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Oral Hygiene – Knowledge, Attitude and Practice among the Health Worker (ANM/ASHA) of Kamrup (Metro) District in North East Region of India

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Abstract

Background and aim: Oral health is an integral part of the general health and wellbeing of an individual to maintain the quality of life. As there is no valid and reliable instrument for identifying the Knowledge, Attitude and Practice (KAP) among the grass root level health workers (ANM/ASHA) in the field of oral hygiene. Therefore an instrument has been designed to identify their concerns i.e., KAP. So that their KAP on oral health awareness could be updated through different training programs and thereby we can achieve the aim to assess the oral hygiene awareness and practice among the ANM/ASHA to provide insight into educational programs.

Design and methods: A cross sectional survey was carried out to assess the KAP among the health workers (ANM/ASHA) through self-constructed, 28-items and a close-ended questionnaire. The questionnaire was pilot tested on 34-ANM to identify its internal consistency and the reliability for the different subscales (KAP). After the questionnaire is pilot tested on ANM, then it was again tested on 172-ASHA of the pre-selected zones.

Results: The entire questionnaire was developed and evaluated by using Cronbach's alpha (α) and found to be 0.719. This indicates a high level of internal consistency (α>0.71). Since the internal consistency of subscale items is<0.70, it needs to be further evaluation and development of questionnaire with respect to subscale. In this study it was found that there is a lack of knowledge on oral health awareness among the primary health care provider (ANM/ASHA). Hence there is a need to educate and spread knowledge of proper dental care and to prevent dental disease through motivation, training and education for the health workers to make a healthy individual and healthy society.

Introduction

Oral diseases are a major public health concern owing to their high prevalence and their effects on the individual's quality of life [1]. Oral health attitude and beliefs are significant for oral health behavior [2]. One of the most important factors that decide the dental health of a population is the outlook of its people toward their dentition [3]. Oral health knowledge is considered to be an essential prerequisite for health related behavior [4,5]. Keeping a healthy oral profile requires joint efforts from the dentist as well as the patient himself.

The majority of the people in India from the low socioeconomic strata of society have never visited dentist or been for a dental check-up. This is primarily because of economic constraints, insufficient awareness and low literacy rates. Poor oral health can cause discomfort, pain, disability and diminish the quality of life. Sometimes it even contributes to systemic diseases like diabetes, cardiovascular and lung disease. Community based oral health and hygiene can be improved and various oral/dental diseases can be prevented by creating awareness among the public which can be carried out by grass root level health workers (ANM/ASHA). Such workers who are the connecting link between the public and health care delivery system should possess minimum knowledge regarding oral health and hygiene. While education should be promoted, especially in high-risk communities and population groups (low-income families and native population), it should be carried out by the trained grass root level health workers. Therefore a study is carried out to assess the training need through KAP study regarding oral hygiene. According to the literature, no study has been done to assess the oral hygiene awareness and practice in North East Region (NER) of India till now. Kamrup (Metro) District is being the largest city in the state of Assam with an area of 1,527.84 square km and population of 1,260,419 (census 2011) [6]. Keeping in this view, Central Council for Research in Homoeopathy (CCRH), autonomous bodies under Ministry of AYUSH, Govt. of India has planned to

conduct a pilot study on 'Health promotion during Dentition' under Capital and Dhirenpara zone of Kamrup (Metro) District of Assam in North East Region (NER) with a target age group (6 month–36 month) of 28885.

The program has been implemented through ANM/ASHA worker of the concerned zone for the age group (6 month–36 month) of children. Before implementing the program an instrument has been designed and tested to identify the Knowledge, Attitude and Practice (KAP) amongst the ANM/ASHA through a close-ended questionnaire.

Aims of the Survey

1. To develop an instrument for assessing the KAP for oral hygiene among the grass root level health worker.

2. To assess the need of training among the ANM/ASHA in Kamrup (Metro) District of Assam regarding the oral hygiene awareness and practice.

3. To evaluate the effectiveness of the training programs to be organized by CCRH professionals for grass root level health workers.

Materials and Methods

An institutional cross sectional survey was carried out to assess

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the Knowledge, Attitude and Practice among the health workers (ANM/ASHA) of two adopted zones (Capital and Dhirenpara) of Kamrup (Metro) District of Assam in North East Region (NER). A self-constructed, 28-item, close-ended questionnaire having four options (A-D) was translated into regional Assamese version using a standardized forward-backward translation process which was conducted independently by two translators. Then the questionnaire was further pre-tested on a small group of study population which consists of 34-ANM, then it was further analyzed, interpreted and finally the questionnaire has been modified after pretesting. The reliability of the questionnaire has been tested by adopting the methods of Cronbach's Alpha test.

