



Comparing the Level of General Practitioners and Medical Students' Awareness about the Relationship between Oral- and Public Health

ARTICLE INFO

Article Type

Descriptive Study

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How to cite this article

Afraz ES, Khezri Y, Ghahari P, Taheri Roudsari SS, Ghahari P. Comparing the Level of General Practitioners and Medical Students' Awareness about the Relationship between Oral- and Public Health. GMJ Medicine. 2024;3(2):65-69.

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Article History

Received: April 4, 2024
Accepted: May 19, 2024
ePublished: May 29, 2024

ABSTRACT

Aims If general practitioners are trained in oral health, it is possible to provide better guidance to patients in solving their oral and dental problems. This study aimed to assess the knowledge of general practitioners and medical students in the relationship between oral health and general health in Semnan City.

Materials & Methods In this cross-sectional study at Semnan University of Medical Sciences in 2021-2022, 150 internship medical students (years 6 and 7) and 50 general practitioners were selected. A checklist of demographic information and a researcher-made oral health awareness questionnaire were prepared and requested to be completed by participants.

Findings There was no significant difference in medical students (12.62±2.57) and general practitioners (12.07±2.94) total knowledge scores (p=0.209). The "oral manifestations of systemic diseases" score in medical students (4.26±1.73) was significantly (p=0.001) higher than general practitioners (3.32±1.43). Knowledge had no significant correlation with age (p=0.263; r=-0.80) and educational history (p=0.101; r=0.131). There was no significant difference between the state of awareness of men and women (p=0.84).

Conclusion The level of knowledge of medical students and general practitioners about oral health has no difference and is unacceptable.

Keywords Oral Health; Awareness; Medical Student; General Practitioner

CITATION LINKS

[1] Knowledge, attitudes, and practices regarding the oral health of children: A cross-sectional study among ... [2] IDF Diabetes Atlas: Diabetes and oral health-A two-way relationship of ... [3] The mutual relationship of the policymakers, providers, and the community on the children's oral health; New windows for ... [4] Survey of oral health behaviors and its associated factors in female students of primary schools in Zabol based on ... [5] Social capital: Theory, evidence, and implications for ... [6] Oral health and morbidity-implications of oral infections ... [7] The World Oral Health Report 2003: Continuous improvement of oral health in the 21st century-the approach of the WHO Global Oral ... [8] Oral health care in older people in long term care facilities: A systematic review of ... [9] Primary care general practitioner roles in health centers with oral ... [10] Medical doctors' knowledge of dental trauma ... [11] Oral health practices among Pakistani ... [12] Knowledge and awareness regarding oral health among anganwadi workers in India: A ... [13] Study of the level of awareness & diagnostic skills of medical interns regarding common oral diseases and their manifestations at the medical colleges of ... [14] Assessment of oral health awareness among undergraduate Medical Students in Davangere city: A ... [15] Knowledge and awareness of medical doctors, medical students and nurses about ... [16] Periodontal disease and adverse pregnancy outcomes: A ... [17] Maternal periodontitis and preterm birth: Systematic review and ... [18] Evaluation of the awareness of the yazd medical students about common oral diseases and its relationship with general ... [19] Evaluation of knowledge and attitude of medical interns regarding oral ... [20] Evaluation of knowledge and attitude of medical interns regarding oral ... [21] Oral health knowledge among pre-clinical students of International Branch ... [22] Quality of life-related to oral health: contribution from ... [23] Global oral health inequalities: Task group-implementation and ... [24] Assessing individual and neighborhood social factors in child oral health-related quality of life: A ... [25] Survey of the knowledge of medical students of Shahid Sadoughi University of Medical Sciences about ... [26] Evaluation of knowledge, attitude and practice of Tabriz school health workers about ...

Introduction

Oral health is a part of overall health and has been a center of attention of researchers in the past. Although it may cause risks for humans, little attention has been paid to it [1]. Oral and general body health have a mutual relationship, and each can affect the other [2, 3].

