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Exploring the Role of Sociodemographic Factors in Influencing Dental Floss Knowledge and Practices among Adults in Sebha City, Libya: A Cross-Sectional Study

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Abstract

Dental diseases are influenced by several sociodemographic factors. This study aims to examine the impact of age, education, and occupation on the knowledge and use of dental floss among adults in Sebha, Libya**.** A cross-sectional study was conducted among 601 adults in Sebha City using a structured questionnaire. Data were collected on participants' sociodemographic characteristics, and dental floss knowledge and practices. Descriptive statistics and Pearson's chi-square test were employed to analyze the relationships between variables. Out of 601 respondents, 54.4% had general knowledge about dental floss, but only 31.4% reported using it. Females demonstrated better oral hygiene practices, with 41% using floss, compared to 19% of males. Significant differences in flossing habits were observed based on age, education, and occupation, with younger individuals and those with higher educational levels showing greater knowledge and better practice. Additionally, socioeconomic status was a strong determinant of interdental cleaning practice. In conclusion, sociodemographic factors significantly affect dental floss knowledge and practice in Sebha. Public health initiatives should focus on improving education and access to dental care, particularly for lower-income and less-educated groups. The study highlights the need for targeted public health initiatives to promote dental floss usage, particularly among socioeconomically disadvantaged groups.

Keywords: Dental Hygiene, Dental Floss, Knowledge, Oral Health Practice, Sociodemographic Factors.

INTRODUCTION

The prevalence and incidence of dental caries and periodontal diseases are influenced by more than just biological factors. Socioeconomic, educational, and environmental conditions play a significant role in the development of oral diseases (Bastos et al., 2009). Various studies have asserted that social inequalities are closely linked to disparities in oral health outcomes, with individuals from lower socioeconomic groups experiencing a higher burden of these conditions compared to those from more affluent backgrounds (Ahmadi et al., 2019; Elani et al., 2012; Sabbah et al., 2009; Sisson, 2007).

According to 2019 epidemiological data from the World Health Organization (WHO), the prevalence of severe periodontal disease in Libya in people aged 15 and older was estimated at 15.3%, with 36% of individuals aged 5 and older exhibiting untreated dental caries, measured using the

Decayed, Missing and Filled Teeth (DMFT) index. Furthermore, the rate of complete tooth loss among individuals over the age of 20 was reported to be 7.6% (WHO, 2022). Sebha city is the major city in southern Libya, approximately 640 kilometers south of Tripoli, where there is a lack of research on oral health. The two existing studies, by Hassan (2000) and Peeran et al. (2013), demonstrated that oral hygiene in Sebha was poor. Hassan (2000) reported that 54% of tooth extractions were due to cavities, while 41% were related to periodontal disease. Also, Peeran et al. (2013) highlighted periodontal disease as a significant dental issue in this population.

Dental plaque is a primary etiological factor and a major contributor to the onset of chronic periodontal disease (Abdalrahman, 2022; Almagtouf et al., 2024; Kida et al., 2006) and proximal dental caries (Featherstone, 2003), which can be mitigated through effective interdental cleaning with tools such as dental floss (Sambunjak et al., 2011). Dental biofilm tends to accumulate on proximal surfaces, the areas between teeth, where it triggers gingival inflammation and can advance to periodontitis (Rahouma et al., 2022; Terézhalmy et al., 2008). Furthermore, proximal dental plaque, which occurs between adjacent teeth, is particularly unreachable due to improper interdental cleaning. Dental caries and periodontal diseases remain the main causes of tooth loss (Doshi et al., 2007), leading to functional problems such as difficulties in chewing and speaking, along with aesthetic and social challenges. These complications tend to be more pronounced among individuals from lower socioeconomic backgrounds who may face significant barriers to accessing rehabilitative dental care, such as dentures (Frias et al., 2012).