The duration of the study spanned over a period of one month from January 2014 to February 2014. A specially designed questionnaire consisting of three sections was used, these consisted of firstly questions based on the dental knowledge which included ten questions, secondly section based on the attitude of dental health, which included five questions and the last section was based on practice of oral hygiene which comprised of thirteen questions. All the 230- health workers (ANM/ASHA) were approached personally, 24-refused; finally 206 had given their written consent for participation. So final sample size was 206 (ANM-34 and ASHA-172) (n=206) who submitted their completed questionnaires in sealed envelope, hence the response rate was 89.56%.

Total 206-health workers (ANM-34 and ASHA-172) were explained the purpose of the study along with handing over of the questionnaire. The questionnaire took about 30 min. to complete. Instructions on the questionnaire promised anonymity. No identifiable information was required, thus protecting participant privacy. The completed questionnaires were concealed inside opaque envelopes, which were sealed at the survey site by participants themselves. It was also mentioned that responses would remain confidential. All survey forms were collected by the Research Associates and were sent for data analysis. All the subjects were interviewed in the premises of Regional Research Institute for Homoeopathy, Guwahati, Assam. The interviews were conducted in regional language Assamese, as it was the medium of instruction.

All demographic data and the quantitative data obtained via the questionnaires were analyzed by SPSS (Statistical package for social sciences) Windows version 20. Frequencies and cross-tabulations were performed. The reliability of the qualitative data analysis was enhanced by the independent investigation of the responses by a team approach. The team comprised of one Research Associates (H), two paramedical staff (Lab Technician), four field workers (MPHW) and two Data Entry Operator (DEO) took part of the evaluation. From this, level of agreement was assessed. Pearson's chi-square test was used to find the statistical significance among the health workers (ANM/ASHA) for their responses based on dental knowledge, attitude and practice on systemic conditions related to oral health.

Study Sample and Sampling Technique

The sampling method employed in this survey is convenient sampling. Health workers (ANM-34 and ASHA-172); (n=206) belonging to the two adopted zones (i.e., Capital and Dhirenpara) of Kamrup (Metro) District, Assam were selected.

Ethical clearance

This proposed study was reviewed by the Institutional ethical committee and informed consent was taken from each participant.

Pilot testing of questionnaire

The questionnaire was tested among 34-ANM and the reliability for the different subscales (such as knowledge, attitude and practice) for the questionnaire was evaluated by using Cronbach's alpha, and the results are shown (Tables 1 and 2). The criteria of Cronbach's alpha for establishing the internal consistency reliability: Excellent ($\alpha > 0.9$), Good ($0.7 < \alpha < 0.9$), Acceptable ($0.6 < \alpha < 0.7$), Poor ($0.5 < \alpha < 0.6$), Unacceptable ($\alpha < 0.5$) [7]. It considered that the Cronbach's alpha value for entire questionnaire was found to be 0.719. This indicates a high level of internal consistency for our scale with this specific sample [8]. Since the internal consistency of subscale items is<0.70, it is suggested that the scale is used in totality and individual subscales are not used until the scale is further developed and the internal consistency of subscale items increases [9]. The scale used in the study is in the process of development. This is the first survey study conducted using this questionnaire. More studies of similar nature are required to develop the scale fully.

As the questionnaire was found to be reliable after testing it upon 34-ANM for the entire questionnaire, the same was used for evaluating 172-ASHA of the preselected zones. The demographic data related to the above two professions are shown (Figure 1) and the evaluation of questionnaire was shown (Figure 2) [10].

All the 28 questions were individually stratified based on designation (ANM/ASHA). As per their response in terms of correct and incorrect answer the observed verses expected values were tested with K-way and higher-order effects using the Chi-Square test. There was a significant difference of response among the profession which is shown (Table 3).

