ORIGINAL ARTICLE

Assessment of Clinical Proficiency Versus Academic Awareness Regarding Periodontal Care Among Dental Practitioners

Sania Riaz[1] **BDS, MSc**
Maaz Asad[2] **BDS, MDSc**
Muhammad Taqi[3] **BDS, PhD**
Asaad Javaid[4] **BDS, MDS**
Nida Tariq[5] **BDS**
Fizza Khalid[6] **BDS, MSc**

OBJECTIVE: To determine the knowledge of dentists regarding periodontitis with its application in their clinical practices.
METHODOLOGY: A descriptive cross-sectional study was conducted at Baqai Medical University A content and face validated self-administered questionnaire was distributed electronically and physically, and no personal identifying information was collected from the respondents to maintain their concealment and anonymity. All practicing graduate dental practitioners, including general dentists and postgraduates, were approached. The questionnaire was divided into three sections. The first section covered the participants' demographic data, including gender, designation, and clinical experience. In the second section, dentists were given a 3-point Likert scale ranging from disagree, undecided, and agree to mark their knowledge regarding the most prevalent periodontal condition, and it contained seven close-ended questions. The remaining seven close-ended questions in the last section covered the practices and attitudes of dentists, correlating with the knowledge asked in the first section. The responses to practice questions ranged from never, sometimes, and always. The data was analyzed by using a chi-square test. Responses to a three-point Likert scale related to knowledge and practice were recorded. Later, a cross tab was used to compare practitioners responses regarding knowledge and their practices. A level of significance was set at less than 0.05.
RESULTS: Out of 323 dentists who received the questionnaire, 100% filled the survey form correctly requiring no rejection. With the correlation coefficient, it is understood that there is a positive response to the knowledge of treating periodontitis patients as compared to their clinical implications.
CONCLUSION: It was analyzed that most of the dental clinicians showed profound theoretical knowledge on the subject but regrettably not all of them applied their knowledge to clinical practice for improving patients' oral hygiene or awareness about the relevant issues.
KEYWORDS: Periodontitis, Knowledge, attitude, clinical implication
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INTRODUCTION

Periodontitis, the most common infection of the oral cavity, is an inflammatory disorder affecting both soft and hard tissues, leading to the loss of tooth-supporting structures.[1] According to the Global Burden of Disease Study (2016), periodontal disease ranks as the 11th most prevalent condition worldwide, impacting approximately 20% to 50% of the global population around 743 million individuals. Its prevalence increases with age, and with improved life expectancy, around 70% of the world population is above 65 years old.[2] The prevalence of periodontal disease in Pakistan follows a similar pattern, with rates of 37% in Punjab, 40% in Sindh, 20% in Khyber Pakhtunkhwa, and 3% in Baluchistan.[3]

Knowledge Translation (KT) is the process of ensuring that the best available evidence is effectively applied in clinical practice to improve health outcomes.[4] Although periodontitis is a common and serious dental disease with established evidence-based guidelines for diagnosis and

1. Assistant Professor, Department of Periodontology, Baqai Dental College, Baqai Medical University. Karachi, Pakistan.
2. Associate Professor, Department of Periodontology, Baqai Dental College, Baqai Medical University. Karachi, Pakistan.
3. Assistant Professor, Department of community Dentistry, Dow Dental College, Karachi, Pakistan.
4. Dean, Department of Faculty of Dentistry, Baqai Dental College, Baqai Medical University. Karachi, Pakistan.
5. Lecturer, Department of Periodontology, Baqai Dental College, Baqai Medical University. Karachi, Pakistan.
6. Assistant Professor, Department of Periodontology, Baqai Dental College, Baqai Medical University. Karachi, Pakistan.

Corresponding author: "Dr. Maaz Asad Javaid" < maazasad@live.com >

management, many dentists fail to consistently implement these guidelines in clinical practice. This gap between theoretical knowledge and clinical application is a critical issue.