Regular and effective removal of interdental plaque has been shown to significantly reduce both the prevalence and severity of gingivitis (Greenwell, 2001) and proximal caries (Sambunjak et al., 2011). However, toothbrushing is often insufficient in eliminating plaque from proximal surfaces (Corby et al., 2008). To be more specific, a toothbrush alone cannot fully remove plaque from the spaces between teeth. Therefore, various interdental cleaning tools are available, such as dental floss, wooden sticks, interdental brushes, single-tuft brushes, rubber-tip stimulators, and irrigators (Worthington et al., 2019). According to the American Dental Association, dental floss is the most widely used method for cleaning teeth (Sambunjak et al., 2011). Previous research showed that dental floss alone is more effective than a manual toothbrush for removing interdental plaque from the areas between teeth, yet its use, even as an addition to regular brushing, is not widely practiced globally (Corby et al., 2008; Gufran et al., 2015) and is more common in developed nations (Goryawala et al., 2016). Therefore, proper tooth-cleaning techniques should emphasize thorough cleaning of all tooth surfaces, particularly the interdental areas, which are the most challenging to clean (Butt et al., 2017).

Lack of knowledge and financial constraints are key reasons for non-compliance with oral hygiene routines (Awartani, 2009). Additional factors were identified that linked to low dental flossing rate and affected oral health practices in adults; included socioeconomic status (Neamatollahi & Ebrahimi, 2010; Soofi et al., 2020a), educational level (Peeran et al., 2015), urbanization (Gaber et al., 2018), gender (Elani et al., 2022) and type of dental cleaning tool (Tarannum et al., 2012).

Due to the wide variety of factors influencing an individual's daily oral hygiene as well as the limited studies explored the social determinants of dental floss usage among adults in Libya, this study aimed to examine the impact of sociodemographic factors on the use and knowledge of dental floss. Insights from this research could guide public health initiatives designed to improve oral hygiene behaviours.

MATERIALS AND METHODS

Study design
A cross-sectional study design was carried out amongst the selected population of patients residing in Sebha City.

Study population and participants
The study population consisted of Libyan adults aged 18 years and older residing in Sebha City, Libya. Exclusion criteria were patients from nationalities other than Libya, and patients younger than 18 years old.

Sample size and sampling procedure
A total of 601 subjects were selected using a simple random sampling method from patients who visited public dental clinics in Sebha. The appropriate sample size for this study, based on a target population of 217,880 individuals (Sakhnoub, 2024), was calculated using the Krejcie and Morgan (1971) formula for a finite population, which estimated a sample size of 384 individuals. However, our final sample exceeded this estimate, reaching 601 participants.

Data collection
Data were collected from January to August 2023. A structured, questionnaire-based face-to-face interview was conducted. Since there was no standardized questionnaire, a new instrument was created. Initially, the instrument consisted of 18 questions and was administered in a pilot study of 25 patients for validation.

The final version consisted of 15 items, which fulfilled the study objective. The knowledge variables used in the analysis included five items, while the practice variable included four items. Socioeconomic indicators included levels of education and occupation classification. The education variable used in the analysis included three groups: having a high education (university degree or higher), lower education (high school and below), and no education.

Occupation classification was based on the three-class version of the national statistics socioeconomic classification and included four groups: professional, intermediate, manual, and never worked. Other variables used in the analysis were age (18-30, 31-45, 46-65, 65+), sex (male, female), frequency of tooth brushing (none, once a day, twice a day), and use of dental floss (yes, no).

Statistical Analysis
Data entries and analysis of results were carried out using SPSS for Windows (version 23.0, SPSS, Chicago, IL, USA) statistical software package. Descriptive statistics such as frequencies and percentages were calculated. Pearson Chi-square test was used to identify the difference between variables. The P-value was fixed at 0.05.

RESULTS

A total of 601 complete questionnaires were analyzed. Table 1 summarizes the participants' sociodemographic characteristics. More than half (54.1%) of the respondents were females, with more than one-third (34.4%) of the age group between 18-30 years. Almost half (49.9**%)** of respondents received a higher education.

