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ASSESSMENT OF KNOWLEDGE, AWARENESS AND ATTITUDE AMONG YOUNG, MIDDLE AND OLDER AGED ADULT POPULATION OF RURAL UTTAR PRADESH TOWARDS PERIODONTAL HEALTH- A QUESTIONNAIRE SURVEY

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Abstract

The poor oral and dental hygiene has been a big social unconcerned issue that should have been acknowledged because the oral health awareness, behavior, and practices are necessary to maintain oral and systemic health both. The current study goal was to determine the knowledge, awareness and attitude among young, middle and older aged adult population of rural Uttar Pradesh towards periodontal health and periodontal care. Total 500 participants are taken in the study. A questionnaire Performa was given to the study participants which have total 22 questions to evaluate their knowledge, perception and attitude towards their oral and periodontal care habits, its various kind of management both non-surgical and surgical therapy and methods to improve knowledge.

Peoples have poor knowledge and awareness towards oral and periodontal hygiene and habits. To promote periodontal health among the general public, there is a need to inform and create knowledge of the many periodontal treatment modalities

Keywords: Awareness, Attitude, Knowledge and periodontal health

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Introduction

The most important diagnostic marker to assess general health status of an individual [1] that depends on biological, environmental, psychological, and social well-being of an individual is the oral health state [2]. Lack of oral hygiene and less patient compliance results in periodontal bone loss and tooth mobility [3]. A significant public health problem that is widely common and increases the burden of chronic disease i.e., periodontal disease worldwide [4].

Periodontitis is considered as one major threatening condition to oral and periodontal health [5]. It is widely spread, highly prevalent, chronic, infectious disease of periodontium that have multiple etiologic factors [6]. About 800 species of microbes are present in the oral environment. The interaction between those microbes and host immune system in dental plaque is a key factor in the development and clinical symptoms of periodontal disease [7]. About 20-50% population suffers from periodontitis globally. In India, the prevalence rate of periodontitis was 51% overall, it was 46.6%, 26.2% and 19% for gingivitis, mild to moderate periodontitis and severe periodontitis respectively [8]. As the age increased, the prevalence and severity of periodontitis are increased [9-10]. Patients who are well informed tend to adhere to oral health care regimens more consistently [9-11].

In light of this need, a cross-sectional survey using a questionnaire was conducted in an effort to better understand patient beliefs, awareness levels, and potential ways to strengthen the relationship between patients and periodontists.

This survey aims to assess the awareness, perception and attitude regarding periodontal disease and periodontal care among young-aged, middle-aged and older-aged adult group of rural population of Uttar Pradesh.

Materials and methods

The present questionnaire survey was conducted among rural population who visited

Community Dental Health Camps, organized by Rama Dental College Hospital and Research Centre, Kanpur. Ethical clearance was given by institutional ethical committee. These camps were conducted in Kanpur city. Convenient sampling method was used. The study comprised a total of 500 subjects, 250 of them were male and 250 females. Participants were categorized by age into young-aged adult group (ages 18-35 yrs) and middle-aged adult group (ages 36-55 yrs) and older-aged adult group (aged older than 55 years) [16]. The total subjects, participated in survey, were recorded and allocated in each group according to their age and gender. Informed consent was obtained from all participants.

Inclusion criteria

- Age should be ≥ 18 yrs.
- Systemically healthy patients.
- Subjects with at least > 10 natural teeth present in oral cavity.

Exclusion criteria

- Uncooperative patients.
- Mentally retarded patients.
- Subjects having parafunctional habits.

The questionnaire proforma was provided in both Hindi and English language, consisting of brief case history along with 28 questions which was given to the participants and the purpose of the study was explained.

Data was analyzed using the software MS Office Excel software & SPSS 23 for Windows. The Association among categorical variables was calculated by chi-square test.

Results and discussion

In the present cross-sectional study, a uniform distribution of the three age groups i.e., young-aged 18-35 yrs., middle-aged 36-55 yrs. and older-aged adult > 55 yrs. were present among the all subjects with 33.6%, 33.4% and 33% proportion respectively. In Total 500 subjects, 250 males and 250 females were selected as shown in Table 1.

