Original Research

COMPARISON OF KNOWLEDGE, ATTITUDES AND BEHAVIORS OF TWO UNIVERSITY STAFF ON ORAL AND DENTAL HEALTH

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Abstract

Purpose: Oral and dental health is an integral part of general health and depends on the correct and regular practice of oral hygiene habits of individuals.The best way to determine the importance and perspective people give to oral health is to evaluate their knowledge,attitudes,behaviors. For this purpose,questionnaire questions about oral and dental health were asked to academic and administrative staff working at Burdur Mehmet Akif Ersoy University(BMAU) and Tetova University(TU) and compared with each other.

Methods: The study was carried out with a total of 297 participants,169 from BMAU;128 from TU. Questionnaire with 26 questions evaluate the socio-demographic characteristics of the participants,their tooth brushing and use of oral care tools,their nutritional habits,their level of knowledge about oral and dental health, and their status and frequency of going to the dentist. The obtained data were statistically analyzed according to the significance level of $p<0.05$.

Results: BMAU and TU personnel have deficiencies in oral and dental health practices.It has been observed that the two university personnel's conditions related to tooth brushing and their use of auxiliary oral and dental health products are insufficient and they hinder regular dental check-ups.The age of starting tooth brushing is earlier in TU than in BMAU($p<0.05$).The rate of knowing the anti-cariogenic property of cheese is quite low and it is higher in BMAU than in TU($p<0.05$). Those who know that fluor has anti-cariogenic properties have very low in BMAU(32.5%) and TU(39.8%)($p>0.05$).

Conclusion: It is necessary to increase university personnel's knowledge,attitude,behavior levels about oral and dental health through training.

Keywords

Attitude and behavior; Dental caries; Oral and dental health; Oral hygiene; Periodontal disease.

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İki Üniversite Personelinin Ağız ve Diş Sağlığı Konusunda Bilgi, Tutum ve Davranışlarının Karşılaştırılması

Öz

Amaç: Ağız ve diş sağlığı genel sağlığın ayrılmaz bir parçası olup bireylerin ağız hijyen alışkanlıklarını doğru ve düzenli olarak uygulamalarına bağlıdır. İnsanların ağız sağlığına verdiği önem ve bakış açısını belirlemenin en iyi yolu ise bilgi, tutum ve davanışların değerlendirilmesidir. Bu amaçla Burdur Mehmet Akif Ersoy Üniversitesi (BMAU) ve Tetova Üniversitesinde (TU) çalışan akademik ve idari personeline ağız ve diş sağlığına yönelik anket soruları yöneltilmiş ve birbirleriyle karşılaştırılmıştır.
Yöntem: BMAU'dan 169 kişi, TU'dan 128 kişi olmak üzere toplam 297 katılımcı ile çalışma gerçekleştirilmiştir. 26 soruluk anket çalışması; katılımcıların sosyo-demografik özelliklerini, diş fırçalama ve ağız bakım araçlarını kullanma durumlarını, beslenme alışkanlıklarını, ağız ve diş sağlığı hakkındaki bilgi düzeylerini, diş hekimine gitme durumlarını ve sıklığını değerlendirmektedir. Elde edilen veriler $p<0,05$ anlamlılık düzeylerine göre istatistiksel olarak analiz edildi.
Bulgular: BMAU ve TU personellerinin ağız ve diş sağlığı uygulamaları ile ilgili eksikleri bulunmaktadır. İki üniversite personelinin de diş fırçalama ile ilgili durumları, yardımcı ağız ve diş sağlığı ürünleri kullanımları yetersiz olup düzenli diş hekimi kontrollerini aksattıkları görülmüştür. TU'da BMAU'ya göre diş fırçalamaya başlama yaşı daha erkendir ($p<0,05$). Peynirin antikaryojenik özelliğinin bilinme oran oldukça düşük olup BMAU'da TU'ya göre daha yüksektir ($p<0,05$). Florun antikaryojenik özelliğinin olduğunu bilenler BMAU (%32,5) ve TU (%39,8)'da oldukça düşüktür ($p>0,05$).
Sonuç: Üniversite personellerinin ağız ve diş sağlığı hakkındaki bilgi, tutum ve davranış düzeylerinin verilecek eğitimlerle arttırılması gerekmektedir.

Anahtar Kelimeler
Tutum ve davranış; Diş çürüğü; Ağız ve diş sağlığı; Oral hijyen; Periodontal hastalık.

INTRODUCTION

According to the World Health Organization (WHO) oral health is a key indicator of overall health, well-being and quality of life. It encompasses a range of diseases and conditions that include dental caries, periodontal (gum) disease, tooth loss, oral cancer, oro-dental trauma, noma and birth defects such as cleft lip and palate (WHO, 2022).

Oral health is an important part of systemic health (Rodakowska&et al.,2018) and many studies are showing a relationship between oral diseases and systemic chronic diseases (Bui et al., 2019; Nazir, 2017). While it has been reported that there is a bidirectional relationship between diabetes and periodontal disease, it has been found that the risk of cardiovascular diseases in individuals with periodontal disease is higher than in individuals without periodontal disease (Blaizot&et al.,2009; Casanova, Hughes, & Preshaw, 2014). Moreover, Sampson et al. stated that improving oral hygiene in Covid 19 patients can reduce the risk of developing Covid 19 complications (Sampson, Kamona, & Sampson, 2020).

Knowledge, beliefs, values, attitudes, skills, finances, materials, time, family members, friends, co-workers, opinion leaders, and even health professionals themselves are among the factors that can influence all these health behaviors (Park's, 2021). One of the ways to determine the importance and perspective that people give to oral health is to evaluate knowledge, attitudes and behaviors.

Among the most important public health problems are the frequent occurrence of oral and dental diseases and the high cost of their treatments, as well as their effects on the psychology and quality of life of individuals (Sheiham, 2005). However, it is simple to prevent oral and dental diseases, which are public health problem of socio-political character, if the necessary importance is given to oral and dental health. Therefore, the control of oral and dental diseases can only be possible with planned and convincing social policies (Sheiham, 2005).