The importance of KT arises from the observation that innovative research is often not widely adopted or fails to make a substantial impact on the health sector.[5] In fact, only about 14% of new research findings are incorporated into everyday healthcare practice[6], with the implementation process taking between 17 years[7] and 20 years.[8] KT has gained increasing attention due to growing demands for research governance and accountability from both governments and the public.[5] For instance, between 1988 and 2005, the Canadian Institutes of Health Research (CIHR) invested approximately $700 million in high-quality health research.[9] Despite significant financial investments in health research across North America, healthcare systems still struggle to implement cost-effective services.[10] For every $1 spent on new discoveries, only about $0.01 is allocated to disseminating that knowledge[11], creating a demand from both the government and the public for tangible health improvements derived from taxpayer-funded research. Integrating knowledge into clinical practice is essential, as demonstrated by several concerning trends in healthcare. For instance, approximately one-third (30-45%) of patients are not treated with interventions proven to be effective.[12] Furthermore, about one-fourth (20-25%) of patients receive unnecessary or potentially harmful interventions[10,13], resulting in adverse outcomes and inefficient resource use. In addition, up to three-quarters of patients do not receive adequate information to make informed decisions about their care[14], and as many as half of clinicians fail to use evidence-based knowledge when making clinical decisions.[13] These statistics underscore the need for KT to ensure the consistent application of the best available evidence in clinical practice, thereby reducing inefficiencies and improving patient outcomes.

There is substantial research on assessing dentists' knowledge of periodontal diseases.[15] However, despite being equipped with updated theoretical knowledge, evidence suggests that many general dentists do not implement this knowledge in their clinical practices.[15] Studies that compare dentists' theoretical knowledge with their actual clinical practices are scarce in low- and middle-income countries like Pakistan. This study aims to assess whether practicing dentists implement their theoretical knowledge of periodontitis in their clinical practice in Karachi, Pakistan, using self- constructed questionnaire. The findings will help identify necessary changes or improvements in the clinical training of undergraduate dental students, ensuring a better alignment between knowledge and practice.

METHODOLOGY

A descriptive quantitative cross-sectional survey was conducted from March 2022 to November 2022, using a non-probability convenience sampling technique. The sample size of 323 was determined using PASS version 15 with a 95% confidence interval, and 308 practitioners returned the filled form after obtaining verbal consent. The questionnaire was distributed electronically and physically, and no personal identifying information was collected from the respondents to maintain concealment and anonymity. All qualified practising dentists, including general dentists and postgraduates, were approached, while undergraduate dental students, dental hygienists, and dental technicians were excluded.

The survey questionnaire was developed by postgraduate faculty members specializing in Periodontics in the Department of Periodontology, Baqai Medical University, and a subject specialist working at a public university in Karachi. The questionnaire was divided into three sections. The first section covered the participants' demographic data, including gender, designation, and clinical experience. In the second section, dentists were given a 3-point Likert scale ranging from disagrees, undecided, and agree to mark their knowledge regarding the most prevalent periodontal condition, and it contained seven close-ended questions. The remaining seven close-ended questions in the last section covered the practices and attitudes of dentists, correlating with the knowledge asked in the first section. The responses to practice questions ranged from never, sometimes, and always.

A questionnaire pre-test was conducted on 20 participants not part of the main study to determine reliability, validity, comprehension, and the time it takes to complete. The form took an average of six minutes to fill out. An analysis of Cronbach's alpha was performed to determine the internal consistency between responses to the questions in both domains shown in Table 1.

Table 1: Cronbach's alpha (α) coefficient for the knowledge and practice questions (n = 20)

	Items	Cronbach's Alpha
Knowledge	**7**	**0.74**
Practice	**10**	**0.77**

An expert health professional assessed the content and face validity of the questionnaire, while another expert evaluated the construct validity of the pre-final version of the questionnaire. The final version questionnaire was drafted using the pilot data. The construct validity of questions in both domains was determined by calculating the Pearson's correlation coefficient r of respondents' responses for each

item with their total scores, as shown in Table 2. The questions with correlation scores greater than 0.44 were considered valid. The critical value was obtained from the Pearson correlation table.

