



Original Article

Knowledge and Attitude of ASHA workers in prevention of Early Childhood caries: A cross sectional study

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Abstract

Introduction: Accredited social health activists (ASHAs) are government instituted community health workers as part of the National Rural Health Mission. The purpose of this study was to assess the knowledge and attitude of ASHAs regarding Early Childhood caries.

Methods: A cross sectional survey was carried out among 190 ASHA workers. A self-constructed, 15 items, close-ended questionnaire based on the dental knowledge and the attitude of dental health was translated into regional language using a standardized translation process. The Questionnaire was distributed at the monthly review meeting held at Primary Health centres and their response was taken. The data was analysed and compared on basis on their educational level. The data were analysed by SPSS Version 24.

Results: The content validity index of the questionnaire was 0.75 and the face validity was 3.2. The internal consistency was assessed with a Cronbach's alpha coefficient and was found to be 0.876. Test-retest reliability is 0.8. The correct responses on knowledge of participants is 55.76% and for the attitude towards child oral health is 74.76%. Study also showed ASHA workers have poor knowledge about first dental visit and oral hygiene maintenance in children ($p < 0.05$). No statistical difference in knowledge and attitude of ASHA based on their educational level was noticed

Conclusion: The ASHA workers have only satisfactory knowledge about ECC but their attitude toward the Child Oral Health is good. Therefore training and motivation can help in educating them for preventive community programmes for ECC.

Keywords : ECC, ASHA workers, Dental Caries

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INTRODUCTION

Dental caries is the most common oral disease and is considered as a public health challenge, especially among children (1). According to a systematic review by Ganish A (2) in 2019, the overall prevalence of Early Childhood Caries in India is estimated to be 49.6%. ECC begins early in life, progresses rapidly and often goes untreated. Its consequences can affect the immediate and long-term quality of life of the child's family and can have significant social and economic consequences (3).

Oral hygiene behaviours differ greatly among geographical locations and cultural identities. It is depended not only about the knowledge of the health and disease but also the awareness about prevention and treatment. Oral health treatment is greatly affected by the availability and accessibility of health care services especially for young children. Poor attentiveness regarding oral health has been particularly seen among unprivileged group (4). It has been shown that the rural Indian community, which constitutes more than 70% of the Indian population has a low level of oral health awareness and practice when compared to urban.

The primary responsibility of oral health educators is to impart positive oral health knowledge and behavior in the society. The grass root level health workers can create awareness among the public through their routine visits and also through Community based oral health and hygiene programmes (5). The concept of ASHA programme is a key component of community health programme in India and has continuously evolved over the last two decades. Accredited Social Health Activist (ASHA) is a trained female community health activist selected from the community itself and trained to work as an interface between the community and the public health system. They serve as a facilitator, mobilizer, and provider of community level health care. With one Community Health Volunteer for every 1000 individuals in India, they act as an important connecting link between the public and primary health care delivery system for health and preventive care. which in turn ensures that the primary care services are accessed by the rural population (6)(7). Indian children continue to have a high rate of dental disease, and this burden of illness is disproportionately represented by children of lower socioeconomic status. (8)

The ASHA workers knowledge toward oral health to a great extent influence the community as they can extend health education at the first contact in the community. Literature on the Early Childhood caries knowledge of community health care workers is scarce. Therefore, a study was to conduct to assess the knowledge of ASHA workers on Early childhood caries in Kannur District of Kerala.

MATERIALS AND METHODS

A cross sectional survey was carried out to access the knowledge and attitude of ASHA workers about ECC in Kannur district of Kerala state in India. Before the start of the study, permission was obtained from the Institutional ethical committee and district health department authorities and the consent was taken from each participant. The duration of the study was from June 2023 to August 2023. ASHA workers from all 93 local governing bodies in Kannur District were invited to participate in the study. Total no of ASHA Workers in Kannur District is estimated to be around 22000 in Kannur District, therefore minimum sample size was calculated using online sample size calculator (<http://www.raosoft.com/samplesize.html>) by keeping the margin of error at 5% and a confidence level of 95%. Therefore, the minimum sample size needed for the study was 187, which is rounded to 190.