In the literature review on the subject, few studies (Başak&Küçük 2021) measure university staff's knowledge, attitudes, and behaviors about oral and dental health, and there is no scientific publication comparing Turkey with North Macedonia. Therefore, this study has the feature of being original and new. In the planned study, a survey study including oral and dental health questions covering Burdur Mehmet Akif Ersoy University and Tetova University was conducted to close the literature gap on this subject.

2. METHODS

2.1 Research Design

In the study, a survey form with the questions determined by the authors as a result of a wide literature review on the subject was used (Duijster&et al.,2015; Elzahaf, Elzer& Edwebi, 2019; Mahdi, Sibilio& Amenta, 2016) To evaluate the content adequacy of the survey and the comprehensibility of the questions, the questionnaire questions were also examined by the experts (2 restorative dentistry specialists, 2 periodontology specialists, 1 oral and maxillofacial surgery specialist, and 1 biostatistics specialist) and the questions were revised in line with their suggestions. In addition, a pilot study was conducted with 20 university personnel and all participants stated that the questions were understandable. Data from the pilot study were not included in the final results.

2.2 Study Population

The survey was conducted among the staff of Tetova University and Burdur Mehmet Akif Ersoy University. The sample of the research consists of staff who agree to participate in the research. While the personnel who agreed to participate in the study but did not fully answer all the questions were excluded from the study (n=4), everyone who answered all the questions completely was included in the study. 250 staff of Tetova University, the minimum number of samples to be taken was 130, with a population proportion of 50%, a margin of error of 5%, and a confidence level of 90%. The purpose of the survey was explained to the staff before the study, it was explained that participation in the survey was voluntary and a total of 128 staff agreed to participate from Tetova University. 45.3% (n=70) of 128 participants from TU were female and 54.7% (n=58) male. According to Tetova University, the participation of Burdur Mehmet Akif Ersoy University was calculated as ±30%. A total of 169 staff participated from Burdur Mehmet Akif Ersoy University. 45.6% (n=75) of 169 participants from BMAU were female, 54.4% (n=92) were male.

2.3 Data Collection Tools

A survey consisting of 26 questions; evaluates the socio-demographic characteristics of the participants, their use of tooth brushing and oral care tools, their nutritional habits, their level of knowledge about oral and dental health, and their status, and frequency of going to the dentist.

Survey application; It was applied online or face-to-face with the questionnaire form prepared in Google Forms for BMAU personnel; for TU, it was done online only in electronic form via Google Forms. The data of the research were collected in January-February, 2022.

2.4 Ethics Consideration

The research had the approval of the Burdur Mehmet Akif Ersoy University's Ethics Committee (Date: 03.11.2021, No: GO 2021/368), which is in complies with the Helsinki Declaration.

2.5. Statistical analysis

The responses of the survey participants to the questions will be coded and analyzed using the SPSS computer program (SPSS 20.0, Inc., Chicago, IL, USA). In descriptive statistics; numbers, averages and percentage distributions were calculated. The Chi-Square test was used for statistical analysis; a value of $p<0.05$ was considered statistically significant.

3. RESULTS

The sociodemographic characteristics of the participants are summarized in Table I and Figure 1. While 45.6% of 169 participants from BMAU were female, 54.4% were male, 45.3% of 128 participants from TU were female and 54.7% male. While the participants were mostly between the ages of 36-50 (46.2%) in the BMAU group, they were between the ages of 18-35 (47.7%) in the TU group. When the marital status of the groups is examined, the married ones show weight in both groups as 73.4% in BMAU and 72.7% on TU. There was a significant difference between the education levels of the BMAU and TU groups ($p=0.007$; $p<0.05$). The number of participants with postgraduate education is higher in both groups, 40.2% in BMAU and 59.4% on TU.

Table 1. Sociodemographic characteristics of the participants

		BMAU Group			**TU Group**	
Sociodemographic characteristics		n	%	p value*	n	%
1.Gender	female	75	45.6	p=0.101	70	45.3
	male	92	54.4		58	54.7
2.Age range	18-35	65	37.9		61	47.7
	36-50	78	46.2	p=0.324	54	42.2
	51>	27	37.9		13	10.2
3.Marital status	married	124	73.4		93	72.7
	single	45	26.6	p=0.939	35	27.3
4.Educational Status	primary education	3	1.8		0	0
	high school	20	11.8		14	10.9
	associate degree	17	10.1	p=0.007	6	4.7
	undergraduate	61	36.1		32	25
	graduate	68	40.2		76	59.4

