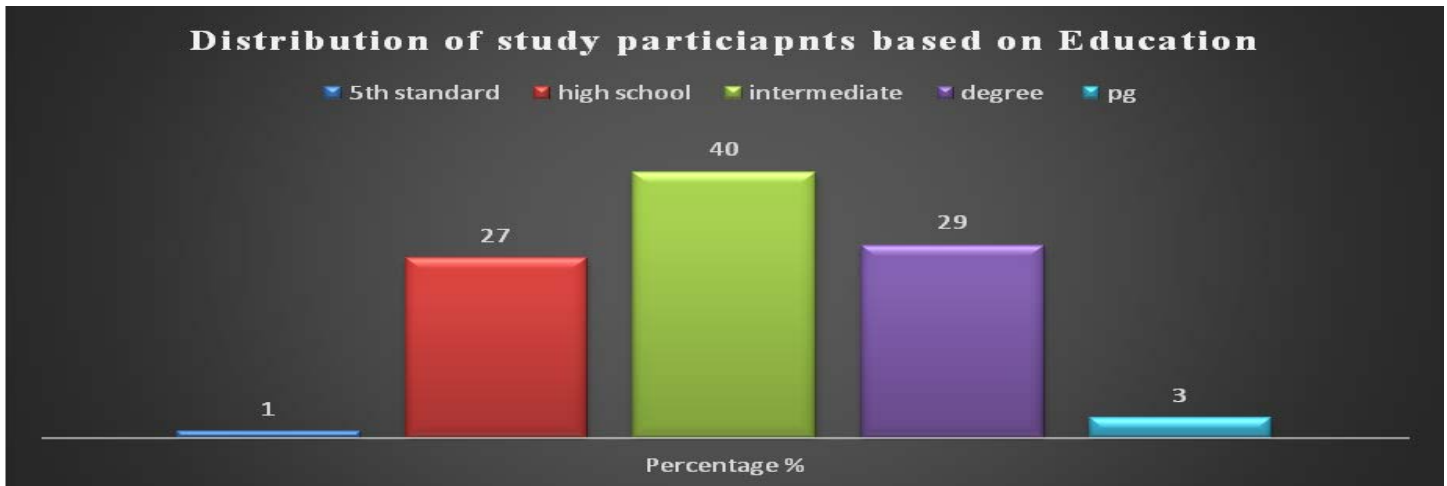
Graph -1 (c) : Distribution of participants based on working experience
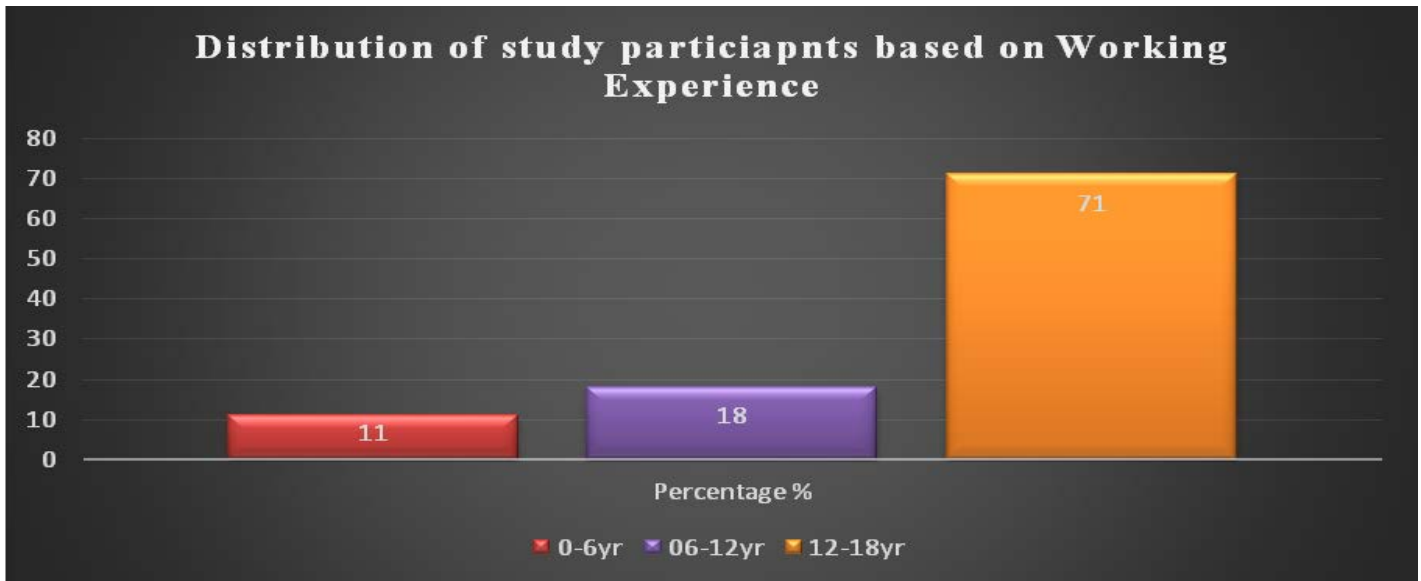
Table 1: knowledge of Oral changes that occur during pregnancy (Group I)