Table (1). Demographic and Socioeconomic Characteristics of Participants (N=601)

Variable	Category	n	%
Gender	Male	276	45.9
	Female	325	54.1
Age Group	18–30 years	207	34.4
	31–45 years	198	32.9
	46–65 years	178	29.6
	Older than 65 years	18	3.0
Occupation	Unemployed	45	7.5
	Professional	108	18.0
	Intermediate	216	35.9
	Manual	232	38.6
Education Level	No Education	60	10.0
	Low Education	241	40.1
	High Education	300	49.9

Table 2 presents the knowledge and practice of the surveyed adults toward dental flossing. It was found that 43.4% of individuals were aware that brushing teeth alone without dental floss is insufficient to clean all tooth surfaces. However, 64.6% of the respondents believed that dental floss causes bleeding of the gums. Moreover, 54.4% of patients had general knowledge about dental floss. In addition, 41.9% of them thought that dental floss polishes the tooth surface as it removes dental plaque and debris. Furthermore, 52.9% believed that dental floss reduces gingival inflammation preventing periodontal disease. In terms of practice, only 31.4% of the respondents reported using dental floss. Nevertheless, 50.4% of patients stated that their dentist had explained how to use dental floss during an appointment. Additionally, 40.6% of dental clinic attendees were advised to practice using dental floss. On the other hand, a high percentage, 83.9% of respondents, had used wooden or rubber interdental cleaning picks (Table 2).

Table (2). Knowledge and Practice of the Participants toward Dental Foss

	Questions related to knowledge about dental floss	Response				Total	
		Yes		No			
		N	%	N	%	N	%
1.	Do you know that; tooth brushing alone is not sufficient to clean all tooth surfaces?	261	43.4	340	56.6	601	100
2.	Do you think that dental floss can cause bleeding in the gum?	388	64.6	213	35.4	601	100
3.	Do you have any knowledge about dental floss?	327	54.4	274	45.6	601	100
4.	Do you know that dental floss is essential to remove plaque and debris from the interdental area?	252	41.9	349	58.1	601	100
5.	Do you think that the use of a toothbrush and dental floss can prevent periodontal disease?	318	52.9	283	47.1	601	100
	Questions related to practice about dental floss	Response				Total	
		Yes		No			
		N	%	N	%	N	%
6.	Do you use dental floss?	189	31.4	412	68.6	601	100
7.	During your dentist appointment, did your dentist explain to you how to use dental floss?	303	50.4	298	49.6	601	100
8.	Did anyone recommend you to practice dental flossing?	244	40.6	357	59.4	601	100
9.	Have you used wooden or rubber interdental cleaning picks?	504	83.9	97	16.1	601	100

Figure 1 describes and compares the teeth brushing and dental flossing of males and females. A statistically significant higher percentage (68%) of females brush twice daily, compared to 48% of males. Regarding dental floss usage, 41% of females reported incorporating it into their oral hygiene routine, compared to only 19% of males. On the other hand, a statistically significant higher percentage (80%) of males refrain from using dental floss, as compared to 58% of females who do not floss. The data indicated that females demonstrate more consistent oral hygiene habits than males, both in terms of brushing frequency and the use of dental floss.

