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ORAL HEALTH KNOWLEDGE, ATTITUDE AND BEHAVIOR AMONG DIFFERENT PROFESSIONAL STUDENTS IN HUBLI-DHARWAD CITY – A CROSS SECTIONAL SURVEY

Dental Science

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ABSTRACT

The most common oral diseases, dental caries and periodontal disease are considered to be behavioral diseases because adoption of healthy oral habits is crucial in controlling them. Oral health habits are measures people learn and practice regularly in order to maintain good oral health or prevent oral disease. With a higher educational background the concept of prevention and well-being could be more easily understood, irrespective of their course of study. Aim: To assess the oral health Knowledge, Attitude and Behavior (KAB) among different professional students in Hubli-Dharwad city. Methodology: A cross sectional survey was conducted among 1200 subjects belonging to eight different professional students of Hubli-Dharwad city using a structured closed ended questionnaire. Results: Oral health knowledge (21.11 ± 1.99), attitude (32.27 ± 2.55) and behavior (27.29 ± 2.24) were high among dental students.

Conclusions: Oral health (KAB) was high among the dental students.

KEYWORDS

behavior, knowledge, oral health, professional

Introduction

In the earlier years of scientific medicine, most clinicians and researchers thought only in terms of single causes, specific agents that cause specific disease. More recent research highlights the relationships between health and behavioral, psychological and social variables. Health and behavior are related in innumerable ways, yet those interactions are neither simple nor straight forward.²

Oral health forms an integral part of the general health and a two way relationship exists between the two. Oral diseases qualify as major public health problems owing to their high prevalence and incidence. The most common oral diseases, dental caries and periodontal diseases are considered to be behavioral diseases because adoption of healthy oral habits is crucial in controlling them.³

Oral health knowledge is considered to be an essential pre requisite for health related behavior, although only a weak association seems to exist between knowledge and behavior in cross sectional studies. Nevertheless, studies have shown that there is an association between increased knowledge and better oral health.⁴

The knowledge, attitude and behavior towards oral health vary differently in different population subgroups. The student population forms a major sub group. In the Indian context, the cream of the student populace opts for professional courses and they constitute an important harbinger of change in our society and they have more than substantial contributions to make towards the future of the country. In India however, the trend of incorporating oral health in the curriculum is yet to be established. If students from different professions were to be potential allies in oral health, it is useful to investigate their level of dental knowledge and oral care practices. Hence the aim of this study was to assess the oral health knowledge, attitude and behaviour (KAB) among different professional students in Hubli-Dharwad city

Materials and methods:

The present study was a cross sectional study conducted among different professional students of Hubli-Dharwad city. The Ethical clearance was obtained from the Institutional Review Board of SDMCDSDH, Dharwad. A pilot study was conducted on eighty samples to calculate the sample size and a total sample size required was found to be 1200. Stratified random sampling procedure was employed to select the study subjects. In Hubli- Dharwad city, there were 52 professional colleges including Medical, Dental, Ayurveda, Nursing, Management studies, Law, Agriculture and Technical fields. From these professional colleges, eight different professional colleges were selected randomly. 150 students from each professional college aged

between 18-24 years were selected randomly. The required official permission for the study was obtained from the principals of the respective professional colleges. Informed consent was obtained from each study subject after explaining the nature of the study.

Data was collected using a self-administered closed ended questionnaire prepared pertaining to the objectives of the study. The questions were pretested for reliability. The split half reliability was found to be 79% which is good. Information regarding demographic variables and oral health knowledge, attitude and behavior were obtained. The data was analyzed using the statistical package STATA-10.0 version. One way ANOVA, and forward stepwise regression analysis was performed to test the difference between groups and to test the predictive variables of KAB. The statistical significance was set at 5% level of significance ($p < 0.05$).

Results

Table 1: Distribution of the study subjects according to Gender and year of study among different professional colleges

Profession	Gender		Year-wise				
	Female n (%)	Male n (%)	I yr n (%)	II yr n (%)	III yr n (%)	IV yr n (%)	V yr n (%)
Dental	107 (71.33)	43 (28.66)	40 (26.66)	40 (26.66)	32 (21.33)	38 (25.33)	
Agriculture	97 (64.66)	53 (35.33)	40 (26.66)	33 (22)	40 (26.66)	37 (24.66)	
Engineering	60 (40)	90 (60)	34 (22.66)	38 (25.33)	40 (26.66)	38 (25.33)	
Medical	85 (56.66)	65 (43.33)	41 (27.33)	40 (26.66)	36 (24)	33 (22)	
Nursing	136 (90.66)	14 (9.33)	40 (26.66)	37 (24.66)	39 (26)	34 (22.66)	
BBA	69 (46)	81 (54)	50 (33.33)	50 (33.33)	50 (33.33)		
Law	52 (34.66)	98 (65.33)	34 (22.67)	30 (20.00)	27 (18.00)	29 (19.33)	30 (20.00)
Ayurveda	89 (59.33)	61 (40.66)	39 (26)	42 (28)	38 (25.33)	31 (20.66)	

Out of 1200 subjects, 150 each belonged to Dental, Agriculture, Engineering, Medical, Nursing, BBA, Law, BAMS professions. Higher percentage of females were seen among nursing subjects

(n=136, 90.66%), followed by dental subjects (n=107, 71.33%) and least percent of females were present among law subjects (n=52, 34.66%). The distribution of male subjects ranged from n=98 (65.33%) among law subjects to a least of n=14 (9.33%) among nursing students. More number of females as compared to males was seen among all the professions except in engineering, law and BBA.