S. No	Question	Response	Age group			Qualification			Experience		
			<35 years	>35 years	p-value	Up to X class	Above X class	p-value	0-9 years	10-18 years	p-value
1.	Does Pregnancy causes oral changes in the mouth of a pregnant woman	Correct – 82 (77.36%)	37	45		23	59		16	66	0.603
		Incorrect -17 (16.04%)	06	11	0.592	04	13	0.630	02	15	
		No response- 7(6.60%)	04	03		03	04		02	05	

2.	Does mother's diet during pregnancy affect development of baby s teeth?	Correct-86 (81.13%)	35	51	0.234	22	64	0.330	15	71	0.11
		Incorrect-16 (15.09%)	09	07		07	09		01	15	
		No response-4(3.77%)	03	01		01	03		02	02	
3	Bacteria that cause tooth decay can spread from mother to child?	Correct-68 (64.15%)	25	43	0.04*	19	49	0.956	10	58	0.34
		Incorrect-30 (28.30%)	19	11		09	21		08	22	
		No response-8(7.55%)	03	05		02	06		02	06	
	Total questions-318	Correct -236 (74.2%)	97	139	0.142	64	172	0.730	41	195	0.29
		Incorrect -63 (19.8%)	34	29		20	43		11	52	
		No response-19 (6%)	10	09		06	13		06	13	

Table 2- Knowledge of Causes of dental caries (Group-II)

| S.No | Question | Response | Age group | | | Qualification | | | Experience | | |
			<35 years	>35 years	p-value	Up to X class	Above X class	p-value	0-9 years	10-18 years	p-value
1	Do you know what causes tooth cavities?	Correct -47 (44.34%)	20	27	0.591	12	35	0.828	10	37	0.591
		Incorrect-47(44.34%)	23	24		14	33		09	38	
		No response-12(11.32%)	04	08		04	08		01	11	
2	In your opinion what causes dental caries?	Correct -32 (30.19%)	19	13	0.063	08	24	0.718	08	24	0.202
		Incorrect-72 (67.92%)	26	46		21	51		12	60	
		No response-02 (1.89%)	02	00		01	01		00	02	

3	Foods causing tooth decay	Correct -95 (89.62%)	39	56		25	70		18	77	
		Incorrect-09 (6.49%)	06	03	0.322	04	05	0.406	02	07	0.316
		No response-02(1.89%)	02	00		01	01		00	02	
4	Main type of diet involved in tooth decay	Correct-29 (27.35%)	14	15		11	18		06	23	
		Incorrect-72 (67.94%)	31	41	0.874	18	54	0.390	12	60	0.416
		No response-5 (4.71%)	02	03		01	04		02	03	
5	Do you know crackers/potato chips causes cavities?	Correct-38 (35.9%)	16	22		11	27		04	34	
		Incorrect-67 (63.2%)	31	36	0.908	18	49	0.763	16	51	0.139
		No response-01 (0.9%)	00	01		01	00		00	01	
6	Poor oral health with several decayed teeth in a child affect his/her growth and body weight?	Correct-40 (37.73%)	18	22		14	26		06	34	
		Incorrect-63 (59.43%)	28	35	0.925	15	48	0.461	14	49	0.138
		No response-03(2.84%)	01	02		01	02		00	03	
table 7	Putting a child to bed with sweetened milk in a bottle is okay for child's teeth - Yes/No	Correct-98 (92.45%)	41	57		27	71		18	80	
		Incorrect-06 (5.67%)	05	01	0.137	02	04	0.753	02	04	0.557
		No response-02 (1.88%)	01	01		01	01		00	02	
8	How will you detect tooth	Correct-27 (25.48%)	15	12	0.356	06	21	0.603	05	22	0.517