Table 2: Pearson correlation coefficients for questions in both domains using a degree of freedom two and Critical value (.44)

Knowledge	Obtained value	*p*-value
Smoking is a major risk factor for periodontitis	.68	.001
Site of progression of periodontal disease is the interdental plaque	.57	.001
Periodontitis is an irreversible disease but largely preventable	.66	.001
Adjunct periodontal therapies bring an additional clinical advantage compared to scaling and root planing alone	.75	.001
Periodontal diseases is a risk factor for systemic conditions like CVD, diabetes, adverse pregnancy outcome	.63	.001
Diabetes has a bidirectional relationship with periodontal health	.54	.001
Correct diagnosis and treatment of periodontal problems rely on the clinical & radiographic assessment	.53	.002
Practice		
I provide smoking cessation counselling to known smokers	.68	.001
I thoroughly debride interdental areas while scaling and advise my patients to use interdental cleaning aids	.58	.007
I regularly provide oral hygiene motivation along with frequent maintenance to my patients in order to prevent periodontitis to occur	.56	.010
I provide adjunctive therapy along with scaling and root planing in moderate to severe cases of periodontitis	.45	.043
I provide local drug delivery	.55	.012
I educate my patients about the role of systemic disease in periodontitis and how directly it can worsen the disease status	.73	.001
I regularly maintain the systemic records of all my patients	.75	.001
I provide non- surgical periodontal therapy to controlled diabetic patients	.49	.026
I provide non-surgical periodontal therapy to uncontrolled diabetic patients and refer them to their diabetologist for evaluation.	.45	.043
I record clinical and radiographic parameters in patients with poor periodontal health	.68	.001

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study was approved by the Ethical Review Board of Baqai Dental College (Ref # BDC/ERB/2023/019). Informed consent was obtained from all participants to participate in this study. All methods were carried out in accordance with the Helsinki Declaration.

DATA ANALYSIS

The data were analysed using the Statistical package for social sciences version 21. For the purpose of analysis, responses to a three-point Likert scale related to knowledge and practice were recorded and re-categorized into two groups. The "Undecided" category was merged with "Disagree" to form group 1, and group 2 was kept original with the response "Agree." Similarly, the "Sometimes" category was merged with "Never" to form group 1, and group 2 was kept original with the response "Always". A level of significance was set at less than 0.05. The frequency distribution of dental practitioners according to gender, speciality, clinical experience and their responses to questionnaire were assessed using the chi-square test (Table 3,4,5).

RESULTS

Out of 323, 308 participants returned the completed form leaving a response rate of 95%. Among the male participants, 96 (78.7%) are general dentists while 26 (21.3%) are specialists, making a total of 122 male participants. Among the female participants, 159 (85.5%) are general dentists and 27 (14.5%) are specialists, with a total of 186 female participants. The p-value obtained from the chi-square test is 0.126, indicating that there is no statistically significant association between gender and the professional designation of the participants ($p > 0.05$) see Table 3.

Table 2: Gender-wise distribution of the participants

Gender	General dentist	Specialist	Total	p-value
Male	96(78.7)	26(21.3)	122(100)	.126
Female	159(85.5)	27(14.5)	186(100)	

Chi-square test

Among male participants, 85 (27.6%) have 1-5 years of clinical experience, 20 (6.5%) have 6-10 years, 6 (1.9%) have 11-15 years, 2 (0.6%) have 16-20 years, and 9 (2.9%) have more than 20 years of experience. In contrast, among female participants, 154 (50%) have 1-5 years of clinical experience, 20 (6.5%) have 6-10 years, 9 (2.9%) have 11-15 years, 1 (0.3%) have 16-20 years, and 2 (0.6%) have more than 20 years of experience. The p-value for this distribution by gender is 0.014, indicating a statistically significant difference in clinical experience between male and female participants see Table 4.