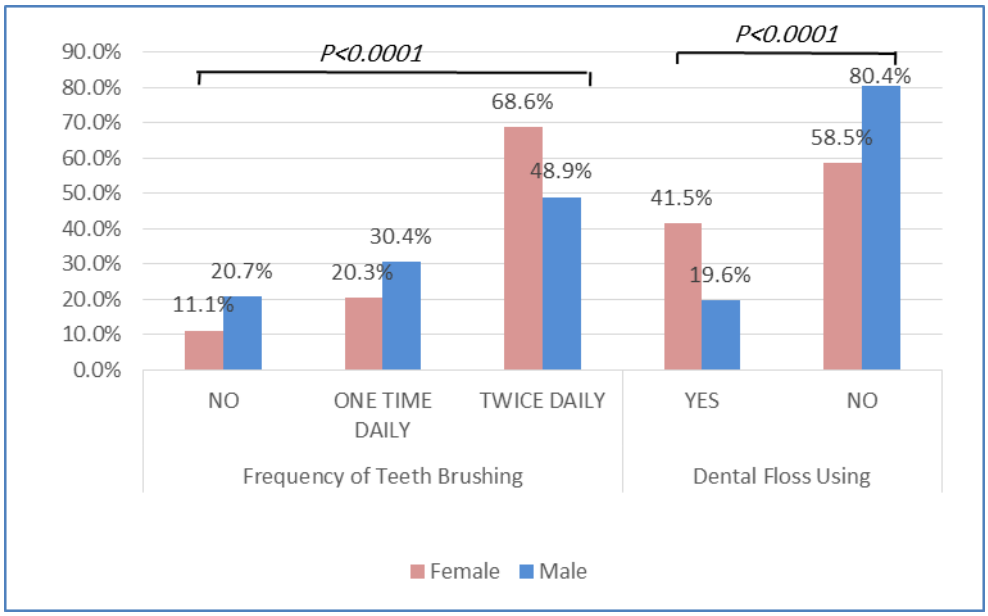

Figure (1). Comparison of Dental Hygiene Behaviors (Brushing and Flossing) by Gender

Table 3 illustrated the significant association between age, education, and occupation levels with the knowledge of dental floss benefits. Among age groups, respondents aged 18–30 years (65.2%) reported the highest affirmative responses, particularly for general dental floss knowledge. Higher education levels (84%) strongly correlated with better dental floss knowledge, with those having advanced education showing significantly higher positive responses compared to individuals with lower (25%) or no education. Intermediate (44.4%) and professional workers (58.3%), especially those with higher incomes, reported better interdental cleaning practices.

Table 4 represents the association between age, education, and occupation levels with the practice of dental floss. Age, education, and occupation significantly impact dental floss usage and interdental cleaning practices. Respondents aged 18–30 years old (40.6%) were most likely to use dental floss. Education strongly influenced flossing behaviours, with higher education levels linked to higher flossing rates (49%) and the use of interdental picks (87%), while those with no or lower education reported significantly lower engagement in these practices. The occupational also played a role, with professionals flossing (36.1%) more frequently. Although manual laborers (78.9%) and those in intermediate occupations (94.4%) showed higher adoption of interdental cleaning picks than professionals (75%), despite the latter's generally better dental care practices.

Table (3). Association between age, education, and occupation levels with the knowledge of dental floss.

Sociodemographic Characteristics		Q1	p value	Q2	p value	Q3	p value	Q4	p value	Q5	p value
Age groups											
18-30 years	Yes	129 (62.3%)		138 66.7%)		135 (65.2%)		123 (59.4%)		132 (63.8%)	
	No	78 (37.7		69 (33.3%)		72 (34.8%)		84 (40.6%)		75 (36.2%)	
31-45 years	Yes	72 (36.4%)		117 (59.1%)		111 (56.1%)		75 (37.9%)		108 (54.5%)	
	No	126 (63.6%)		81 (40.9%)		87 (43.9%)		123 (62.1%)		90 (45.5%)	
46-65 years	Yes	54 (30.3%)	0.000	124 (69.7%)	0.083	72 (40.4%)	0.000	45 (25.3%)	0.000	66 (37.1%)	0.000
	No	124 (69.7%)		54 (30.3%)		106 (59.6%)		133 (74.7%)		(112 (62.9%)	
More than 65 years	Yes	6 (33.3%)		9 (50%)		9 (50%)		9 (50%)		12 (66.7%)	
	No	12 (66.7%)		9 (50%)		9 (50%)		9 (50%)		6 (33.3%)	
Level of education											
No Education	Yes	9 (15%)		36 (60%)		15 (25%)		9 (15%)		9 (15%)	
	No	51 (85%)		24 (40%)		45 (75%)		51 (85%)		51 (85%)	
Lower Education	Yes	9 (3.7%)		115 (47.7%)		60 (24.9%)		18 (7.5%)		36 (14.9%)	
	No	232 (96.3%)	0.000	126 (52.3%)	0.000	181 (75.1%)	0.000	223 (92.5%)	0.000	205 (85.1%)	0.000
Higher Education	Yes	243 (81%)		237 (79%)		252 (84%)		225 (41.9)		273 (91%)	
	No	57 (19%)		63 (21%)		48 (16%)		75 (25%)		27 (9%)	
Occupation groups											
Unemployed	Yes	9 (20%)		24 (53.3%)		12 (26.7%)		9 (20%)		18 (40%)	
	No	36 (80%)		21 (46.7%)		33 (73.3%)		36 (80%)		27 (60%)	
Manual	Yes	87 (37.5%)		124 (53.4%)		117 (50.4%)		84 (36.2%)		99 (42.7%)	
	No	145 (62.5%)	0.000	108 (46.6%)	0.000	115 (49.6%)	0.000	148 (63.8%)	0.000	133 (57.3%)	0.000
Intermediate	Yes	102 (47.2)		162 (75%)		138 (63.9%)		96 (44.4%)		138 (63.9%)	
	No	114 (52.8%)		54 (25%)		78 (36.1%)		120 (55.6%)		78 (36.1%)	
Professional	Yes	63 (58.3%)		78 (72.2%)		60 (55.6%)		63 (58.3%)		63 (58.3%)	
	No	45 (41.7%)		30 (27.8%)		48 (44.4%)		45 (41.7%)		45 (41.7%)	
Total		601		601		601		601		601	