BMAU: Burdur Mehmet Akif Ersoy University TU: Tetova University

*Chi-square test, $p<0.05$

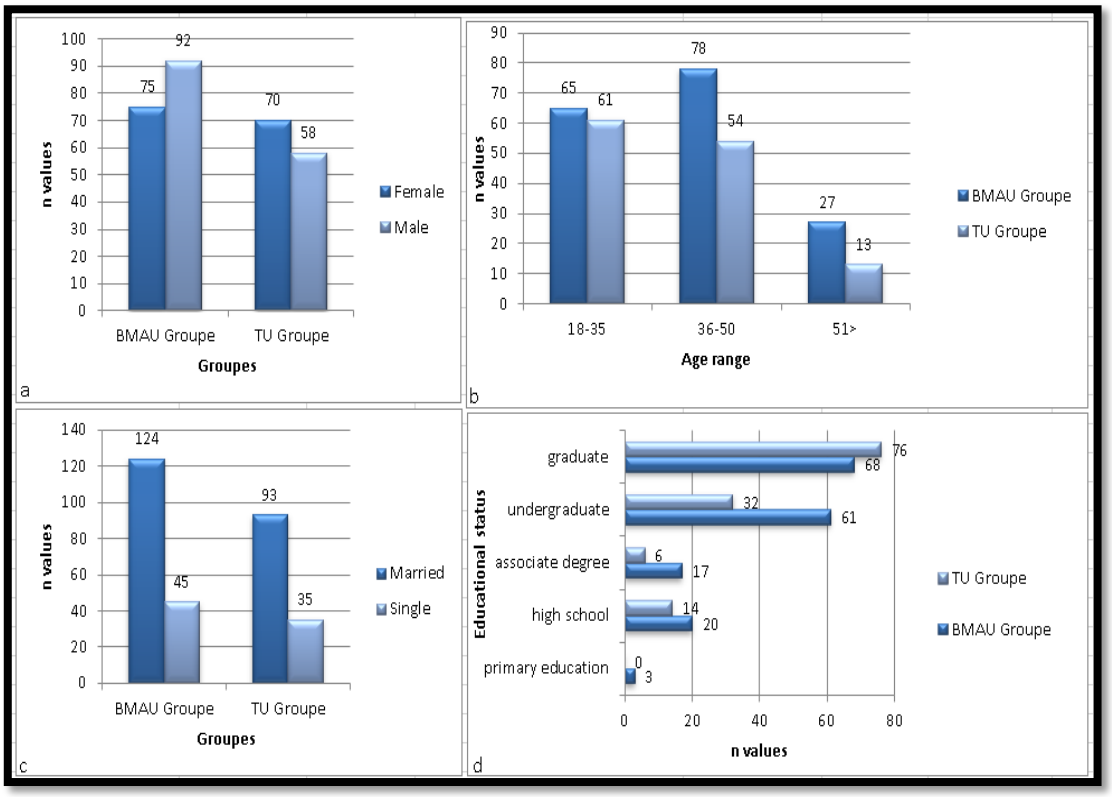

Figure 1: Sociodemographic characteristics of the participants. a; Gender, b;Age range, c; Marital status, d; Educational status

The individual oral hygiene perceptions of the participants, the importance of oral hygiene and their visits to the dentists are summarized in Table II. A significant difference was found between the two groups in the answers to the question of how you evaluate your oral hygiene to the university staff participating in the research ($p=0.001$; $p<0.05$). While 24.3% of the BMAU group gave a good response, this rate was measured as 49.2% in the TU group. The question "What is the most important reason for the protection of oral and dental health" was asked to the participants and the BMAU group was 78.7%; in both groups, 79.7% in the TU group, it was observed that the answer "to prevent tooth decay and loss" was marked at a higher rate than the other options and no statistically significant difference was observed between the two groups ($p=0.112$; $p>0.05$). 89.9% of the BMAU group and 82.8% of the TU group stated that they think that oral and dental diseases affect other diseases in the body. However, there was no statistically significant difference between the two groups ($p=0.078$; $p<0.05$) (Table II).

When asked about the last time you went to the dentist, 37.9% of the BMAU group replied within 6 months, 36.1% within 6 months- to 2 years, and 26% more than 2 years ago; on the other hand, 48.4% of the TU group stated that within 6 months, 31.3% within 6 months-2 years, and 20.3% stated that

more than 2 years had passed since the time of going to the dentist. No statistically significant difference was found between the groups (p=0.210; p>0.05). The last reason for the BMAU group to go to the dentist was for caries at 19.5%, toothache at 18.3%, scaling at 16.6%, control at 12.4% and root canal treatment at 11.2%. In the TU group, control was 20.3%, calculus removal 19.5%, root canal treatment 14.1%, toothache 14.1% and dental caries 11.7%. There was a statistically significant difference between the two groups in terms of the last reason for going to the dentist (p=0.001; p<0.05) (Figure 2-a;Table II).

Table II. Multiple-choice questions (5-9), responses of BMAU and TU, and statistical analysis results of the applied questionnaire

Questions	**Answers**	**BMAU Group**			**TU Group**	
		n	%	p value*	n	%
5.How do you evaluate your own oral and dental health?	good	41	24.3	p=0.001	63	49.2
	middle	106	62.7		51	39.8
	bad	22	13		14	10.9
6.What is the most important reason for protecting oral and dental health?	to prevent tooth decay and loss	133	78.7		102	79.7
	aesthetic	3	1.8		4	3.1
	protect gum health	28	16.6	p=0.112	12	9.4
	prevent bad breath	4	2.4		6	4.7
	other	1	0.6		4	3.1
7.Do oral and dental diseases affect other diseases in the body?	yes	152	89.9		106	82.8
	no	1	0.6	p=0.078	7	5.5
	i don't know	16	9.5		15	11.7
8.When was the last time you went to the dentist?	within 6 months	64	37.9		62	48.4
	within 6 months- 2 years	61	36.1	p=0.210	40	31.3
	more than 2 years	44	26		26	20.3
9.Why was the last time you went to the dentist?	toothache	31	18.3		18	14.1
	decay	33	19.5		15	11.7
	scaling	28	16.6		25	19.5
	prosthesis	10	5.9		5	3.9
	root canal treatment	19	11.2		18	14.1
	tooth extraction	15	8.9	p=0.001	10	7.8
	orthodontic treatment	4	2.4		4	3.1
	jaw and joint problem	2	1.2		3	2.3
	control	21	12.4		26	20.3
	other	6	3.6		4	3.1