When examining clinical experience by designation, among males, 225 (73.1%) has 1-5 years of experience, 19 (6.2%) have 6-10 years, 3 (1%) have 11-15 years, 2 (0.6%) have 16-20 years, and 6 (1.9%) have more than 20 years of experience. For females, 14 (4.5%) have 1-5 years of experience, 21 (6.8%) have 6-10 years, 12 (3.9%) have 11-15 years, 1 (0.3%) have 16-20 years, and 5 (1.6%) have more than 20 years of experience. The p-value for this distribution by designation is 0.001, indicating a highly significant difference in clinical experience based on designation see Table 4. These findings suggest significant variations in the distribution of clinical experience between genders and across different designations among the participants.

Table 4: Distribution of clinical experience by gender and designation

Variables	Clinical Experience (Duration)					
Gender	1-5 years N(%)	6-10 years N(%)	11-15 years N(%)	16-20 years N(%)	≤20 years N(%)	P-value
Male	85 (27.6)	20 (6.5)	6 (1.9)	2 (0.6)	9 (2.9)	.014
Female	154 (50)	20 (6.5)	9 (2.9)	1 (0.3)	2 (0.6)	
Designation						
General Dentist	225 (73.1)	19 (6.2)	3 (1)	2 (0.6)	6 (1.9)	.001
Specialist	14 (4.5)	21 (6.8)	12 (3.9)	1 (0.3)	5 (1.6)	

The Chi square analysis compared participants' knowledge on periodontal health with their clinical practices see Table 5. For the question on smoking as a major risk factor for periodontitis (Q1), there was a significant difference between those who disagreed and those who agreed. Among the participants who disagreed, 76.7% never provided smoking cessation counseling to known smokers, whereas 43.5% of those who agreed also did not provide counseling. Conversely, 56.5% of participants who acknowledged smoking as a risk factor always provided cessation counseling (p=0.001).

Table 5: Alignment Between Participants' Knowledge and Clinical Practices in Periodontal Health

Knowledge	Practice		
Q1: Smoking is a major risk factor for periodontitis.	**I provide smoking cessation counseling to known smokers.**		
	Never n (%)	**Always n (%)**	**p-value**
Disagree	**46(76.7)**	**14(23.3)**	**.001**
Agree	**108(43.5)**	**140(56.5)**	
Q2 Site of progression of periodontal disease is the interdental plaque	**I thoroughly debride interdental areas while scaling and advise my patients to use interdental cleaning aids**		
	Never n (%)	**Always n (%)**	**p-value**
Disagree	**26(46.4)**	**30(53.6)**	**.008**
Agree	**71(28.2)**	**181(71.8)**	
Q3 Periodontitis is an irreversible disease but largely preventable	**I regularly provide oral hygiene motivation along with frequent maintenance to my patients to prevent periodontitis to occur.**		
	Never n (%)	**Always n (%)**	**p-value**
Disagree	**26(35.6)**	**47(64.4)**	**.067**
Agree	**58(24.7)**	**177(75.3)**	
Q4 Adjunct periodontal therapies bring an additional clinical advantage compared to scaling and Root planning alone.	**I provide the following adjunctive therapy along with Scaling and root planning in moderate to severe cases of periodontitis: Systemic antimicrobial therapy**		
	Never n (%)	**Always n (%)**	**p-value**
Disagree	**44(74.65)**	**15(25.4)**	**.289**
Agree	**168(67.5)**	**81(32.5)**	
	I provide local drug delivery		
	Never n (%)	**Always n (%)**	**p-value**
Disagree	**50(84.7)**	**9(15.3)**	**.010**
Agree	**169(67.9)**	**80(32.1)**	
Q5 Periodontal diseases is a risk factor for systemic conditions like CVD, diabetes, adverse pregnancy outcome.	**I educate my patients about the role of systemic disease in periodontitis and how directly it can worsen the disease status.**		
	Never n (%)	**Always n (%)**	**p-value**
Disagree	**56(62.2)**	**34(37.8)**	**.001**
Agree	**81(37.2)**	**137(62.8)**	
	I regularly maintain the systemic records of all my patients.		
	Never n (%)	**Always n (%)**	**p-value**
Disagree	**53(58.9)**	**37(41.1)**	**.002**
Agree	**86(39.4)**	**132(60.7)**	
Q6 Diabetes have a bidirectional relationship with periodontal health	**I provide non-surgical periodontal therapy to controlled diabetic patients**		
	Never n (%)	**Always n (%)**	**p-value**
Disagree	**37(56.9)**	**28(43.1)**	**.107**
Agree	**111(45.7)**	**132(54.3)**	
	I provide non-surgical periodontal therapy to uncontrolled diabetic patients and refer them to their diabetologist for evaluation.		
	Never n (%)	**Always n (%)**	**p-value**
Disagree	**37(56.9)**	**28(43.1)**	**.002**
Agree	**87(35.8)**	**156(64.2)**	
Q7. Correct diagnosis and treatment of periodontal problems rely on the clinical parameter and radiographic assessment.	**I record clinical and radiographic parameters in patients with poor periodontal health.**		
	Never n (%)	**Always n (%)**	**p-value**
Disagree	**30(68.2)**	**14(31.8)**	**.004**
Agree	**118(44.7)**	**146(55.3)**	