p value < 0.05= Significant. Q1: Do you know that; tooth brushing alone is not sufficient to clean all tooth surfaces? Q2: Do you think that dental floss can cause bleeding in the gum? Q3: Do you have any knowledge about dental floss? Q4: Do you know that dental floss is essential to remove plaque and debris from the interdental area? Q5: Do you think that the use of a toothbrush and dental floss can prevent periodontal disease?

Table (4). Association of age, education, and occupation levels with the practice of dental floss.

Sociodemographic factors	Response	Q6	p value	Q7	p value	Q8	p value	Q9	p value
Age groups									
18-30 years	Yes	84 (40.6%)		114 (55.1%)		78 (37.7%)		168 (81.2%)	
	No	123 (59.4%)		93 (44.9%)		129 (62.3%)		39 (18.8%)	
31-45 years	Yes	63 (31.8%)		87 (43.9%)		81 (40.9%)		177 (89.4%)	
	No	135 (68.2%)	0.000	111 (56.1%)	0.071	117 (59.1%)	0.534	21 (10.6%)	0.000
46-65 years	Yes	30 (16.9%)		90 (50.6%)		79 (44.4%)		150 (84.3%)	
	No	148 (83.1%)		88 (49.4%)		99 (55.6%)		28 (15.7%)	
More than 65 years	Yes	12 (66.7%)		12 (66.7%)		6 (33.3%)		9 (50%)	
	No	6 (33.3%)		6 (33.3%)		12 (66.7%)		9 (50%)	
Level of education									
No Education	Yes	15 (25%)		33 (55%)		21 (35%)		48 (80%)	
	No	45 (75%)		27 (45%)		39 (65%)		12 (20%)	
Lower Education	Yes	27 (11.2%)		96 (39.8%)		82 (34%)		195 (80.9%)	
	No	214 (88.8%)	0.000	145 (60.2%)	0.000	159 (66%)	0.006	46 (19.1%)	0.111
Higher Education	Yes	147 (49%)		174 (58%)		141 (47%)		261 (87%)	
	No	153 (51%)		126 (42%)		159 (53%)		39 (13%)	
Occupation groups									
Unemployed	Yes	12 (26.7%)		15 (33.3%)		27 (60%)		36 (80%)	
	No	33 (73.3%)		30 (66.7%)		18 (40%)		9 (20%)	
Manual	Yes	69 (29.7%)		108 (46.6%)		85 (36.6%)		183 (78.9%)	
	No	163 (70.3%)	0.592	124 (53.4%)	0.014	147 (63.4%)	0.019	49 (21.1%)	0.000
Intermediate	Yes	69 (31.9)		117 (54.2%)		93 (43.1%)		204 (94.4%)	
	No	147 (68.1%)		99 (45.8%)		123 (56.9%)		12 (5.6%)	
Professional	Yes	39 (36.1%)		63 (58.3%)		39 (36.1%)		81 (75%)	
	No	69 (63.9%)		45 (41.7%)		69 (63.9%)		27 (25%)	
Total		601		601		601		601	

p value < 0.05= Significant Q6: Do you use dental floss? Q7: During your dentist appointment, did your dentist explain to you how to use dental floss? Q8: Did anyone recommend you to practice dental flossing? Q9: Have you used wooden or rubber interdental cleaning picks?