A self-constructed, 15 item close-ended questionnaire was prepared for the study. Apart from the demographic details of the participant, questionnaire consisted of two sections which consisted of 10 questions based on the dental knowledge and second section based on the attitude of dental health having 5 questions. No identifiable information was taken thus protecting participant privacy. The questionnaire was translated into regional Malayalam version using a standardized forward-backward translation process. A pilot study was conducted on 20 subjects. Reliability was checked by test-retest method. The internal consistency and content validity, based on which necessary changes were made in the final questionnaire.

The Questionnaire was distributed at the monthly review meeting held at Primary Health centres. The participants were asked to fill the questionnaire in the hospital premises itself in the presence of the investigators.

All demographic data were tabulated according to their education (less than 10th standard vs 10th standard pass and above). The quantitative data obtained were analysed by SPSS Version 24 (Statistical package for social sciences IBM Corporation, Chicago, USA). Pearson's chi-square test was used to find the statistical significance among the ASHA workers educational experience on their responses.

RESULTS

190 responses were taken for the study. Table 1 shows the demographic characteristics of the participants. Most of the participants are in the age group are above 30 years. 71.6% of the subjects has an educational qualification of 10th pass and above.

Table 2 shows the mean values of reliability and validity tests, the mean score for content validity index (CVI) was 0.75. The face validity score overall impact score of the questionnaire is 3.2 (Range 1.9-4.1) which shows that there is no ambiguity in reading questions and comprehending them. The internal consistency was assessed with a Cronbach's alpha coefficient and the value was found to be 0.876, the subscale values ranged from 0.78–0.91 which means good to excellent. Test–retest reliability was assessed using ICC, the value of which was 0.8 which denotes good reliability

Table 3 shows Response of ASHA workers on questions regarding their knowledge about Early Childhood Caries. The results shows that there is no statistical difference in knowledge about oral care when ASHA workers educational levels are compared ie 59.87 % in 10th pass and above and 53.66 in less than 10 standard with an average 55.76%. But overall, ASHA workers lack knowledge regarding the oral health maintenance in children for questions on tooth paste, initiation of tooth brushing and first dental visit ($p < 0.05$)

Table 4 shows attitude of ASHA workers towards ECC. The results shows that they have good attitude towards child oral health maintenance. When their educational level were compared 74.38% correct responses were seen in 10th pass and above and 75.14% in less than 10 standard with an average of 74.76% . The study shows that ASHA workers do not check the oral cavity of children for signs of ECC during visits ($p < 0.05$).

Table 1: Details of the participants

Variables		Frequency	Percentage
Age	21-30 years	25	13.1
	31-40 years	90	47.3
	Above 40 years	75	39.4
Experience	Less than 5 years	39	20.6
	More than 5 years	111	58.4
Education	Less than 10th	54	28.4
	10 th pass and above	136	71.6

Table2: Mean reliability and validity scores

Content validity index	Face validity	Reliability Cronbach's α	95% CI	ICC	Test – retest Validity
0.75	3.2	.876	0.561-0.888	0.771	0.8