Regarding the progression of periodontal disease at the interdental plaque site (Q2), there was a notable difference in practice. Of those who disagreed with this statement, 46.4% never thoroughly debrided interdental areas while scaling, compared to only 28.2% among those who agreed. On the other hand, 71.8% of those who agreed always performed thorough debridement and advised patients on interdental cleaning aids (p=0.008).

When considering the irreversibility and preventability of periodontitis (Q3), 35.6% of participants who disagreed never provided regular oral hygiene motivation and maintenance, while only 24.7% of those who agreed with the statement did so. Among the latter group, 75.3% consistently provided oral hygiene motivation and maintenance, although the difference was not statistically significant (p=0.067).

Participants were also questioned on the clinical advantages of adjunct periodontal therapies compared to scaling and root planing alone (Q4a). For systemic antimicrobial therapy, 74.65% of those who disagreed never provided this therapy, in contrast to 67.5% of those who agreed. However, the practice of always providing this therapy did not differ significantly between the groups (p=0.289). In terms of local drug delivery (Q4b), a significant difference was observed: 84.7% of those who disagreed never provided local drug delivery, while 67.9% of those who agreed never did. Among the latter, 32.1% always used local drug delivery (p=0.010).

The association between periodontal diseases and systemic conditions like cardiovascular disease, diabetes, and adverse pregnancy outcomes (Q5) revealed significant findings. For educating patients about the impact of systemic diseases on periodontitis (Q5a), 62.2% of those who disagreed never provided this education, whereas 37.2% of those who agreed also did not. However, 62.8% of the latter group always educated their patients (p=0.001). Maintaining systemic records of all patients (Q5b) was another practice where significant differences were found. Of those who disagreed, 58.9% never maintained records compared to 39.4% among those who agreed. Among the latter, 60.7% always maintained systemic records (p=0.002).

For the relationship between diabetes and periodontal health (Q6), participants who disagreed with providing non-surgical periodontal therapy to controlled diabetic patients (Q6a) were more likely to never provide such therapy (56.9%) compared to those who agreed (45.7%). However, this difference was not statistically significant (p=0.107). In contrast, a significant difference was observed in the provision of non-surgical periodontal therapy to uncontrolled diabetic patients (Q6b). Among those who disagreed, 56.9% never provided the therapy and referral to a diabetologist, whereas only 35.8% of those who agreed refrained from this practice. Among the latter, 64.2% always provided the therapy and referrals (p=0.002).

Lastly, for the importance of clinical and radiographic assessments in diagnosing and treating periodontal problems (Q7), 68.2% of participants who disagreed never recorded these parameters compared to 44.7% of those who agreed. Among the latter, 55.3% always recorded clinical and radiographic parameters (p=0.004).