decay?	Incorrect-78 (73.62%)	31	47		23	55		14	64	
	No response-01(0.9%)	01	00		01	00		01	00	
Total questions-848	Correct- 406 (47.87%)	182	224		114	292		75	331	
	Incorrect-414(48.83%)	181	233	0.926	115	299	0.420	81	333	0.757
	No response-28(3.3%)	13	15		11	17		04	24	

Table 3- Knowledge of Dental caries prevention (Group III)

S No	Question	Response	Age group			Qualification			Experience		
			<35 years	>35 years	p-value	Up to X class	Above X class	p-value	0-9 years	10-18 years	p-value
1	Best time to discontinue breast feeding / Bottle feeding	Correct-4 (3.77%)	03	01		02	02		02	02	
		Incorrect-102 (96.23%)	44	58	0.208	28	74	0.326	16	86	0.073
		No response-00	00	00		00	00		00	00	
2	What time is appropriate to start cleaning baby's mouth?	Correct-48 (45.28%)	17	31		16	32		04	44	
		Incorrect-57 (53.77%)	29	28	0.112	14	43	0.322	14	43	0.028*
		No response-01 (0.95%)	01	00		00	01		00	01	
3	What cleaning aids do you suggest for use with the toothbrush	Correct-9 (8.49%)	01	08		4	05		01	08	
		Incorrect-94 (88.67%)	45	49	0.098	26	68	0.561	27	67	0.522
		No response-3 (2.84%)	01	02		00	03		00	03	

	to clean teeth?									
4	How many times in a day teeth should be cleaned?	Correct-102 (96.22%)	44	58	0.709	28	74	0.764	17	85	0.367
		Incorrect-03 (2.83%)	02	01		01	02		01	02	
		No response-01 (0.95%)	01	00		01	00		00	01	
5	Do you advise the children to brush their teeth twice daily? – Yes/no	Correct-103 (97.16%)	45	58	0.969	27	76	0.237	18	85	0.402
		Incorrect-01 (0.96%)	01	00		01	00		00	01	
		No response-02 (1.88%)	01	01		02	00		00	02	
6	Amount of tooth paste in infant	Correct-50 (47.17%)	10	40	0.00018*	22	28	0.0003*	02	48	0.002*
		Incorrect-54 (50.95%)	35	19		06	48		16	38	
		No response-02 (1.88%)	02	00		02	00		00	02	
7	Fluorides containing tooth pastes prevent tooth decay – yes/no	Correct-46 (43.4%)	20	26	0.154	10	36	0.02*	06	40	0.630
		Incorrect-49 (46.22%)	31	18		13	36		10	39	
		No response-11 (10.38)%	06	05		07	04		02	09	
	Total questions - 742	Correct- 362 (48.78%)	140	222		109	253		50	312	
		Incorrect-360(48.52%)	187	173	0.007*	89	271	0.001*	84	276	0.002*
		No response-20 (2.7%)	12	8		12	08		02	18	

Discussion

To achieve good oral health in the community, primary health care approach is an efficient and a feasible method. It is done through training of community level workers and integration of oral healthcare in the existing health care activities. To incorporate good oral health among children, Anganwadi workers and centres are playing a main role.

Group I - Awareness on oral changes during pregnancy

Most of the Anganwadi workers (81.13%) know about the importance of diet during pregnancy and its effects on baby's developing tooth. These results were similar to the study done by **Shilpa et al** (2014)[6] with 75.9% awareness, but in contrast to the study done by **Basavaraj *et al*** (2013)[7] in Davangere city with 34.3% awareness among AWW which indicated lack of knowledge about the relationship between the maternal health and oral health of the unborn child. Lack of nutrition in a pregnant mother would affect her child's oral health and there was an association between the poor gum health in a pregnant woman and pre-term labor.