The new purposes of the World Health Organization in 2020 are highlighting the use of experiences assessing previous goals and emphasizing the importance of oral and dental health as an indispensable component of public health [4, 5]. The importance of some oral diseases is such that if not diagnosed correctly and in time, they can lead to serious disability and even death [6]. Despite the role of oral health in general health, this is usually overlooked. Studies have shown that information on oral health among health personnel is severely inadequate and limited [7, 8].

In most cases, general practitioners are the first group of medical personnel who encounter patients. This issue is also more important in the low-income population of society because many patients do not go to the dentist due to economic problems. At the same time, the same people will have to see general practitioners for general health status. Therefore, general practitioners' knowledge about the relationship between oral and general health can greatly help improve oral health in a community [9]. Enough knowledge of oral diseases is essential for general practitioners due to the relationship between periodontal disease and many diseases and systemic conditions, oral manifestations in many systemic diseases, oral complications in several medications, and oral problems in some patients [10, 11]. Some general practitioners are less familiar with oral diseases and their origins and may be unable to establish a relationship between systemic diseases and oral manifestations [12, 13]. In a cross-sectional study, Sujatha *et al.* [14] used a questionnaire to assess the level of knowledge about oral health among urban medical students in India. They showed that the level of knowledge of medical students about oral health was low. Oyetola *et al.* [15] investigated general practitioners/medical students and nurses' awareness of dentistry. The study found that the majority were aware of the existence of dentistry, but their attitude and awareness toward the field were low, and they did not refer patients to the dentist.

If general practitioners are trained in oral health, it is possible to provide better guidance to patients in solving their oral and dental problems. This study aimed to assess the knowledge of general practitioners and medical students in the relationship between oral health and general health in Semnan City. The results can help conduct seminars and workshops and increase the awareness of this group of health personnel. Thus,

this study evaluated the knowledge of Iranian general practitioners and medical students of relation oral health to general health.

Instrument and Methods

This cross-sectional study was conducted on medical students in the last three years of their studies and general practitioners working in Semnan City in 2021-2022. The statistical sample was estimated to be 200 people and was collected by the census method by visiting hospitals and active private practices of general practitioners in Semnan City.

The questionnaire contained demographic information (age, sex, academic degree, and work experience) and 30 other questions; general information in dentistry (1 to 8), relationship between periodontal diseases and general health (9 to 13), oral manifestations of systemic diseases (14 to 25), and oral cavity cancers and complications caused by their treatment (26 to 30). Correct and incorrect answers were reported as the knowledge level of general practitioners and students. One score was given to correct answers and 0 to incorrect ones [16, 17]. Therefore, the awareness scores ranged from 0 to 30 (very weak=0 to 6, weak=7 to 12, good=13 to 17, very good=18 to 24, and excellent=25 to 30). The questions of this questionnaire were from different references and modified by researchers. The validity of the questionnaire was investigated by polling 10 experts in the field of oral diseases and periodontology. According to the content validity formula (CVR), the minimum acceptable CVR value was 0.62, considering that the number of experts in the field of oral diseases and periodontology was 10 people, and the calculated CVR for 2 questionnaire questions was 0.2 and 0.6. Therefore, they were excluded from the questionnaire; while the content validity of the rest of the questions was confirmed.

After being approved by the Ethical Committee of Semnan University of Medical Sciences, the university was asked about the schedule of educational classes, and according to that schedule in the hours after the classes and without prior coordination, the questionnaire was provided to the students and collected on the same day after the end of the response period.

The demographic characteristics of the samples (Mean±SD) were analyzed by Mann-Whitney, Student T, and Chi-square tests and Spearman's correlation coefficient in SPSS 24 software. A significant level of 0.05 was considered.

Findings

The mean age of the students was 25.48±1.46 (minimum=24 and maximum=28) years, and of general practitioners was 32.90±1.87 (minimum=30 and maximum=37) years (p<0.001). Eighty (53.3%)

medical students and 23 (46.0%) general practitioners were women (Table 1).