BMAU: Burdur Mehmet Akif Ersoy University TU:Tetova University

*Chi-square test, p<0.05

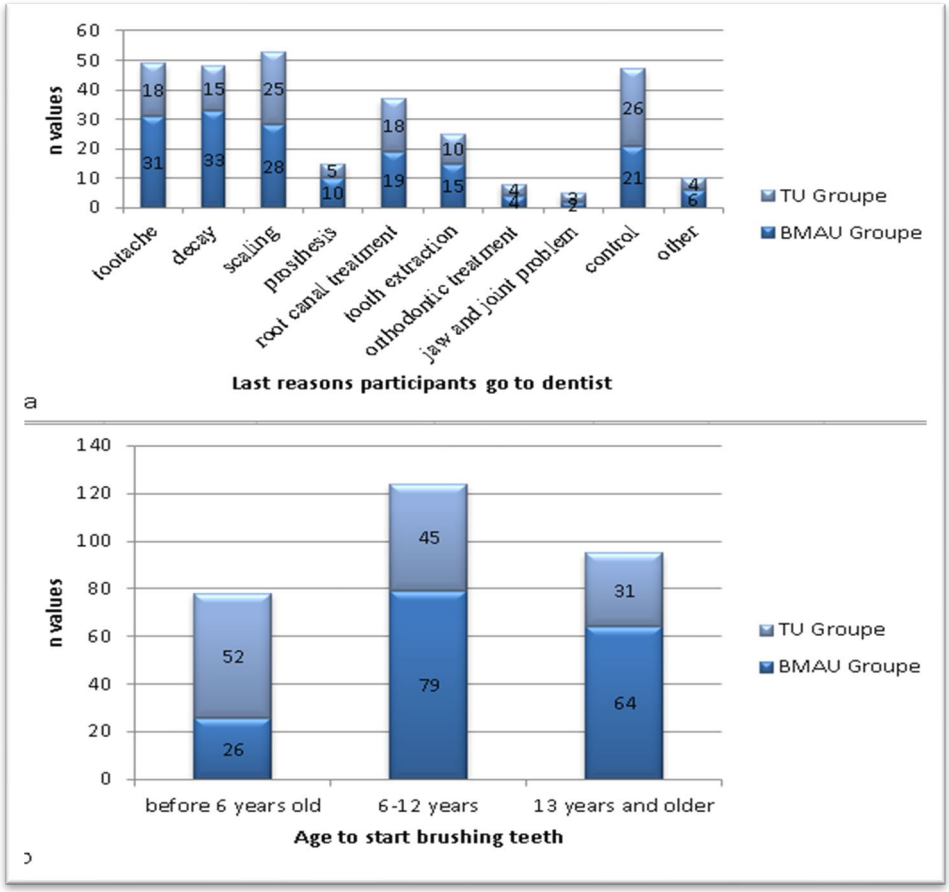

Figure 2 : a; Shows the last reason participants go to the dentist, b; Shows when participants started brushing teeth.

The participants' toothbrushing status, toothbrush preference and frequency of replacement are summarized in Table III. In the question in which the frequency of tooth brushing was questioned, 47.3% of the BMAU group answered twice or more a day, 37.9% said once a day, 10.7% said once or several times a week, 4.1% replied that I rarely brush. The answers given in the TU group are as follows: 53.9% I brush 2 or more times a day, 34.4% I brush once a day, 7% I brush once or several times a week, and 4.7% rarely answered. There was no significant difference between the 2 groups in terms of tooth brushing frequency ($p=0.700$; $p>0.05$). 15.4% of the BMAU group started brushing before 6 years old, 46.7% between 6-12 years old, 37.9% after 13 years of age, and 40.6% of the TU group before 6 years of age. 35.2% of them started brushing between the ages of 6-12 and 24.2% after the age of 13 (Figure 2-b). There was a statistically significant difference between the two groups in terms of tooth brushing initiation age ($p=0.001$; $p<0.05$). When asked how long you brush your teeth, 11.2% of the BMAU group asked as less than 1 minute, 67.5% 1-2 minutes, 20.1% more than 2 minutes and 1.2% do not

know. While answering the TU group, 20.3% replied less than 1 minute, 53.1% 1-2 minutes, 24.2% more than 2 minutes, and 2.3% did not know (Figure 3-a). There is a statistically significant difference for this question between these two groups (p=0.017; p<0.05). 20.7% of the BMAU group stated that they change their toothbrushes once a year, 55.6% 2-3 times a year and 23.7% 4 or more times a year. It was determined that 21.9% of the TU group changed their toothbrushes once a year, 42.2% 2-3 times a year and 35.9% of them 4 or more times a year (Figure 3-b) .There was a statistically significant difference between the two groups in terms of toothbrush replacement frequency (p=0.036; p<0.05). In terms of the the participants' preference for the hardness of the toothbrush, in the BMAU group, 32% soft, 61.5% medium, 4.1% hard, and 2.4% did not matter; in the TU group, 31.3% were soft, 62.5% medium, 5.5% hard, 0.8% indifferent. There was no statistically significant difference between the 2 groups for this question (p=0.982; p>0.05).

Table 3. Multiple choice questions of the applied questionnaire (10-14), responses of BMAU and TU, and statistical analysis results

Questions	Answers	BMAU Group			TU Group	
		n	%	p value*	n	%
10.What is your tooth brushing frequency?	1 time per day	64	37.9	p=0.700	44	34.4
	2 or more per day	80	47.3		69	53.9
	once or several times a week	18	10.7		9	7
	rarely	7	4.1		6	4.7
11.At what age did you start brushing teeth?	before 6 years old	26	15.4	p=0.001	52	40.6
	6-12 years	79	46.7		45	35.2
	13 years and older	64	37.9		31	24.2
12.How long do you brush your teeth?	less than 1 min	19	11.2	p=0.017	26	20.3
	1-2 min	114	67.5		68	53.1
	more than 2 min	34	20.1		31	24.2
	i do not know	2	1.2		3	2.3
13.How often do you change your toothbrush?	once a year	35	20.7	p=0.036	28	21.9
	2-3 times a year	94	55.6		54	42.2
	4 or more per year	40	23.7		46	35.9
14.About the hardness of the toothbrush what is your preference?	soft	54	32	p=0.982	40	31.3
	middle	104	61.5		80	62.5
	hard	7	4.1		7	5.5
	it doesn't matter	4	2.4		1	0.8

BMAU: Burdur Mehmet Akif Ersoy University TU:Tetova University
*Chi-square test, p<0.05