DISCUSSION

Dental floss has been used since ancient times, but Levi Spear Parmly, a dentist from New Orleans, is credited with inventing modern dental floss. He recommended using a piece of silk thread for flossing in 1815 (Sanoudos & Christen, 1999). This led to the development of the dental floss we use today, which has evolved since then (Chernin & Shklar, 2003).

Although using dental floss alongside regular tooth brushing is commonly recommended for preventing gum disease, global statistics show low usage rates (Poklepovic et al., 2013; Eke et al., 2018). Toothbrushing and dental flossing were found to be less common among individuals with lower socioeconomic status (Fleming et al., 2018; Soofi et al., 2020b). The use of dental floss, in particular, was shown to decrease as its price increases. This highlights the importance of understanding how sociodemographic factors, such as age, education, and occupation, influence the knowledge and practice of dental flossing habits among subjects to identify gaps and help guide appropriate actions. Despite global evidence highlighting disparities in flossing behavior across various demographic groups, there remains a lack of local data from Libya. This study aims to address that gap by focusing on a specific Libyan population. To the best of our knowledge, it is the first study to explore the role of sociodemographic factors in influencing dental floss knowledge and practices within the Libyan context.

While the current study focused on the Libyan population, similar studies have been conducted in neighboring countries. In Tunisia, a study reported poor interdental cleaning practices among Tunisian dental students, with socioeconomic status playing a significant role in oral hygiene behaviors (Jemli et al., 2007). Ogunbodede et al. (2015) also highlighted regional disparities in oral health outcomes, noting that underserved populations in the African and Middle East regions exhibited lower access to and use of dental care tools. Findings from Jordan and Saudi Arabia corroborate this pattern, where limited floss use and reliance on traditional tools such as miswak or wooden sticks remain prevalent (Baseer et al., 2012; Tubaishat et al., 2005). These similarities suggested a regional pattern of oral health behavior influenced by socioeconomic, educational, and cultural factors.

The most interesting finding was that only 31.4% of participants used dental floss. Similar results were found in other studies, with 31.9% of American adult patients and 28.4% of Japanese patients using floss, as reported by Fleming et al. (2018) and Haresaku et al. (2023), respectively. In contrast, Hamilton and Coulby (1991) found that a high percentage (44%) of Canadians in northeastern Ontario used dental floss. The reason for this may be the educational program that is carried out in Canada, which is lacking in our society. This emphasizes the urgent need to educate and motivate the public to use this efficient method for oral healthcare.

Although the United States has established goals to reduce disparities in oral health, Su et al. (2022) observed that American females floss more frequently than males. Our study reflects a similar pattern, with female respondents reporting higher flossing frequency than their male counterparts, thereby reinforcing evidence of persistent gender-based differences in oral hygiene behaviors. Females tend to be more concerned with facial appearance and are strongly influenced by current dental aesthetics, often leading to greater attention to oral care behaviors such as toothbrushing and flossing. This increased focus on oral hygiene positively impacts their overall oral health. This may be due to social norms and communication styles that discourage men from seeking or engaging in discussions about personal health matters, potentially resulting in men receiving less comprehensive health information and pieces of advice (Pinkhasov et al., 2010). Additionally, frequent preventive

dental visits and discussions during these appointments may play a role in enhancing oral health. Regular dental check-ups grant more opportunities for education and reminders about the importance of oral care, leading to better oral hygiene practices.

Only half (50.4%) of the present study contributors reported dentists as the source for their information concerning oral hygiene practices, including interdental cleaning, which was higher than that reported in textbooks and findings of Ehizele et al. (2011) and Kamil and Bashir (2017) studies, which were 32.8% and 10.2%, respectively. Since daily flossing is uncommon in Libya, it is likely that dental professionals may not regularly recommend flossing to their patients. This is supported by an Indian study (Goryawala et al., 2016), which found that 36.1% of dentists in academic institutions did not routinely prescribe dental floss for interdental plaque control. This might also be the case in Sebha where many dentists in public clinics consider patient's education, occupation, and socioeconomic status important when prescribing dental floss. The low rate of floss prescriptions may be due to the assumption that most patients visiting these clinics come from lower socioeconomic backgrounds.