Table 1. Comparison of the frequency (numbers in parentheses are percentages) of demographic parameters between students and general practitioners

Parameter	Student	General practitioner	p-Value
Gender			
Male	80 (53.3)	23 (46.0)	0.369
Female	70 (46.7)	27 (54.0)	
Age (year)			
<30	150 (100.0)	-	<0.001
≥30	-	50 (100.0)	
History (year)			
<2	57 (38.0)	12 (24.0)	<0.001
≥2	93 (62.0)	38 (76.0)	
Awareness			
Weak (7 to 12)	85 (56.7)	29 (58.0)	0.209
Good (13 to 17)	61 (40.7)	20 (40.0)	
Very good (18 to 24)	4 (2.7)	1 (2.0)	

There was no significant difference between students (3.01 ± 0.98) and general practitioners (2.59 ± 1.01) in "general information in the field of dentistry" ($p=0.24$). There was no significant difference between students (1.11 ± 0.55) and general practitioners (1.14 ± 0.62) in the "relationship between periodontal diseases and public health" ($p=0.452$). There was no significant difference between students (2.67 ± 0.87) and general practitioners (2.42 ± 1.10) in "familiarity with oral cavity cancers and its complications" ($p=0.153$). But there was a significant difference between students (5.16 ± 1.92) and general practitioners (4.70 ± 1.39) in "oral manifestations of systemic diseases" ($p=0.001$). Awareness had no significant relationship with demographic characteristics (Table 2).

Table 2. The relationship between awareness and the frequency of demographic parameters

Parameter	Weak	Good	Very good	p-Values
Age				
Students (<30)	4 (2.7)	61 (40.7)	85 (56.7)	0.263
General practitioners (>30)	1 (2.0)	20 (40.0)	29 (58.0)	
Gender (Students)				
Female	1 (1.3)	35 (43.8)	44 (55.0)	0.137
Male	4 (4.3)	26 (37.1)	41 (57.6)	
Gender (General practitioners)				
Female	1 (4.3)	6 (26.1)	16 (69.6)	0.141
Male	-	14 (51.1)	13 (48.1)	
History (Students)				
<2	4 (7.0)	18 (31.6)	35 (61.4)	0.110
≥2	-	43 (46.2)	50 (53.8)	
History (General practitioners)				
<2	-	6 (50.0)	6 (50.0)	0.733
≥2	1 (2.6)	14 (36.8)	23 (60.5)	

Discussion

This study aimed to investigate the knowledge of Iranian general practitioners and medical students of relation oral health to general health. Personal health has an effective role in society's health, development, and empowerment. Oral and dental

health are important branches of public health that significantly impact people's health and quality of life. Researchers have concluded that to improve oral health in society, prevention should be done instead of treatment, and the first step in prevention is to promote healthy culture and the continuous process of health education to people. Therefore, hygienic behavior and proper performance to preserve teeth and related structures are based on increasing awareness and changing attitudes toward oral and dental hygiene.

The results of the present study showed that the level of knowledge about oral health in most medical students and also in most general practitioners was weak. Similar to our findings, Tabatabai *et al.* [18] investigated medical students' awareness of common oral diseases and their relationship with public health. They showed that the level of awareness about oral health in the most studied medical students was low. Another study has investigated the knowledge and attitude of medical students of Yazd Medical School regarding oral and dental health and reported the level of knowledge of this group of health personnel to be weak [19], similar to our findings. The results of the study are parallel with those reported by Yao Ke *et al.*, who investigated the level of awareness and behavior of medical and dental students regarding oral health and showed that the level of awareness and behavior of medical students regarding oral health is weak [20]. They reported a need to improve knowledge and behavior about this group's oral health level.