Table 1: Distribution of Subjects according to Age and Sex

Variable		No.	%
Age	Young Adults (18–35yrs)	168	33.6
	Middle-Aged Adults (36–55 Years)	167	33.4
	Older Adults (Older Than 55 Years)	165	33.0
Sex	Male	250	50.0
	Female	250	50.0

Table 2 revealed that the significant association of oral hygiene behavior in young aged adults followed by middle aged and older age adult.

Table 2: Association of Oral Hygiene Behavior with Age

Variable		Young Adults (18–35yrs) N=168		Middle-Aged Adults (36–55 Years) N=167		Older Adults (Older Than 55 Years) N=165		chi sq	p-value
		No.	%	No.	%	No.	%		
OH1: Brush teeth	Once daily	144	85.7%	159	95.8%	162	98.2%	23.02	<0.001
	Twice daily	24	14.3%	7	4.2%	3	1.8%		
OH2: materials use to clean the teeth	Neem stick	25	14.9%	48	28.7%	108	65.5%	157.16	<0.001
	Tooth brush and tooth paste	141	83.9%	115	68.9%	33	20.0%		
	Mango leaves	0	0.0%	1	.6%	5	3.0%		
	Charcoal	2	1.2%	3	1.8%	19	11.5%		

Table 3 showed that significant association of knowledge about periodontal disease in younger age group followed by middle and older age.

Table 3: Association of knowledge and awareness towards periodontal disease with Age

Variable		Young Adults (18–35yrs) N=168		Middle-Aged Adults (36–55 Years) N=167		Older Adults (Older Than 55 Years) N=165		chi sq	p-value
		No.	%	No.	%	No.	%		
KA1 :Infection of gums	Disease of tooth	31	18.5%	10	6.0%	8	4.8%	285.23	<0.001
	Swelling in mouth	55	32.7%	84	50.3%	10	6.1%		

	Infection of bone and gums around teeth	75	44.6%	22	13.2%	8	4.8%		
	Don't know	7	4.2%	51	30.5%	139	84.2%		
KA2 :Tartar/calculus deposition	Just thickening of tooth structure	22	13.1%	33	19.8%	48	29.1%	75.24	<0.001
	Accumulation of soft food debris on teeth	24	14.3%	38	22.8%	40	24.2%		
	Accumulation of hard deposit on tooth surface	110	65.5%	56	33.5%	36	21.8%		
	Don't know	12	7.1%	40	24.0%	41	24.8%		
KA3 :Hard deposits on teeth effect	Bad breath	64	38.1%	55	32.9%	30	18.2%	98.09	<0.001
	Swelling & bleeding in gums	31	18.5%	80	47.9%	115	69.7%		
	Receding gums	28	16.7%	16	9.6%	7	4.2%		
	Don't know	45	26.8%	16	9.6%	13	7.9%		
KA4 :Gum disease and pyorrhea cause	Oral hygiene negligence	40	23.8%	20	12.0%	14	8.5%	64.30	<0.001
	Accumulation of plaque and tartar	57	33.9%	27	16.2%	15	9.1%		
	All above	71	42.3%	120	71.9%	136	82.4%		
KA5 :Pyorrhea effect	Bleeding gums & Bone loss around tooth	105	62.5%	74	44.3%	103	62.4%	61.28	<0.001
	Receding gingiva	9	5.4%	4	2.4%	6	3.6%		
	Tooth mobility	50	29.8%	88	52.7%	35	21.2%		
	Don't know	4	2.4%	1	.6%	21	12.7%		
KA6 :Bad breath cause	Accumulation of food	125	74.4%	89	53.3%	69	41.8%	106.50	<0.001
	Accumulation of plaque and microorganism around gums	33	19.6%	13	7.8%	4	2.4%		
	Faulty dentures	0	0.0%	2	1.2%	4	2.4%		
	Don't know	10	6.0%	63	37.7%	88	53.3%		

Table 4 the results revealed that the significant association of knowledge and awareness towards periodontal disease treatment in young aged adults followed by middle aged and older age adult.