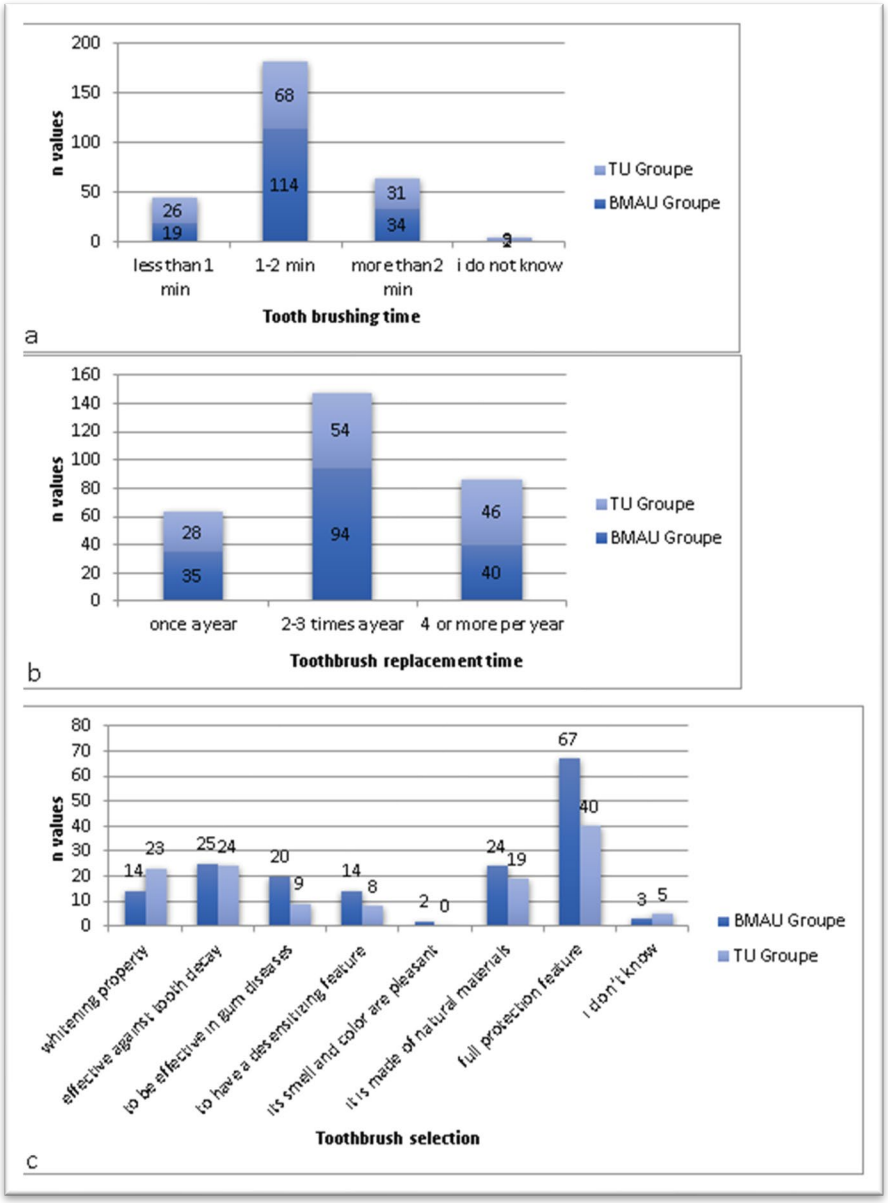

Figure 3: a; Shows how many minutes participants brush their teeth, b; Shows how often participants change their toothbrushes c; Shows the priorities of the participants in choosing toothpaste

The number of people who think that gingival bleeding while brushing is not normal was 76.3% in the BMAU group and 68% in the TU group. There was a statistically significant difference between the groups (p=0.001; p<0.05). Those who think that brushing their teeth half an hour later after meals is a more appropriate option are 45% in the BMAU group and 34.4% in the TU group. There is no statistically significant difference between the groups (p=0.084; p>0.05). The priority given in toothpaste preference is 39.6% in BMAU and 31.3% on TU and, that the toothpaste has full protection properties were preferred in both groups. There was a statistically significant difference between the groups (p=0.014; p<0.05); (Figure 3-c; Table 4).

Table 4. Multiple choice questions of the applied questionnaire (15-17), responses of BMAU and TU, and statistical analysis results

Questions	Answers	BMAU Group			TU Group	
15.Bleeding gums while brushing teeth is it normal?	yes	17	10.1		23	18
	no	129	76.3	p=0.001	87	68
	i do not know	23	13.6		18	14
16.Which time is the most suitable option for brushing teeth?	just before meals	5	3.2		16	12.5
	immediately after meals	75	44.4	p=0.084	55	43
	half an hour after meals	76	45		44	34.4
	i don't know	13	7.7		13	10.2
17.What is your priority in choosing toothpaste?	whitening property	14	8.3		23	18
	effective against tooth decay	25	14.8		24	18.8
	to be effective in gum diseases	20	11.8		9	7
	to have a desensitizing feature	14	8.3		8	6.3
	its smell and color are pleasant	2	1.2	p=0.014	0	0
	it is made of natural materials	24	14.2		19	14.8
	full protection feature	67	39.6		40	31.3
	i don't know	3	1.8		5	3.9

BMAU: Burdur Mehmet Akif Ersoy University TU:Tetova University
*Chi-square test, p<0.05

To the question of which products do you use as an auxiliary products to maintain oral and dental hygiene, 11.2% of 169 participants in the BMAU group and 7.8% of 128 participants from the TU group stated that they do not use any auxiliary products. For the BMAU group, out of 150 people in total, 41.4% state that they use mouthwash, 34.9% dental floss, and 32.5% toothpick as their primary

preference for oral hygiene. In the TU group, 60.2% of the 118 people state that they use mouthwash, 33.6% use dental floss, and 29.7% use toothpicks as their primary preference (Table 5).