Table 3: Knowledge of the participants regarding ECC

	Response	Educational qualification		p value
		Less than 10 th std (54)	Above 10 th std (136)	
Dental caries is caused by micro-organisms	Yes	31(57.5)	100(73.5)	0.775
	No	10(18.5)	16(11.7)	
	Don't know	13(24)	20(14.8)	
Early childhood caries (ECC) affects mostly in the upper front teeth	Yes	35(64.8)	110(73.5)	0.876
	No	8(14.8)	14(10.29)	
	Don't know	11(20.3)	22(16.17)	
Mothers diet during pregnancy affect child's oral health?	Yes	40(74.)	121(88.97)	0.811
	No	7(12.9)	6(4.41)	
	Don't know	7(12.9)	9(6.61)	
Breastfeeding at night time may cause dental caries	Yes	45(83.3)	126(91.1)	0.865
	No	3(5.5)	6(4.4)	
	Don't know	6(11.1)	6(4.4)	
High amount of sugar consumption will cause dental caries	Yes	50(92.5)	131(96.3)	0.232
	No	2(3.7)	2(1.47)	
	Don't know	2(3.7)	3(2.2)	
Utensils used by mother is shared with their kids it may result in tooth decay in those children	Yes	22(40.7)	77(56.6)	0.076
	No	22(40.7)	56(41.17)	
	Don't know	11(18.5)	3(2.2)	
Appropriate time to start tooth cleaning in children	After the first tooth erupts	18(33.3)	35(25.7)	0.0354*
	After all front teeth erupts	32(59.2)	94(69.11)	
	After all the tooth erupts	4(7.4)	7(5.14)	
Amount of tooth paste to be used for children less than 2 years	No paste needed	22(40.7)	63(46.3)	0.0434*
	Pea size	10(18.5)	29(21.3)	
	Smear on bristles	10(18.5)	23(16.9)	
	Half brush	12(22.2)	21(15.4)	
First visit to a dentist for a child	At 6 Months of age	12(22.2)	10(7.3)	0.049*
	At 1 year of age	15(27.7)	16(11.7)	
	After all milk teeth erupts	20(37)	100(73.5)	
	If there is any dental problem	7(12.9)	10(7.3)	
Early loss of primary teeth can lead to mal nourishment	Yes	24(44.4)	88(64.7)	0.0765
	No	12(22.2)	22(16.1)	
	May be	18(14.8)	26(19.1)	

Table 4: Attitude of ASHA workers towards child oral Health

	Response	Educational qualification		p value
		Less than 10 th std (54)	Above 10 th std (136)	
1. Do you advise children to brush their teeth twice daily?	Yes	51(94.5)	125(91.9)	0.894
	No	03(5.5)	11(8.1)	
2. Do you discuss about the child's oral health with parents during home visits?	Yes	44(81.4)	108(79.4)	0.098
	No	10(18.6)	28(20.6)	
3. Do you advise about healthy eating habits during your home visits	Yes	51(94.4)	128(94.1)	0.675
	No	03(5.6)	08(5.9)	
4. Do you advise against letting baby sleep with sweet nipple or bottle in the mouth	Yes	46(85.1)	130(97.5)	0.776
	No	8(14.8)	6(4.4)	

DISCUSSION

India's National Health Policy, 2017 recommends strengthening the delivery of primary health care through establishment of "Health and Wellness Centres" (HWCs) as the platform to deliver Comprehensive Primary Health Care (CPHC) (9). ASHA worker is a very important member of the health and wellness centre team which takes care of primary health care. They are closest to the public, therefore they have a significant role in helping the health team in screening, referring and follow-up care for oral conditions and common preventable Oral problems (10). They have been provided with adequate training and an educational handbooks are given to them for reference (11). The committee on empowerment of women of 15th lok Sabha advise future ASHA workers to have a desirable education of 10th class from the present minimum formal education for an Asha worker i.e. 8th standard (12). Most of the participants in this study has minimum qualification of 10th Class or more.

The questionnaire used in this study has been validated demonstrating a satisfactory level based on Lawshe table (13). Face validity impact scores shows that there is no ambiguity in reading questionnaire and comprehending them. Internal consistency using Cronbach's alpha score shows good to excellent values and the test retest values shows good reliability. Therefore this questionnaire used in this study can be considered as a reliable tool to be used in evaluating knowledge and attitude on ECC for ASHA workers. The results of the study shows the correct responses on questions on knowledge about child oral health of the ASHA workers is about 55.76%. Previous studies by Godhi B et al (14) shows that only 47% of ASHA workers are knowledgeable about ECC whereas in a study by Vinnakotta NR (15) shows that the knowledge of ASHA's regarding oral health is poor. More than half of the respondents in the present study have responded correctly about cariogenic diet, night feeding, mothers diet during pregnancy period but they lack knowledge regarding transmission of caries, initiation of tooth brushing, amount of tooth paste to be used in children and about the first dental visit. The study shows that there is no statistical difference in knowledge based on their educational level.