The present study showed that majority of the Anganwadi workers (64.15%) had knowledge about spread of tooth decay from mother to child and these findings are similar to that of study done by **Basavaraj *et al*.** (2013)[7] .Transmission of cariogenic bacteria from mother to child have been reported from many years with Streptococcus mutans being the main microbial organism that can transmit among individuals through saliva and even through kissing the baby.

Group II- Knowledge on causes of dental caries

In the present study, out of 106 Anganwadi workers 95 (89.62%) were aware about the sweets/chocolates/toffees as foods causing tooth decay. In contradictory to the present study, **Theon *et al*** (2007)[8] reported that only 45.3% Anganwadi workers agreed that frequent intake of sugar as a main causative factor of dental caries. Sweets/chocolates are sticky foods which can prolong the activity of microorganisms causing tooth decay.

Majority of Anganwadi workers (92.45%) in our study were aware that babies should not be put to bed with milk bottles in their mouth whereas **Basavaraj *et al*** (2013)[7] reported that only 58.1% Anganwadi workers think that babies should not be put to bed with bottles. The present study group was aware of harmful effects of bottle feeding during night time. They knew that if babies fall asleep while sucking on bottle, the milk will pool around the teeth and can cause cavities.

Most of the AWWs (73.62%) doesn't know how to detect tooth decay and those who know (25.48%) revealed that if a tooth is deeply cavitated and associated with pain, then only they consider it as tooth decay. They are not aware of incipient lesion which if diagnosed at early stage can be prevented before they end up in deep cavities.

Group III -Knowledge on dental caries prevention

According to the response of this study, a statistically higher number of AWWs (96.23%) do not know when to discontinue breast/bottle feeding. A significantly higher number (53.77%) were not aware of the appropriate time to start cleaning baby's mouth. Regarding the use of cleaning aids, a significantly higher number (88.67%) were incorrect. Similarly 50.95% of them do not know about the correct amount of the tooth paste to be used in the infant. These facts need the attention of child health care providers to improve the general and dental health in the society.

Most of the AWWs (96.22%) were aware that teeth should be cleaned twice daily. Cleaning child's mouth should begin before teeth erupt and tooth brushing is recommended when the first teeth erupts at least once daily till 2 years and subsequently twice daily.

Regarding the knowledge of dental caries prevention, 48.78% gave correct response whereas significantly higher i.e.,48.52% were incorrect (p<0.05) regardless to their age group, qualification and experience.

The present study showed that **52.62%** had good knowledge about the importance of oral health awareness. The results were similar to the study of **Haloi R *et al*** (2014)9 in Mathura, where it was observed that 54.7% of AWW had a fair level of knowledge regarding oral health and also to the study conducted by **Pankaj *et al*** (2005)10 in Belgaum city, Karnataka which showed that 59.1% of AWW had medium level of knowledge. This awareness could be due to the reason that the minimum qualification to be eligible for the post of AWW is matric or equivalent. Moreover, AWWs are given training in aspects of health and disease after their selection irrespective of their educational qualification.

Conclusion

Anganwadi workers can be a vital link in health care delivery system as they provide a package of services to mothers and children. Within the limits of this study, the results confirm that providing additional dental training to the Anganwadi worker can empower them to become oral health guide in the society. As an oral health guide, the Anganwadi worker can successfully perform the following functions:

1. Identify the oral health and disease condition of the children up to 6 years of age
2. Educate the parents about oral health, diet to maintain oral health, reasons for different dental problems in children, oral habits, teething, dental caries process and the need to get the dental treatment at the earliest stage
3. Educate the pregnant women about the oral changes during pregnancy and importance of maintaining oral health.

4. Finally, the Anganwadi worker can provide information about oral hygiene aids and brushing technique for children up to 6 years of age.

Limitation

1. Sample size was small with unequal distribution of workers in their age, educational qualifications and experience.
2. No special training was given to the Anganwadi workers about oral health.
3. Though the awareness of the AWWs was assessed, oral health status of the children in these centers was not determined.

List of abbreviations used

Integrated Child Development Services (ICDS), Anganwadi Workers (AWW), Auxiliary Nurse Midwife (ANM).

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