Table 5. Percentage and numbers of participants using assistive devices

Question	BMAU Group		TU Group	
18.Which of the following do you use as an auxiliary product to protect oral and dental hygiene? (You can tick more than one option)	n	%	n	%
Mouthwash	70	41.4	77	60.2
Toothpick	55	32.5	38	29.7
Dental floss	59	34.9	43	33.6
Dental floss	31	18.3	27	21.1
Interface brush	13	7.7	8	6.3
Miswak	17	10.1	6	4.7
Electronic toothbrush	23	13.6	17	13.3
Tongue brush	12	7.1	17	13.3
None	19	11.2	10	7.8
Water flosser	6	3.6	13	10.2

BMAU: Burdur Mehmet Akif Ersoy University TU:Tetova University

Participants who thought that plaque was the cause of gingival bleeding and dental caries were more than 50% for both groups. However, no statistically significant difference was found between the groups ($p=0.991$; $p>0.05$). While the occasional consumption of sugary food between meals is over 60% for both groups, the rate of those who do not consume it is around 10% for both groups (Figure 4-a). There was a statistically significant difference between the groups ($p=0.021$; $p<0.05$). In the question which food has less potential for the caries was questioned, as the correct answer, cheese was 43.8% in the BMAU group and 29.7% in the TU group, and a statistically significant difference was found between the groups for the cheese response (Figure 4-c);($p=0.014$; $p<0.05$). In the 22nd question, which is questioned which is more effective in preventing dental caries, 32.5% of the BMAU group and 39.8% of the TU group gave the correct option as fluor. There was no significant difference between the 2 groups in terms of fluor response ($p=0.141$; $p>0.05$). The frequency of consumption of acidic drinks was sometimes over 60% in both groups, and a statistically significant difference was found between the two groups in terms of soda consumption ($p=0.001$; $p<0.05$) (Figure 4-b; Table 6).

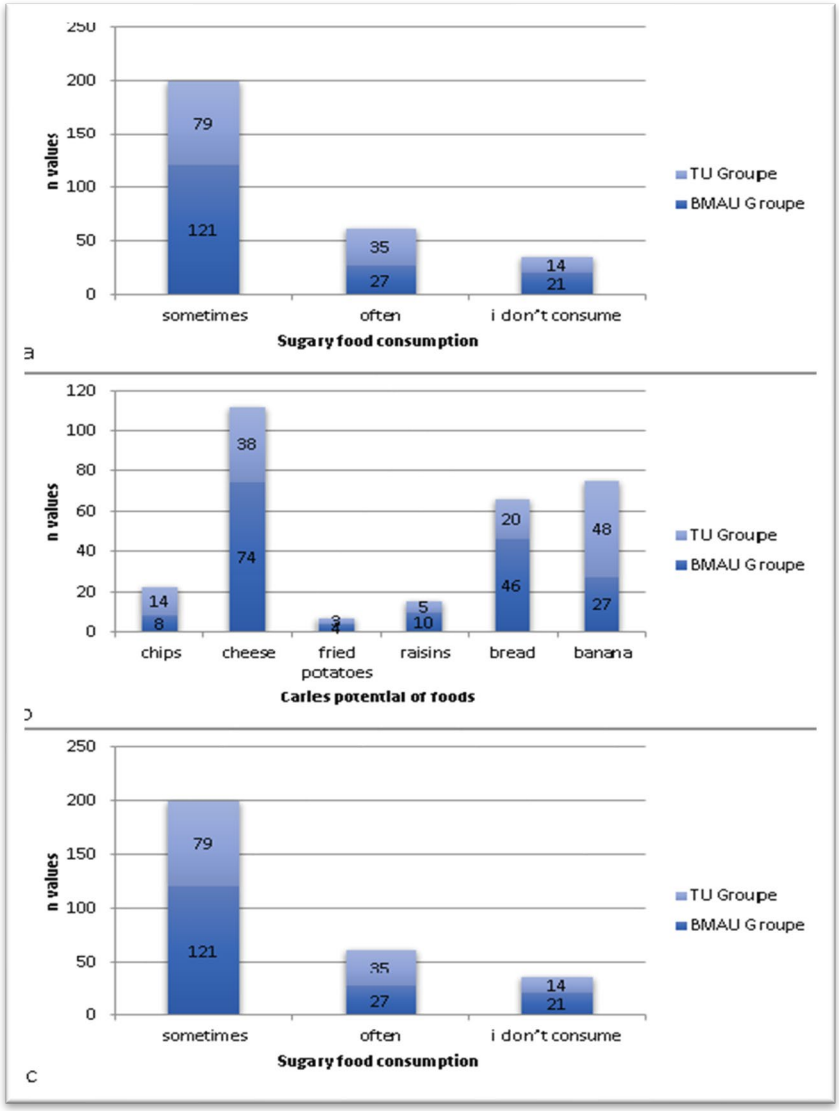

Figure 4: a; Shows the participants' consumption of sugary foods between meals, b; Shows participants' acidic food consumption status c; Shows participants' thoughts on which food has less caries potential

Table VI. Multiple choice questions (19-23) of the applied questionnaire, responses of BMAU and TU, and statistical analysis results.

Questions	Answers	BMAU Group			TU Group	
		n	%	p value*	n	%
19.The cause of bleeding gums and dental caries is plaque accumulated on the teeth (remains accumulated on the teeth)	yes	87	51.5	p=0.991	66	51.6
	no	25	14.8		16	12.5
	i don't know	57	33.7		46	35.9
20.Do you consume sugary foods (chocolate, biscuit, cake, etc.) between meals?	sometimes	121	76.6	p=0.021	79	61.7
	often	27	16		35	27.3
	i don't consume	21	12.4		14	10.9
21.Which of the following foods do you think has the lowest caries potential?	chips	8	4.7	p=0.014	14	10.9
	cheese	74	43.8		38	29.7
	fried potatoes	4	2.4		3	2.3
	raisins	10	5.9		5	3.9
	bread	46	27.2		20	15.6
	banana	27	16		48	37.5
22.Which do you think is the most effective in preventing dental caries?	magnesium	24	14.2	p=0.141	26	20.3
	iron	8	4.7		6	4.7
	fluor	55	32.5		51	39.8
	phosphate	4	2.4		4	3.1
	vitamin D	22	13		12	9.4
	i don't know	56	33.1		28	21.9
23.Do you consume acidic drinks?	sometimes	106	62.7	p=0.001	88	68.8
	often	18	10.7		10	7.8
	i don't	45	26.6		30	23.4

BMAU: Burdur Mehmet Akif Ersoy University TU:Tetova University
*Chi-square test, $p<0.05$

For dental treatments and controls, 47.3% of the BMAU group and 63.3% of the TU group preferred private practices. University hospital preference rate is low in both groups. There was a significant difference between the 2 groups for this question ($p=0.003$; $p<0.05$). In case of any difference (coloration, bleeding, sensitivity, etc.) that you will see in your teeth or gums, the option to go to the dentist in both groups is marked at around 45%. There was no statistically significant difference between the answers given to this question between the two groups ($p=0.417$; $p>0.05$). In the answers given to the question "Are you afraid of going to the dentist?", nearly 70% of both groups answered "no". There was no statistically significant difference between the two groups ($p=0.652$; $p>0.05$); (Table 7).