Discussion

Oral health is an essential for one's overall wellness and it is an integral part of one's physical, social and mental wellbeing. Majority of the people are unaware about the relationship between oral hygiene and systemic diseases. Many diseases show their first appearance through oral signs and symptoms and they remain unchanged or untreated because of the lack of Knowledge, Attitude and Practice (KAP) on oral hygiene. Health workers could play a pivotal role in public health awareness. As a health worker, it is their responsibility to educate and

S. No.	Sub-scale	No. of items (N)	Cronbach's α	Cronbach's α based on Standardize d items	ICC Avg.	95%CI LB	95%CI UB	F test with True value 0 Value	df1	df2	p value
1	K	10	0.584	0.544	0.584	0.340	0.765	2.406	33	297	0.000
2	A	5	0.234	0.254	0.234	-0.265	0.576	1.306	33	132	0.148
3	P	13	0.285	0.098	0.285	-0.126	0.593	1.399	33	396	.075
4	KAP	28	0.719	0.673	0.719	0.563	0.839	3.556	33	891	0.000

K: Knowledge; A: Attitude; P: Practice; ICC: Intra Class Correlation; CI: Confidence interval

Table 1: Reliability statistics for subscales (KAP).

motivate the peoples to visit a dentist to acquire basic dental knowledge [11-14]. In this context, an Institutional cross sectional survey was carried out to assess the knowledge, attitude and practice (KAP) among the health workers (ANM/ASHA) of two selected zones (Capital and Dhirenpara) of Kamrup (Metro) District, Assam through a self-constructed, 28-item, close-ended questionnaire. Out of ten nos. of

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.719	0.673	28

Table 2: Reliability statistics.

K		df	Likelihood Ratio		Pearson	
			Chi-Square	Sig.	Chi-Square	Sig.
K-way and Higher Order Effectsa	1	111	3891.912	0.000	4027.650	.000
	2	82	936.976	0.000	882.457	.000
	3	27	22.542	0.709	21.827	.746
K-way Effectsb	1	29	2954.936	0.000	3145.193	.000
	2	55	914.435	0.000	860.630	.000
	3	27	22.542	0.709	21.827	.746

Table 3: K-way and higher-order effects.

dental knowledge related questionnaire, 1049 (50.92%) responses were incorrect which shows that lack of knowledge on oral health awareness. Out of five questionnaires from attitude, 758 (73.59%) responses were wrong. Though 49.08% having some knowledge on oral hygiene but 73.59 % have no attitude for maintaining oral health and hygiene. It also showed that, out of rest thirteen questionnaires belong to practice, 1503 (56.12%) responses were negative. It shows that more than 50% of health workers were not even practicing good oral hygiene. In the present study, out of 206 of health workers (ANM/ASHA) 133 (64.6%) of them have no knowledge to visit a dentist at least once in six months. 156 (75.7%) of health workers did not know the use of dental floss/rinse in maintaining good oral health. 32 (15.5%) were only maintaining good oral health. It was also found that only 29 (14%) ANM/ASHA have visited dentist for their routine oral health checkup. 111 (53.8%) do not take their oral health problem so seriously. 22 (10.67%) have opined that tobacco or betel nut chewing benefits their oral health. 135 (65.5%) of ANM/ASHA didn't know how to do brushing.

The study suggests that there are some definite gaps in KAP among the health workers (ANM/ASHA) of the selected zone and which the clear indication of lack of awareness is. This is confirmed as the health workers could not describe oral health (84.5%), didn't visit dentist (85.9%) and used addictives (79.1%) in the present study [15-17].