Table 4: Association of knowledge and awareness towards periodontal disease treatment with Age

Variable		Young Adults (18–35yrs) N=168		Middle-Aged Adults (36–55 Years) N=167		Older Adults (Older Than 55 Years) N=165		chi sq	p-value
		No.	%	No.	%	No.	%		
KA1 : pyorrhea can be treatable	Yes	125	74.4%	84	50.3%	35	21.2%	107.84	<0.001
	No	32	19.0%	45	26.9%	99	60.0%		
	Don't know	11	6.5%	38	22.8%	31	18.8%		
KA2 : Pyorrhea can be treated by	Cleaning of tooth, roots of tooth and surgical treatment	100	59.5%	39	23.4%	8	4.8%	129.45	<0.001
	Cleaning of roots of tooth	50	29.8%	75	44.9%	107	64.8%		
	By placing bone grafts	10	6.0%	34	20.4%	30	18.2%		
	Don't know	8	4.8%	19	11.4%	20	12.1%		
KA3 : Gingival growth can be treated by	Drugs	69	41.1%	102	61.1%	104	63.0%	67.01	<0.001
	Scaling	45	26.8%	46	27.5%	59	35.8%		
	Surgical removal	54	32.1%	19	11.4%	2	1.2%		
KA4 : bone around the tooth can be regenerated	Yes	63	37.5%	38	22.8%	22	13.3%	26.81	<0.001
	No	85	50.6%	103	61.7%	113	68.5%		
	Don't know	20	11.9%	26	15.6%	30	18.2%		
KA5 : receding gums can be treated	Yes	95	56.5%	37	22.2%	18	10.9%	94.07	<0.001
	No	47	28.0%	90	53.9%	113	68.5%		
	Don't know	26	15.5%	40	24.0%	34	20.6%		
KA6 : LASER can also be used for periodontal surgery	Yes	112	66.7%	37	22.2%	17	10.3%	137.40	<0.001
	No	47	28.0%	90	53.9%	114	69.1%		
	Don't know	9	5.4%	40	24.0%	34	20.6%		

Table 5 showed that significant association of knowledge. In table 5 the results revealed that the significant association of Attitude towards non-surgical and surgical treatment of periodontal disease in young aged adults followed by middle aged and older age adult.

Table 5: Association of attitude towards non-surgical and surgical treatment of periodontal disease with Age

Variable		Young Adults (18–35yrs) N=168		Middle-Aged Adults (36–55 Years) N=167		Older Adults (Older Than 55 Years) N=165		chi sq	p-value
		No.	%	No.	%	No.	%		
A1 :need to visit the dentist for bleeding gums	Yes	145	86.3%	86	51.5%	16	9.7%	211.16	<0.001
	No	14	8.3%	45	26.9%	115	69.7%		
	Don't know	9	5.4%	36	21.6%	34	20.6%		
A2 :cleaning of tooth causes loss of enamel	Yes	51	30.4%	126	75.4%	125	75.8%	122.00	<0.001
	No	102	60.7%	26	15.6%	20	12.1%		
	Don't know	15	8.9%	15	9.0%	20	12.1%		
A3 :professional teeth cleaning is necessary to prevent gum diseases	Yes	110	65.5%	87	52.1%	80	48.5%	11.01	0.026
	No	45	26.8%	61	36.5%	67	40.6%		
	Don't know	13	7.7%	19	11.4%	18	10.9%		
A4 :cleaning of root along with teeth is beneficial to treat pyorrhea	Yes	23	13.7%	2	1.2%	3	1.8%	33.03	<0.001
	No	21	12.5%	18	10.8%	16	9.7%		
	Don't know	124	73.8%	147	88.0%	146	88.5%		
A5 :gum surgeries are painful and complicated	Yes	42	25.0%	52	31.1%	66	40.0%	20.49	<0.001
	No	21	12.5%	10	6.0%	3	1.8%		
	Don't know	105	62.5%	105	62.9%	96	58.2%		
A6 :Periodontal treatment is cost effective	Yes	7	4.2%	7	4.2%	12	7.3%	8.21	0.084
	No	7	4.2%	2	1.2%	1	.6%		
	Don't know	154	91.7%	158	94.6%	152	92.1%		

Table 6 revealed that most of the subjects who find source as dental camp to improve knowledge about gum disease were young adults (63.1%). In M1 question revealed the significant association of source to improve knowledge about gum disease was found with age of subjects ($p < 0.001$). In M2 question the result revealed no significant association of age was found with responsible factor to prevent gum disease ($p = 0.086$).