In another study, Sujatha *et al.* [14] investigated the level of awareness of oral and dental health among medical students in India. They showed the level of awareness of medical students about oral health was weak. This finding was also consistent with the results of our study. This low awareness needs further investigation and indicates that medical students and general practitioners do not have good knowledge of oral and dental health. It needs rooting and gaining more information about dental health in medical students and general practitioners. It expects that the knowledge level of most medical students should be at a good level, and more than 9 of them have education in oral and teeth health. In this regard, since 1999, the University of Massachusetts in the United States has been educating about maintaining health and preventing or controlling oral and dental diseases, such as the description of the structure and function of teeth, a list of oral and dental diseases, introduction of oral and dental health indicators, effective factors in causing dental caries and oral diseases, application of skills health tips and introduction of proper diets [21].

The results of this study showed that the scores of the "oral manifestations of systemic diseases" component in medical students were significantly

higher than those of general practitioners. Tabatabai *et al.* [18] showed that the component "oral manifestations of systemic diseases" scores in medical students were high and appropriate, similar to our study's results. It can be said that medical students are expected to have higher scores in the "oral Manifestations of Systemic Diseases" component due to the up-to-date information and more searching in information sources. There was no significant difference between medical students and general practitioners for other components. Sujatha *et al.* [14] reported the scores of the components related to oral health awareness among medical students showed no significant difference. This finding was consistent with the results of our study. The small number of statistical samples can be the justification for this relationship. The results did not show a significant difference between the oral health awareness in women and men. Conversely, Tabatabai *et al.* [18] showed a significant relationship between gender and the level of knowledge. Students' level of awareness about oral and dental hygiene was not dependent on the gender of the people [22-24]. It could be attributed to the fact that medical students and general practitioners usually belong to families in favorable cultural, socioeconomic, and educational situations, and these factors contribute to the high level of awareness of the children of these families. It is effective for oral and dental health in both men and women.

The results of this study showed that there was no significant correlation between age and level of awareness. Tabatabai *et al.* [18] reported a significant statistical relationship between age and the level of knowledge that is similar to the results of our study. Khabazian *et al.* [25] investigated the level of awareness of periodontal diseases in clinical medical students of Shahid Sadougi University of Medical Sciences in Yazd. They concluded a positive and significant correlation between age and level of awareness. This contradiction could be due to the difference in demographic characteristics and the measurement tools in various studies. The results of this study showed that there was no significant correlation between history and level of awareness. The results of a study conducted by Taghizadeh *et al.* on the level of awareness of healthcare workers in Tabriz schools showed that the level of awareness about oral and dental health had a significant relationship with the work experience of individuals [26] in contrast to the results of our study. The reason for this contradiction can be the difference in the type of experience.

This study had several limitations and several known and unknown factors that require future examinations may influence oral health awareness. The questionnaire findings were drawn to check the level of awareness with limitations. To reach the appropriate level of personal and public health

awareness, the Ministry of Health should provide suitable educational programs for all medical students and general practitioners in various stages, organize workshops and seminars, and provide oral and dental health education booklets to students.

Conclusion

The awareness level of medical students and general practitioners concerning oral and dental health is unacceptable.

Acknowledgments: The authors are grateful for the help and cooperation of the Faculty of Dentistry, Semnan University of Medical Sciences, Semnan, Iran..

Ethical Permissions: All the procedures were approved by the Ethical Committee of Semnan University of Medical Sciences (IR.SEMUMS.REC.1399.226).

Conflicts of Interests: The authors declare no competing interests in this work.

Authors' Contribution: Afraz ES (First Author), Methodologist/Main or Assistant/Discussion Writer/Statistical Analyst (30%); Khezri Y (Second Author), Methodologist/Researcher/Statistical Analyst (30%); Ghahari P (Third Author), Introduction Writer/Methodologist (10%); Taheri Roudsari SS (Fourth Author), Methodologist/Statistical Analyst (10%); Ghahari P (Fifth Author), Methodologist/Main or Assistant/Discussion Writer (20%)

Funding/Support: This study was supported by Semnan University of Medical Sciences (Semnan, Iran).

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