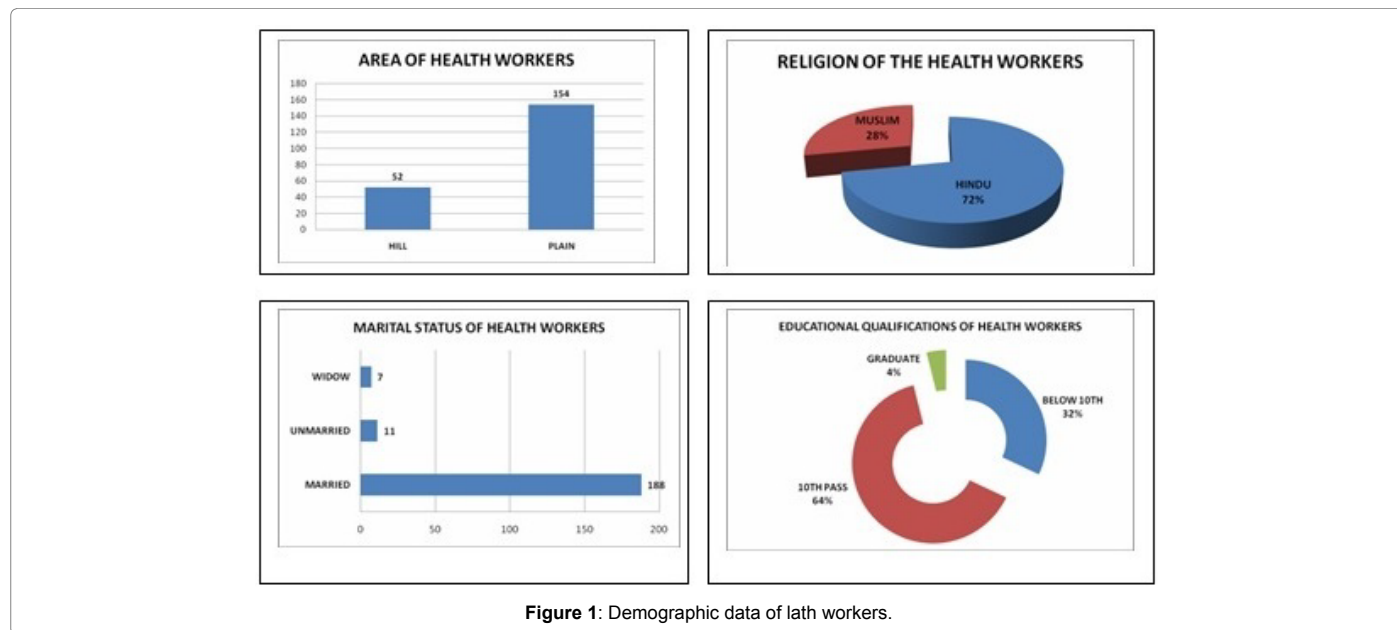This type of study was conducted for the first time in North East

Figure 1: Demographic data of lath workers.
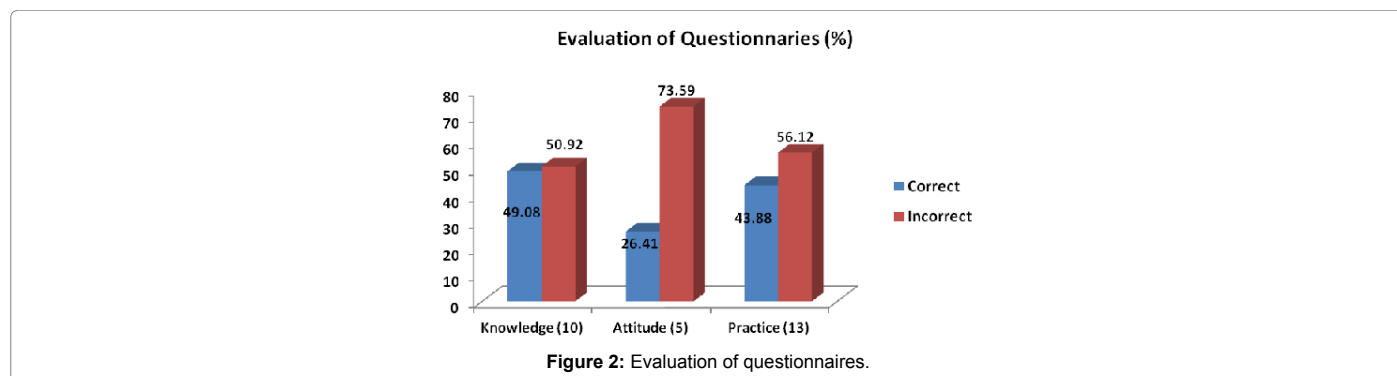
Figure 2: Evaluation of questionnaires.