In summary, a significant association was found between

knowledge and practice for most questions, indicating that participants who agreed with certain knowledge statements were more likely to engage in corresponding clinical practices.

DISCUSSION

In the context of periodontitis, ensuring that general dentists apply their knowledge consistently is essential for improving patient care. However, research on the translation of periodontal knowledge into clinical practice is sparse in Pakistan. This study seeks to address this gap by assessing whether practicing dentists in Pakistan apply their theoretical knowledge of periodontitis in clinical settings using self-constructed questionnaire. By comparing knowledge with actual practices, the study aims to identify discrepancies and determine if changes in the clinical training of undergraduate students or continuing education programs for practicing dentists are necessary. Understanding this dynamic is crucial for optimizing patient care, reducing treatment inefficiencies, and ultimately improving periodontal health outcomes at a population level.

Our self-constructed questionnaire demonstrated good internal consistency, as indicated by Cronbach's alpha of 0.74, 0.77 in both domains of the questionnaire. In terms of construct validity, the strong positive correlations between questions in all domains of the questionnaire indicate that the items effectively capturing the essence as intended. The correlation values exceeding the critical value of 0.44 further emphasize the meaningfulness of these correlations. These findings are crucial because they underscore the ability to distinguish between individuals with varying degrees of knowledge based on their responses.

The results of our study highlight a significant gap between the theoretical knowledge of periodontal disease and its clinical application among dentists. Although most practitioners possess sufficient knowledge of periodontal conditions, many fail to implement evidence-based practices, such as smoking cessation counselling, thorough interdental cleaning, or the use of adjunct periodontal therapies. This discrepancy underscores the need for improved Knowledge Translation (KT) efforts to bridge this gap.

The study revealed a significant number of dentists had knowledge of smoking as a major risk factor for periodontitis and their provision of smoking cessation counselling. Similar findings were reported in a study conducted on dentists in North Carolina.[16] However, a substantial number of dentists who recognized smoking as a risk factor still failed to offer counselling to patients, indicating a critical area where practice does not align with knowledge. This could be due to the limited knowledge of dentist regarding smoking cessation. Furthermore, this highlights an opportunity for targeted interventions aimed at improving dentists' confidence or ability to provide counselling.[17]

Significant number of dentist agreed that proper interdental cleaning is a crucial preventive measure for periodontitis and consistently debride interdental areas or advise patients on interdental cleaning aids. However, study found that many dentists do not consistently debride interdental areas or advice patients on interdental cleaning aids, even when they understand the importance of interdental plaque in disease progression. This suggests that practical barriers, such as time constraints or patient compliance, may be preventing dentists from fully applying their knowledge in clinical settings. Many dental practices operate under tight schedules, which can limit the time available for patient education. Dentists may prioritize immediate dental issues over comprehensive oral hygiene instruction, leading to a lack of emphasis on interdental cleaning during appointment.[18]

The study found a significant association between dentists' knowledge of the link between periodontal disease and systemic conditions (e.g., cardiovascular disease, diabetes, rheumatoid arthritis) and their clinical practices. Dentists who understood the connection were more likely to educate patients and maintain systemic records, showing that awareness of this relationship can drive better patient care. However, many dentists still failed to maintain systemic records or educate patients adequately, suggesting room for improvement in integrating systemic health into routine dental care. Evidence shows that medical and dental records Pakistan dentist generate, the quality and maintenance of these records are often inadequate. This suggests a need for improved training and systems to enhance record-keeping practices, which is essential for integrating systemic health into dental care.[19]

One of the most concerning findings was the inconsistency in providing non-surgical periodontal therapy to diabetic patients, especially those with uncontrolled diabetes. Although the majority of dentists recognized the bidirectional relationship between diabetes and periodontal disease, many did not refer uncontrolled diabetic patients to a diabetologist or provide appropriate therapy. This could lead to poorer outcomes for these high-risk patients and suggests a need for clearer guidelines and more focused training on managing diabetic patients in dental practice. A study on Saudi population reveals that approximately 75% of diabetic patients in certain regions have poor glycemic control and often present for dental care without appropriate management plans.[20] This lack of action may stem from insufficient training or unclear guidelines regarding the management of diabetic patients within dental settings.