Table 6: Association of Methods to improve knowledge with Age

Variable		Young Adults (18–35yrs) N=168		Middle-Aged Adults (36–55 Years) N=167		Older Adults (Older Than 55 Years) N=165		chi sq	p-value
		No.	%	No.	%	No.	%		
M1 : Improve knowledge about gum disease	Through dental camps	106	63.1%	69	41.3%	51	30.9%	100.73	<0.001
	Through advertisements in television	26	15.5%	12	7.2%	12	7.3%		
	Through anganwadi workers	25	14.9%	72	43.1%	45	27.3%		
	Through doctors and nurses	11	6.5%	14	8.4%	57	34.5%		
M2 : Preventing gum disease is the responsibility of	Government of India	130	77.4%	122	73.1%	118	71.5%	11.08	0.086
	Dentists	13	7.7%	8	4.8%	9	5.5%		
	Sharing of responsibility between dentist and patient	22	13.1%	25	15.0%	33	20.0%		
	Tooth paste manufacturing companies	3	1.8%	12	7.2%	5	3.0%		

Results reveals that Knowledge and Awareness on periodontal disease & periodontal care were found to be poor in both middle and older aged adult but it was found to be very poor in older aged adults. Difference between attitude towards periodontal care among different age groups was statistically significant ($P < 0.001$). People often take their dental health for granted, particularly when it comes to disorders like periodontal disease that develops slowly. However, periodontal disease poses a serious public health issue that adversely affects people's oral and overall health as well as their quality of life.

Therefore, there is a need for the general population to gain a better awareness of the etiopathogenesis and risk factors related to periodontal disease and numerous practices

and attitudes that helps in the prevention of the condition.

In our study, we found a deficiency in knowledge and awareness about periodontal health and their treatment in all aspect in study population. Results are in favor with the study done by Deinzer et al. in 2009 [12]. They evaluated knowledge related to on a periodontal disease and oral hygiene habits on targeted population and observed the extreme low level of understanding regarding to knowledge in relation to periodontal disease and its prevention. They also didn't find any particular relation between age and education of individuals and their periodontal awareness, however young -aged and older- aged individuals have more deficits.

In a systemic review and meta-analysis done by Janakiram et al. in 2020 [13] included the

national oral health survey 2002 [14] used the WHO methodology to estimate the burden of periodontal disease which showed older age groups of adults had the highest frequency of periodontitis. Prevalence and severity of periodontal disease increases with age in Indian population. Our study is also in accordance with these studies[15-17]which suggested that the older age group of adults had the highest rate of periodontal diseases.

The rural residents with vast majority were unaware towards periodontal disease. Petersen et al [18] in 1997 reported that 82% of the study participants were unaware of the diseases of tooth and how to maintain their oral hygiene. Our study found that 93.2% of subjects brushing their teeth single time in a day and 6.8% of subjects twice a day which is consistent with the study [19]that stated 0.44% of participants do brushing about two times in a day. Finding of present study also revealed the necessity to increase knowledge & awareness towards periodontal health which is consistent with study performed by Anu Chandran et al 2020 [20]. They reported very poor awareness towards oral and periodontal care in their study population with deficit knowledge about various treatment options available related to periodontal management. Since all the evidence to the contrary, oral and periodontal health awareness level were far less than satisfactory, today is an immediate requirement to improve knowledge of available periodontal therapy for treating various periodontal condition like swollen and receding gums, halitosis, periodontal pocket and tooth mobility among the general population which boost their oral and periodontal care.

Conclusion

We found that the rural population have poor awareness regarding oral, periodontal health and care. As a periodontal surgeon it is our responsibility to not only provide periodontal treatment but also to nourishes the knowledge and awareness of subjects toward periodontal health and care that could help to change their attitude toward periodontal wellness. This lack of awareness may be one of the factors preventing individuals from frequently seeking periodontal therapy unless they have acute symptoms. We felt during study it should be a

sharing responsibility of both dentist and patients to prevent the periodontal disease therefore we emphasized the need of organizing dental camps at larger scale in rural area to aware the patients about the periodontal care.