Table 2: Profession-wise distribution and comparison of KAB among different professional students

Profession	Knowledge		Attitude		Behavior	
	Means	S D	Means	S D	Means	S D
Dental	21.11	1.99	32.27	2.55	27.29	2.24
Agriculture	13.96	3.13	31.07	2.81	25.02	2.31
Engineering	13.76	3.92	30.56	3.13	25.75	2.67
MBBS	18.15	2.93	31.37	2.82	26.38	2.01
Nursing	16.77	2.65	31.79	3.13	26.63	2.56
BBA	12.10	3.51	30.89	3.21	25.88	2.52
Law	10.57	3.51	29.40	3.51	25.14	2.78
BAMS	16.45	2.36	31.57	2.52	26.08	2.45
Total	15.36	4.43	31.12	3.08	26.02	2.55
F-value	187.89		12.97		14.12	
P-value	0.0000		0.0000		0.0000	

It was observed that the knowledge scores between the professions ranged from 10.57±3.51 (Law) and 21.11±1.99 (Dental). A statistically significant difference for knowledge scores was observed between the professions for knowledge (F=187.89, p=0.000).

For attitude, the mean scores varied from 29.40±3.51 (Law) to 32.27±2.55 (Dental) and the difference between the professions was statistically significant (F=12.97, p=0.000).

Similarly, the mean scores for behavior were between 25.02±2.31 (Agriculture) and 27.29±2.24 (Dental) and the difference between the groups was statistically significant (F=14.12, p=0.000).

Table 3: Factors predicting the Knowledge, Attitude and Behaviour among different professional students

Profession	Knowledge	Attitude	Behavior
Dental	Year of study (p= 0.000)	Year of study (p=0.000)	Nil
Agriculture	Year of Study (p= 0.044) Parent's occupation (p= 0.047)	Nil	Nil
Medical	Year Of Study (p= 0.0210) Family size (p= 0.0340)	Nil	Nil
Nursing	Year of Study (p= 0.0010) Parent's education (p= 0.0170)	Parent's education (p=0.005)	Year of Study (p=0.0010) Parent's education (p= 0.0270)
BBA	Year of study (p= 0.0040) Parent's education (p= 0.0090)	Nil	Year of study (p= 0.310)
Law	Parent's education (p= 0.0340)	Parent's education (p= 0.020) Family Income (p= 0.0190)	Family Income (p= 0.0280) Family Size (p= 0.0080)
Engineering	Nil	Nil	Nil
Ayurveda	Nil	Nil	Family Size (p= 0.0000)

The forward step wise multiple regression analysis was performed to identify the key factors predicting the knowledge, attitude and behavior of different professional students. This model included 5

variables namely: Year of study, Parent's education, Parent's occupation, Family income and Family size. The regression models with respect to knowledge were found to be significant for the following professions. Dental (F=18.338, p<0.0000). Agriculture (F=2.066, p<0.073), Medical (F=2.066, p<0.0000), Nursing (F=5.383, p<0.0000), BBA (F=6.178, p<0.0000) and Law students (F=4.106, p<0.002). Year of study was found to have a significant positive influence on the knowledge among Dental (p= 0.000), Agriculture (p= 0.044), Medical (p= 0.0210), Nursing (p= 0.0010) and BBA (p= 0.0040). Whereas parent's education had a significant positive influence on the knowledge of Nursing (p= 0.0170), BBA (p= 0.0090) and Law students (p= 0.0340). Parent's occupation was shown to have significant positive impact on the knowledge of Agriculture students (p= 0.047). Whereas family size had a significantly positive impact on the knowledge of the Medical students (p= 0.0340).

The regression models were found significant among Dental (F=16.638, p<0.000), Nursing (F=2.708, p<0.023) and Law (F=4.936, p<0.000) professions with respect to attitude. Year of study had a significant positive impact on attitude among Dental students (p=0.000), whereas parent's education was found to have a significant positive influence on Nursing (p=0.005) and Law students (p= 0.020) and family income had a significant positive influence on Law students (p= 0.0190).

The regression model with respect to behavior was significant among Nursing (F=4.622, p<0.001), BBA (F=2.352, p<0.044), Law (F=2.627, p<0.026) and Ayurveda professions (F=5.577, p<0.000). Year of study was found to have a significant influence on behavior among Nursing (p=0.0010) and BBA students (p= 0.310). Parent's education showed a significant impact on behavior among Nursing students (p= 0.0270). Family income was found to have a significant impact on behavior among Law students (p= 0.0280). Family size was found to have a significant influence on behavior on Law (p= 0.0080) and Ayurveda students (p= 0.0000).