Mothers are the main source of passing streptococci mutans to children. Studies by Klein et al (16) detected 81.25 per cent genotypic similarity between mother and child salivary S mutans. An India study by Damle SG (17) has shown Streptococcus similar in 77.27 per cent of child mother pairs. However, any caregiver can be a potential source of transmission. The transmission can occur via saliva contact such as tasting or sharing of utensils or pre-chewing food (18). The ASHA workers should be made knowledgeable regarding the prevention of vertical transmission of the Streptococcus mutans so that they can pass the information to the rural masses. Anticipatory Guidance regarding oral health can be imparted by ASHA workers to parents. It is the process of providing practical developmentally appropriate information on children's health to prepare parents for significant physical, emotional and psychological milestones and provides a framework for prevention that goes beyond caries to address all aspects of children's oral health. Parents can be counselled on topics such as oral hygiene maintenance and its importance, dietary habits, development of oral tissues, oral habits, injury prevention etc. Emphasis is to be placed on importance of primary teeth for chewing, speaking, jaw growth and craniofacial development and self-esteem (19)(20).

The knowledge about start of tooth brushing and use of tooth pastes is lacking among the participants. The tooth brushing has to start when the first teeth erupts. Use of a "smear" of fluoride toothpaste for children younger than 2 years and a pea-sized amount for children from 2 to 6 years of age is recommended (21).

It is important for children to have regular check up with the dentists. American Association of Pediatric Dentistry (AAPD) recommends that the first examination at the time of the eruption of the first tooth and no later than 12 months of age (22). In a study done by Meera et al (23) shows that 59.08% of children reporting

for first dental visit were between 6 and 12 years. Early detection and management of caries/oral conditions can improve a child's oral and general health, well-being, and school readiness. It also reduces the number and cost of dental procedures among high-risk children. Sooner a child is seen by a dentist, the less treatment needs they are likely to have in the future (24). This can be done by integrating preventive oral healthcare with the vaccination visits of the child to the public health centres and first visit to dentist. Delayed diagnosis of dental disease can result in exacerbated problems in future with expensive treatment plans.

The study shows that the ASHA workers has a good attitude towards providing dental advice to the community. The study shows that most of them do not check children for any discolouration or white spot lesions. "Lift the Lip" can be an oral health screening tool used to detect the early signs of dental diseases (25) "Lift the Lip" is a visual and nontactile method by raising the lip and perform a visual examination of the teeth to check for dental caries wherein any health care worker can identify the dental conditions and inform the parents to treat it before it becomes serious. It has been utilized in a number of national health and nutrition evaluation survey process. By doing this procedure the morbidity associated with ECC can be reduced to large extend (26).

The country currently has about 10 lakh ASHAs in 35 States and UTs making it the world's largest community volunteer programme (27). Therefore utilisation of grass roots level Asha workers to provide basic knowledge of Oral health and diseases in rural India can transform the oral health of the community in general. Studies have shown that oral health education targeting parents, especially mothers, can help in the prevention of ECC (28). Khanna SR (29) in a significant study assessed the impact of oral health training imparted to Anganwadi and accredited social health activist (ASHA) workers on improving the oral hygiene of children aged 1-6 years and found that there was a significant improvement in toothbrushing practices. The involvement of ASHA workers can have a significant role in reducing the incidence of Early Childhood caries in India(30)

Drawbacks of the study: This study was conducted on ASHA workers in only one district in Kerala state, the knowledge and the attitude of the ASHA workers may vary in other geographical areas depending on their education and social environment. Studies involving rural health-care delivery systems from different parts of the country should be carried out to get a complete picture on the existing scenario and to formulate appropriate measures to bridge the gaps in their training.

CONCLUSION

The present study shows that ASHA workers has a good attitude towards child oral health care but lack knowledge regarding the ECC prevention protocols such as first dental visit, tooth brushing and use of tooth paste in children. As part of National Oral Health mission, more workshops has to be conducted for ASHA's to improve their knowledge and also the educational resources has to be updated. This can transform the oral health care for achieving the goals of Ayushman Bharat programme.

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Conflicts of interest

There are no conflicts of interest

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