Table 7. Multiple choice questions (24-26) of the applied questionnaire, responses of BMAU and TU, and statistical analysis results.

Questions	Answers	BMAU Group			TU Group	
		n	%	p value*	n	%
24.Which health institution is your priority for dental treatments and controls?	publichospital	62	36.7	p=0.003	40	31.3
	private practice	80	47.3		81	63.3
	university hospital	27	16		7	5.5
25.What do you do when you notice any difference (coloration, bleeding, sensitivity, etc.) you see in your teeth or gums?	i wait and check from time to time.	31	18.3	p=0.417	31	24.2
	i go to the dentist.	77	45.6		59	46.1
	i take preventive measures (such as using anti-cavity toothpaste, anti-sensitivity toothpaste).	41	24.1		27	21.1
	i don't care as long as it doesn't bother me too much.	20	11.8		11	8.6
26. Are you afraid of going to the dentist?	yes	52	30.8	p=0.652	36	28.1
	no	117	69.2		92	71.9

BMAU: Burdur Mehmet Akif Ersoy University TU:Tetova University

*Chi-square test, $p<0.05$

4. DISCUSSION

Oral and dental health is an integral part of general health (Peres et al., 2019). It is recommended that individuals have good oral hygiene and make regular dentist visits to prevent oral and dental diseases (Poudel &,et al.,2018). For this reason, there are many survey studies evaluating oral hygiene habits (Mabithashri, Devi, & Arivarasu, 2021; Sbricoli &,et al.,2022). In our study, oral hygiene habits, attitudes, knowledge levels, and nutritional habits of the administrative and academic staff of Burdur Mehmet Akif Ersoy University and Tetova University were compared with each other.

Tooth decay, progressive periodontal disease, and dental trauma are the main causes of tooth loss (Atieh, 2008). Tooth loss can reduce the quality of life by affecting the psychological, social, and physical conditions of individuals. In both groups, more than 80% of the participants think that oral and dental health affects our general health and again, over 75% of the participants in both groups chose the option of preventing tooth decay and loss as the most important reason for maintaining oral and dental health. The second most marked option was to maintain gingival health in both groups. These results can be associated with the fact that both university staff's anxiety about tooth loss is higher than aesthetic expectations.

Oral and dental diseases are preventable diseases (Peres&,et al.,2019). Regular visits to the dentist every 6 months are important both for early diagnosis and treatment (Riley &,et al.,2013); because they reduce the need for higher-cost treatment when the disease progresses. In our study, nearly 40% of the BMAU

group and 50% of the TU group visited the dentist within 6 months. According to these results, it was seen that the attitudes of both universities towards oral and dental health checks were insufficient. The last reason for visiting the dentist; it is indicated for toothache, tooth decay, calculus removal, root canal treatment, and control purposes. In the study of Arıkan et al. (Arıkan&,et al.,2019) on prospective physicians, the rate of those who visited the dentist within 6 months was 23.4%. The reason for the last visit to the dentist was for toothache and abscess, control, tooth extraction, filling, and calculus removal. In terms of the rate of going to the dentist in 6 months, our study was found to be higher than this study, while the reasons for the last visit to the dentist were similar to our study.

In researches, it is recommended to brush regularly at least twice a day to reduce dental caries and periodontal problems (Al-Hussaini&, et al.,2003; Nguyen&, et al.,2008). In our study, the number of people brushing 2 or more times a day was 47.3% in the BMAU group and 53.9% in the TU group; the number of people brushing once a day was 37.9% in the BMAU group and 34.4% in the TU group. In a study conducted by Basak et al. (Başak&Küçük,2021) on university personnel, the rate of those who brushed twice a day or more was 49.2%; the number of people brushing once a day was found to be 40.2%. The results of this study are similar to our study. However, these rates are lower than the research conducted on university students in Japan. According to this research, the number of those who brushed twice or more a day was 86.6% of the participants, and the number of those who brushed once or less a day was only 13.4% of the participants (Taniguchi-Tabata&, et al.,2017).

Dental plaques are organic deposits that adhere tightly to the surface of the teeth and contain bacteria (Gökalp&, et al.,2007). If the plaque is not removed, gum diseases and dental caries are seen. For this reason, it is necessary to start the brushing process bythe eruption of the first teeth (Subcommittee & Dentistry, 2015). In our study, the rate of those who brushed their teeth before the age of 6 was below 50% for both groups and was 15.4% in the BMAU group, while this rate was higher for the TU group as 40.6%. These results show that both university personnel is late in starting brushing. In the study conducted by Agadayi et al. (Agadayı&, et al.,2018) on patients who applied to family physicians, the average age of starting brushing was found to be 12, and similar to our study, the participants were quite late to start brushing. These results show that parents should be warned about the need to start brushing immediately after the children's teeth begin to erupt.

In our study, more than 50% of the participants in both groups stated that they brushed their teeth for 1-2 minutes. The number of people who change their toothbrushes every 3 months is low and below 40% for both groups. In both groups, more than 60% of the participants stated that they preferred a medium-hard toothbrush. In the study conducted by Kaya et al. (Kaya &, et al.,2019) among the families of primary school students, 60.1% of the participants stated that they brushed their teeth between 1-3

minutes. In the same study (Kaya &, et al.,2019), the rate of those who changed their toothbrush every 3 months was determined as 63.9% and this rate was found to be higher than our study. Changing the toothbrush every 2-3 months can reduce the number of bacteria a person is exposed to (Saini & Saini, 2010). For this reason, toothbrush replacement should be done every 2-3 months.