References

1. Nagaland T, Kadanakuppe S, Raju R. Adolescent's oral health: A review. *International Journal of Health Sciences and Research*. 2016(6(9)):420- 25.
2. Axelsson P, Lindhe J, Nyström B. On the prevention of caries and periodontal disease. Results of a 15-year longitudinal study in adults. *Journal of Clinical Periodontology*. 1991;18(7):182-85.
3. Laddha R. Periodontal Infectogenomics: a review. *International Journal of Dental Medical Research*. 2015(1(6)):189-92.
4. Benjamin RM. Oral health: The silent epidemic. *Public Health Reports*. 2010(125):158-9.
5. National Oral Health Survey and Fluoride Mapping (2002- 2003), Dental Council of India, New Delhi, 2004.
6. Sathyamurthy P, Padhye A, Gupta HS. Knowledge of diagnosis, treatment strategies, and opinions on periodontal treatment procedures among general dentists in an Indian urban population: a questionnaire survey. *Journal of Public Health Dentistry*. 2018(16):62-72.
7. Tonetti MS, Jepsen S, Jin L, Otomo C J. Impact of the global burden of periodontal diseases on health, nutrition and wellbeing of mankind: a call for global action. *Journal of Clinical Periodontology*. 2017(44(5)):456-462.
8. Khan SA, Dawani N, Bilal S. Perceptions and myths regarding oral health care amongst strata of low socio-economic community in Karachi, Pakistan. *Journal of Pakistan Medical Association*. 2012(62(11)):1198-1206.
9. Dhulipalla R, Marella Y, Keerthana AJ, Pillutla HPD, Chintagunta C, Polepalle T. Awareness of periodontal disease and its management among medical faculty in Guntur district: a questionnaire-based study. *Journal of Indian Society of Periodontology*. 2016(20(5)):525-530.

10. Moeintaghavi A, Mazloomi SS, Ghahraee F. A study on the reasons of noncompliance with tooth brushing in young males in Azadshahr region of Yazd, Iran. *Indian Journal of Dental Education*. 2009(2):107–111.
11. Bhatia A, Bains SK, Singh MP. To assess knowledge and awareness of North Indian population towards periodontal therapy and oral-systemic disease link: a cross-sectional survey. *Journal of Interdisciplinary Dentistry*. 2013(3):79–85
12. Deinzer R, Micheelis W, Granrath N, Hoffmann T. More to learn about: periodontitis related knowledge and its relationship with periodontal health behaviours. *Journal of Clinical Periodontology*. 2009(36): 756–764.
13. Janakiram C, Mehta A, Venkitachalam R. Prevalence of periodontal disease among adults in India: A systematic review and meta-analysis. *Journal of Oral Biology and Craniofacial Research*. 2020; 800–806.
14. Bali RK, Mathur VB, Talwar PP, Channa HB. *National Oral Health Survey & Fluoride Mapping*. New Delhi: Dental Council of India; 2002.
15. Agarwal V, Tuli A, Khattak B, Singh A. Prevalence of chronic periodontitis in Meerut: a cross-sectional survey. *Journal of Indian Society of Periodontology*. 2012(16(4)):529–532.
16. Chandra A, Yadav OP, Narula S, Dutta A. Epidemiology of periodontal diseases in Indian population since last decade. *Journal of International Society of Preventive Community Dentistry*. 2016(6(2)):91–96.
17. Shewale AH. Prevalence of periodontal disease in the general population of India- A systematic review. *Journal of Clinical Diagnostic Research*. 2016(10(6)):ZE04–ZE09.
18. Petersen PE, Copenhagen, Peng B and Wuhan BJT. Oral health status and oral health behaviour of middle-aged and elderly people in PR China. *International Dental Journal*. 1997(6): 47.
19. Hamasha AA, Sasa I, Al-Qudah M. Risk indicators associated with tooth loss in Jordanian adults. *Community Dentistry Oral Epidemiology*. 2000(28(1)):67–72
20. Chandran A, Bhandary R, Shenoy R, Ramesh A, Thomas B. The Extent of Periodontal Awareness and Treatment Modalities among Patients from North Malabar Region. *Journal of Health and Allied Sciences*. 2020(8):67-73.