Accurate diagnosis and treatment planning rely heavily on clinical and radiographic assessments. Our results showed

that a significant portion of dentists who recognized the importance of these assessments still did not routinely record clinical and radiographic parameters. This could be due to resource constraints or insufficient emphasis on comprehensive documentation during dental education.[21] The findings of the study highlight the necessity for enhancements in dental education, particularly regarding the application of knowledge about periodontal health in clinical practice. To bridge the gap between theoretical knowledge and practical application, several strategies can be implemented:

1. Implementing structured KT strategies can facilitate the effective transfer of knowledge from research to practice, ensuring that dental professionals are equipped with the latest information on periodontal health.

2. Ongoing education is crucial for dental practitioners to stay updated on advancements in periodontal care. Programs that focus on practical training in adjunct therapies, such as smoking cessation and systemic health, can significantly enhance clinical practice and patient outcomes.[22,23]

3. Policies that emphasize practical training in dental curricula can help ensure that future dentists are well-versed in integrating knowledge of periodontal health into their clinical practice. This includes a focus on holistic approaches that consider systemic health impacts related to periodontal diseases.[22,24]

4. Training programs should incorporate practical skills related to adjunct therapies that support periodontal health management. This includes smoking cessation techniques and understanding how systemic health issues relate to oral conditions.[22,23]

By focusing on these areas, dental education can better prepare practitioners to apply their knowledge effectively in clinical settings, ultimately improving patient care and outcomes related to periodontal health. Enhanced educational strategies will also contribute to a more comprehensive understanding of the interplay between oral and systemic health, fostering a more integrated approach to patient care. While this study provides valuable insights into the knowledge-practice gap, it is limited by its cross-sectional design, which prevents the establishment of causality. Additionally, the use of self-reported data may introduce bias. Future research should focus on longitudinal studies to better understand how clinical experience, ongoing education, and practice environments influence the application of periodontal knowledge over time.

CONCLUSION

This study aimed to assess whether practicing dentists in Karachi, Pakistan, implement their theoretical know ledge of periodontitis in their clinical practices. The findings reveal significant gaps between knowledge and practice, with several areas where evidence-based periodontal care is not consistently applied. For instance, while the majority of dentists acknowledged smoking as a major risk factor for periodontitis, a substantial proportion failed to provide smoking cessation counseling. Similarly, while most participants recognized the importance of interdental plaque removal and systemic factors such as diabetes in periodontal health, fewer dentists regularly incorporated these considerations into their clinical practice.

The statistically significant associations between knowledge and practice, particularly in the domains of smoking cessation, systemic disease education, and periodontal therapy in diabetic patients, highlight the critical need for improved knowledge translation (KT) mechanisms in dental care. These findings suggest that despite adequate knowledge, many dentists are not fully translating this into effective patient care, resulting in missed opportunities for prevention and management of periodontitis.

In light of the study's objectives, it is clear that targeted interventions, such as enhanced training programs and continuous professional development, are necessary to bridge this knowledge-practice gap.

CONSENT FOR PUBLICATION

Not applicable.

AVAILABILITY OF DATA AND MATERIAL

The datasets used and/or analysed during the current study are available from the corresponding author on request. Competing interests: The authors declare that there is potentially no conflict of interest related to the article.

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AUTHORS' CONTRIBUTIONS

1. S.R helped in data collection, result writing, manuscript writing, figures and tables

2. M.A.J conceived the idea, helped in data collection and analysis, manuscript writing, editing and proof reading

3. T.M helped in data analysis, proof reading and methodology writing

4. A.J.M helped in manuscript writing, proof reading,

and critical analysis

5. N.T helped in data collection, figures, tables,
6. F.K Helped in discussion writing, figures and tables

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CONFLICT OF INTEREST

None to declare

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