Microbial dental plaque is the main factor responsible for the formation of both dental caries and inflammatory periodontal diseases (Attin & Hornecker, 2005). Therefore, it is necessary to remove the plaque regularly by brushing your teeth. Gum bleeding is also a symptom of gum disease due to not removing plaque. Among our survey participants, the number of those who stated that gingival bleeding while brushing was not normal in both groups (76.3% in the BMAU group; 68% in the TU group) was quite high. While the number of those who think that the best time to brush their teeth is half an hour after meals is 45% for the BMAU group, this rate is determined as 34.4% for the TU group. Those who are aware that plaque is the cause of gingival bleeding and dental caries is around 50% in both groups. When tooth hard tissue undergoes an acid attack, mineral loss occurs at a depth between 0.2 and 3.0 μm, while surface hardness decreases and creates a softer surface layer, leaving the tooth more vulnerable to abrasive effects such as tooth brushing (Lussi&, et al.,2011). For this reason, it is recommended that individuals wait between 30 minutes and 1 hour to brush their teeth after consuming abrasive food or drink (Lussi&, et al.,2014).

Toothpaste is used as an important tool for improving the oral health of individuals and communities, especially for the intake of fluoride, as well as the active ingredients in its content (Cury & Tenuta, 2014). Many factors play a role in the selection of toothpaste; these can be counted as factors such as brand, packaging, family effect, price (Opeodu & Gbadebo, 2017). In a study by Özdoğan et al. (Özdoğan Gümüşok, & Sarıçam, 2020) in the selection of toothpaste; it has been seen that the participants have aesthetic concerns and pay attention to the whitening feature of the toothpaste, and also to the fact that it has herbal content. In our study, the participants in both groups gave more importance to the use of a more effective toothpaste against tooth decay and gum disease, as well as the full protection feature of the toothpaste.

In our study, the auxiliary products used in oral and dental health were insufficient for both groups, and mouthwash (41.4% in BMAU group; 60.2% in TU group), dental floss (around 30% for both groups) were the most used ones. Waterflosser (3.6% in BMAU group; 10.2% in TU group) and use of electronic toothbrush (13.6% in BMAU group; 13.3% in TU group) were found to be quite low for both groups.11.2% of the BMAU group stated that they did not use any auxiliary products, and 7.8% of the TU group in the study of Bhattarai et al. (Bhattarai, Khanal, Rao, & Shrestha, 2016) on nursing students, similar to our study, the use of auxiliary oral and dental health products was low. In this study, 10%

dental floss, 34.7% tongue cleaner, 81.6% mouthwash, 2.4% interface brush use were reported. Although tooth brushing is the most common and reliable method of mechanical plaque control, it is insufficient to remove plaque from the proximal surfaces of the teeth (Claydon, 2008). To improve oral hygiene, public awareness should be raised about the use of dental floss and mouthwash, and oral care procedures that assist with mechanical cleanings, such as tongue cleaning, in addition to tooth brushing.

Participants were also asked questions about nutrition and dental caries. In these questions, consumption of snacks and acidic beverages such as chocolate, biscuit, and cake was found to be high for both groups. In the study by Basak et al. (Başak&Küçük,2021), consumption of acidic food was found to be low, nearly 50% of the participants stated that they consumed acidic food, while those who consumed sugary food every day were 45.9% and those who consumed it every 2-3 days was 29.5%. Cheese, which is seen as a caries preventative food, contains calcium and phosphate ions, which are effective in preventing caries, as well as casein, a protein with anti-cariogenic properties, as well as stimulating saliva flow, which increases oral pH (Moynihan, 2000). Those who know that cheese has a lower caries potential than french fries, raisins, bread and bananas were higher in BMAU group (43.8%) than TU group (29.7%).

Fluoropatite, fluorohydroxylapatite and calcium-fluoride formation that is resistant to acid attacks occurs with systemically or topically applied fluor (Ergin & Eden, 2017). Those who know that fluor has an anticariogenic effect were higher in the TU group (39.8%) than in the BMAU group (32.5%) and the adequacy of knowledge about fluor was quite low for both groups. Similarly, in the study of Jahandideh et al. (Jahandideh & Tüloğlu, 2019) on parents, it was found that parents heard fluor only as a noun; however, they found that they did not have enough information about the effect, harms, or correct use of fluorinated products. When these results are evaluated, it has been observed that the effect of fluor in preventing dental caries should be explained to the public, and dentists, educators, and the media have great duties in promoting the use of fluoridated products.

Both university staff stated that they prefer private clinics for dental treatments and controls. The reason for this preference may be that private practice rooms are relatively less crowded than public hospitals and university hospitals due to Covid 19. The answers given in both universities to the question of what do you do in case of any difference you observe in your dental and gingival health are similar. In both groups, around 45% of the participants stated that they would go to the dentist in such a situation, while around 20% stated that they would take individual preventive oral and dental health measures. The answer was given to the question "Are you afraid of going to the dentist?" was no around 70% in both groups. Studies are reporting that a lower education level is associated with higher anxiety levels

(Nicolas&, et al.,2007). For this reason, the high level of education of the university staff participating in our study may be associated with a low level of fear of the dentist.

6. CONCLUSIONS

The knowledge, attitudes, and behaviors of Burdur Mehmet Akif Ersoy University and Tetova University participants about oral and dental health were found to be similar in general. Both university staff is aware that oral and dental health is an inseparable part of general health; however, it has been concluded that there are deficiencies in oral and dental health practices. It has been observed that the staff of Burdur Mehmet Akif Ersoy University and Tetova University regarding tooth brushing, their use of auxiliary oral and dental health products are insufficient and they hinder regular dental check-ups. The level of knowledge about foods with anti-cariogenic properties such as cheese and fluorine is quite low. It has been revealed that there is a need to increase the knowledge, attitude, and behavior levels of university personnel about oral and dental health through training and to raise awareness about the effect of fluor on caries prevention. Improving the oral and dental health of university staff; it is important because it will also contribute to social health.

Conflıct Of Interest

No conflict of interest was declared by the authors.

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