Questions	KAP	A	B	C	D	Frequency of correct answer	%	Frequency of incorrect answer	%
Q1. What should be ideally used for cleaning teeth	K	11	153	40	2	153	74.3	53	25.7
Q2. How many times should you brush teeth in a day	K	5	154	45	2	154	74.8	52	25.2
Q3. When should you brush your teeth	K	21	4	176	5	176	85.4	30	14.6
Q4. What kind of brush should you Use	K	95	107	2	2	95	46.1	111	53.9
Q5. How often should one use dental floss/ rinse	K	50	80	19	57	50	24.3	156	75.7
Q6. How often one should go for dental scaling	K	58	87	22	39	87	40.2	119	57.8
Q13. How much do you think dental problem can affect your general health	K	119	57	8	22	119	57.8	87	42.2
Q14. How often should one visit a dentist	K	29	73	93	11	73	35.4	133	64.6
Q15. How would you describe your oral health	K	32	131	22	21	32	15.5	174	84.5
Q23. How often did you have teeth or gum problem in last one year	K	15	74	72	45	72	35	134	65
Knowledge(10)	-	-	-	-	-	1011	49.08	1049	50.92
Q21. Why did you last visited a dentist	A	29	57	6	114	29	14.1	177	85.9
Q22. What was the reason that you couldn't go for dental treatment that was needed	A	18	17	111	60	60	29.1	146	70.9
Q24. How often you had treatment for gum disease like dental scaling in last one year	A	15	28	136	27	28	13.6	178	86.4
Q26. Do you think Tobacco or betel nut chewing benefits your oral health	A	22	44	82	58	82	39.8	124	60.2
Q27. Did any oral health professional ever suggested you about benefit of giving up your addiction	A	58	73	36	39	73	35.4	133	64.6
Attitude(5)						272	26.41	758	73.59
Q7. How do you brush your teeth	P	61	71	71	3	71	34.5	135	65.5
Q8. How often do you clean your Teeth	P	19	161	25	1	161	78.2	45	21.8
Q9. Do your toothpaste contain Fluoride	P	118	4	18	66	118	57.3	88	42.7
Q10. How often do you change your Brush	P	45	116	9	36	116	56.3	90	43.7
Q11. How much toothpaste do you use for brushing	P	92	93	17	4	93	45.1	113	54.9
Q12. How often do you take addictive's like tobacco or betel nut	P	9	36	118	43	43	20.9	163	79.1
Q16. Do you have cavities in your Teeth	P	43	64	78	21	78	37.9	128	62.1
Q17. Do you have bleeding gums	P	19	73	102	12	102	49.5	104	50.5

Q18. Do you have bad breath in mouth	P	7	78	70	51	70	34	136	66
Q19. Do you have tartar deposits in Teeth	P	9	97	52	48	52	25.2	154	74.8
Q20. How often did you visit a dentist during last one year	P	60	12	126	8	60	29.1	146	70.9
Q25. How often in last one year dental problem hampered your job/work	P	9	63	26	108	108	52.4	98	47.6
Q28. How do you clean your tongue	P	42	103	56	5	103	50	103	50
Practice (13)	-	-	-	-	-	1175	43.88	1503	56.12

Table 4: The results of the response to the questionnaires after applying it to the 34-ANM and 172-ASHA are shown.

Region (NER) of India on this specific cohort but further studies on different cohorts, on larger samples, and in different geographic areas are needed to identify the gap of KAP. Conducting similar studies a few years later may also prove fruitful to assess the effectiveness of training/education programs. Preventive oral health education is in transitional stage in India. Population based oral health community programs are yet to be implemented for primary health care provider (ANM/ASHA).

Statistical Analysis

The data was first transferred to Microsoft Excel and then the results were analyzed by using IBM SPSS software (v. 20.0). Associations between discreet variables were tested by Chi-square test. In all the cases, $p < 0.05$ was considered significant. The demographic details of the respondents were expressed in frequency and percentage (Figure 1). The evaluation of questionnaire was shown (Figure 2). Internal consistency was calculated using Cronbach's coefficient alpha (α) for the three domains (KAP) and total score (Table 4). Intra-class coefficients for each item and total score were estimated (Table 3).

Reliability

The Cronbach's alpha for three parameter (KAP) and their internal consistency along with reliability shown (Tables 1 and 2) respectively. According to the rule of thumb [7]. Cronbach's alpha ($\alpha=0.71$, $p<0.001$) was acceptable for the questionnaire.

Conclusion and Recommendations

The present study shows that there is need for updating the knowledge of oral health awareness among primary health care provider (ANM/ASHA/AWC) through training/education programs. Moreover, majority of them were not aware of the fact that improper maintenance of oral health may contribute to systemic diseases.

Hence, there is a need to educate and spread knowledge of proper dental care and prevention of dental diseases through training and education for the health workers, outreach programs and relevant public health awareness measures to make a healthy individual and a healthy society.

Although dental health education is a relatively new discipline within dentistry, it is suggested that this education should start at an early stage in life, be delivered by trained personnel and be carefully integrated in general health through homoeopathy system of medicine. Further evaluation of such training program may be ascertained through testing and retesting.

Author Contributions

The author is wholly developed the concept, design, literature search, data interpretation, statistical analysis, manuscript preparation and also edited and reviewed.

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