DISCUSSION

Good oral health is essential to improve individual's overall health and well-being. Keeping in mind the expected role to be played by the student community on the behavioral change in the society, knowledge and awareness studies on oral health among students have been conducted among dental and other students with health care backgrounds.⁵ The present study reveals a comprehensive overview of oral health KAB of different professional college students in Hubli-Dharwad city.

Number of females present in this study was more as compared to males similar to study by Peker I, Alkurt MT, 2009.⁶ This may be due to the large number of female students enrolling into the nursing and dental professions.

Similar to previous studies^{7,8,9} female students showed a better oral health KAB than male students, suggesting that this could be due to greater interest in health among women and because of greater social pressure on women to be physically attractive.^{10,11,12}

Even though no proper pattern of knowledge variation with respect to professional years was observed, an increasing level of knowledge was seen with increase in the professional years in Dental, Medical, Nursing and BBA students. This finding is appropriate to health care students because with increase in educational level, they acquire more knowledge about oral health which is a part of their curriculum. Attitude scores showed increasing trend with increasing level of education with only dental students attributing to the increased oral health knowledge that they gain during their course of study which reflects on their attitude. However better behavior was observed with increasing year of professional education among dental, nursing and BBA students which could be related to increasing knowledge. Contrastingly, medical students who had better knowledge did not have better behavior. However previous studies have shown direct relationship between KAB and year of study.^{13,14,15,6}

Parent's education had some effect on the KAB of the participants. Better knowledge was seen among the engineering, BBA and law students whose parents had professional degree as their qualification, similar to earlier study by Khami M R et al.¹⁶ Higher attitude scores were seen with BBA and Law students, whose parents had intermediate/post high school diploma education. Better behaviour was observed with nursing students whose parents were graduates.

The difference in the parental education level demonstrates a difference in the KAB among study subjects as seen in earlier study by Nuca C.17 As stated by Athanasios I Zavras, 2002,18 the higher the educational status, the more positive attitude will be about the oral health. Similarly, the higher the educational status, the more knowledgeable the study subjects are about the oral health and its diseases.

Higher knowledge was seen with dental students whose parents were clerk, shop/farm owners. Among engineering, better knowledge was seen with those students whose parents were unemployed. Among law students, higher knowledge was observed with those whose parents were professionals. Higher attitude scores were seen among dental and BBA students whose parents were professionals. Among agriculture and law students, higher attitude scores were seen among those whose parents were unskilled. It was observed that there is no difference of behavior scores with respect to parental occupation. This is in contrast with a study by Khami M R et al, 2007 9 and Raija P et al 2005,16 which showed significance of parental occupation on behavior. The inconsistent relationship between parent's occupation and students' oral health KAB could be due to the smaller sample size in each profession, which led to the uneven distribution of the study subjects in various occupation categories.

The present study revealed that there is a difference in knowledge level among engineering, medical, BBA, law and Ayurveda students with respect to family income. Among all these students, better knowledge was seen with those whose family income was more than 50,000 per month. Better attitude was seen among engineering and medical students whose family income was 40000-50000 or above similar to other studies.19, 17 This could be due to favorable conditions (better access) among higher socioeconomic status subjects for better knowledge and attitude.

Although previous studies20 suggest that there is a decrease in knowledge with increase in family size, our study did not show association of family size with knowledge. This could be due to the effect of other factors like better economic status or educational status of the parents. However better behavior was observed among law students whose family size was 1-5. This could be due to the reason that better attention would be paid by the parents towards their children as the family size decreases.

A difference in knowledge level was observed among BBA and law students with respect to location. In both the professions, higher knowledge scores were seen among those who had permanent urban residence, similar to previous study by Michael E. Hamilton W. Mark Coulby.21,22 Higher attitude scores were seen with BBA students whose permanent residence was urban. Surprisingly, agriculture students whose permanent residence status was rural showed higher attitude scores. Similarly higher behavior scores were seen among nursing students belonging to urban locality. This is in accordance with a study by Peng B et al, 1997,23 and Ekanayake et al, 1999.21 The reason for better KAB seen among those of urban residents could be due to better exposure of the subjects to the health related information in urban areas as compared to rural areas.

With respect to knowledge, dental students had overall good knowledge level, followed by medical students and least knowledge was seen among law students. This is attributed to the knowledge that dental and medical students gain during their course of study and it is a significant part of their professional education. Higher attitude scores were seen among dental students followed by nursing and least scores were seen with law students. Better behavior was observed among dental and nursing students and poor oral health behavior was seen among agriculture students. Better attitude and behavior seen among dental and nursing students may be due to the fact that they are involved in patient care.

Conclusions: Among eight different professional students, highest knowledge was seen among dental students followed by medical, nursing, Ayurveda, agriculture, engineering, BBA students and least level of knowledge was seen among law students. Of the different professional students, dental students showed better attitude followed by nursing, Ayurveda, medical, agriculture, BBA, engineering students and law students showed least oral health attitude. The better oral health behavior was observed among dental students followed by nursing, medical, Ayurveda, BBA, engineering, law students whereas least oral health behavior was seen among agriculture students.

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