Our findings also indicated that a significant majority of patients (83.9%) preferred using traumatic wooden interdental cleaning picks, a finding consistent with the results of Ehizele et al. (2011), who reported a similar preference rate of 84.7%. This widespread use of wooden picks may be attributed to their availability, affordability, or cultural factors. However, the preference rate observed in this study was remarkably higher than those reported in other studies. For instance, Awartani (2009) found a preference rate of 37%, while Al-Johani (2008) and Neamatollahi and Ebrahimi (2010) reported rates of 35.6% and 52%, respectively. These discrepancies may reflect differences in patient demographics, awareness of oral hygiene practices, or accessibility to alternative interdental cleaning tools across different populations. Further investigation is needed to understand the underlying reasons for these variations and their potential impact on oral health outcomes.

As seen in the results section, age, education, and occupation have significantly affected dental flossing habits. Younger individuals and those with higher education are more likely to floss regularly. These results aligned with existing literature (Galdas et al., 2005), which emphasizes the role of education in shaping health behaviours. Given these findings, public health initiatives should prioritize raising awareness about the importance of flossing, particularly among older adults and individuals with lower education levels, who may be less familiar with proper oral hygiene practices. Additionally, targeting lower-income groups may help reduce disparities in oral hygiene practices. Occupational status emerged as the least prominent factor but still indicated notable trends. Those in manual labour or intermediate roles demonstrated higher adoption of interdental cleaning practices, which could suggest that these groups are more responsive to health recommendations despite their lower overall socioeconomic status. Although professionals occasionally faced challenges, possibly due to time constraints.

The current study revealed significant differences in responses to knowledge-based questions according to the studied sociodemographic factors. Higher education levels were linked to greater awareness of the benefits of dental floss, emphasizing the role of education in oral health. Similarly, Khanal et al. (2015) and (Mårtensson et al., 2006) concluded that education status significantly affected knowledge of oral hygiene, as higher education is associated with greater knowledge. In addition, younger individuals and those in professional occupations are more likely to know about and use interdental cleaning tools. These findings highlight the need for educational interventions by dental professionals, particularly for older or less educated populations, to increase flossing awareness and practices. Public health campaigns should focus on increasing awareness of the importance

of dental flossing, especially among older adults and individuals with lower education levels. Additionally, interventions targeting lower-income groups could help address the disparities in oral hygiene practices identified in this study.

LIMITATIONS

While this study provided important insights, it is important to recognize certain limitations. The cross-sectional design hinders the ability to confirm causal relationships between sociodemographic factors and dental flossing habits. Additionally, reliance on self-reported data opens the possibility of recall bias or social desirability bias, potentially impacting participants' responses. Furthermore, the research was confined to Sebha City, hence diminishing the applicability of the results to other areas in Libya or wider populations. Another constraint was the lack of clinical evaluations, as the data relied solely on survey answers without any clinical confirmation of the respondents' oral health condition. Also, the sampling method, which included enlisting individuals from public dental clinics, may have introduced bias by excluding those who do not access dental services or visit private practices. Finally, this research did not thoroughly investigate the qualitative aspects of dental floss usage, such as cultural norms and psychological obstacles. So future research is recommended to explore the role of these factors in oral hygiene practices.

CONCLUSION

Sociodemographic factors significantly influence dental floss knowledge and practice, and interventions should focus on improving education and accessibility to dental care tools like dental floss. Public health strategies should prioritize older adults, less educated individuals, and men, who were shown to engage less frequently in proper oral hygiene routines.

ETHICS

Ethical clearance for the study was obtained from the ethics review and research board of the Faculty of Dentistry, University of Benghazi, Libya.

Duality of interest: The authors declare that they have no duality of interest associated with this manuscript.

Author contributions: Contribution was equal between authors**.**

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