ORIGINAL ARTICLE

Internal Medicine Knowledge Among Dental Practitioners in Monastir: A Cross-Sectional Study

Les connaissances en médecine interne chez les médecins dentistes à Monastir: Une étude transversal

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Abstract

Introduction: The integration of internal medicine knowledge into dental practice is essential yet remains underexplored.
Aim: This study aimed to assess the perceptions, challenges, and training needs of dental practitioners in Monastir, Tunisia, regarding internal medicine knowledge in dentistry.
Methods: A descriptive and analytical cross-sectional study was conducted from March to June 2025. A structured, self-administered questionnaire consisting of 12 questions across four sections was distributed via social media and professional networks. The study targeted licensed dentists practicing in public and private healthcare facilities in Monastir. Data were analyzed using descriptive statistics and Pearson's Chi-square test in Jamovi, with a significance threshold set at $p < 0.05$.
Results: A total of 143 responses were analyzed. The majority (93%) of dentists identified internal medicine knowledge as crucial in dental practice. Cardiovascular diseases (94.4%) and endocrine disorders (93%) were reported as the most relevant medical fields. Moreover, 93.7% had encountered medically compromised patients whose conditions affected their dental treatment plans. The most frequently cited challenges included the need for collaboration with physicians (76.1%) and uncertainty in prescribing medications (52.9%). While 50.3% had not received formal training in internal medicine, 97.9% expressed a strong interest in further training, particularly through workshops (54.5%) and online courses (43.4%).
Conclusion: This study highlights significant gaps in the integration of internal medicine knowledge in dental practice. The results support the urgent need to strengthen dental education and continuing training in internal medicine to enhance clinical preparedness, improve patient safety, and foster interdisciplinary collaboration.

Key words : Internal Medicine, Dentistry, Knowledge, Survey, Exploratory

Résumé

Introduction : L'intégration des connaissances en médecine interne dans la pratique dentaire est essentielle, mais reste peu explorée.
Objectif : Évaluer les perceptions, les défis et les besoins en formation des médecins dentistes à Monastir (Tunisie) concernant la médecine interne appliquée à la dentisterie.
Méthodes : Une étude transversale descriptive et analytique a été menée de mars à juin 2025. Un questionnaire structuré auto-administré comprenant 12 questions réparties en quatre sections a été diffusé via les réseaux sociaux. L'étude a ciblé des médecins dentistes diplômés exerçant dans les établissements de santé publics et privés de Monastir. Les données ont été analysées à l'aide de statistiques descriptives et du test du Chi^2 de Pearson via Jamovi ($p < 0,05$).
Résultats : Un total de 143 réponses a été analysé. La majorité (93 %) considérait les connaissances en médecine interne comme essentielles à la pratique dentaire. Les maladies cardiovasculaires (94,4 %) et endocriniennes (93 %) ont été jugées les plus pertinentes. Par ailleurs, 93,7 % avaient déjà traité des patients médicalement compromis. Les principaux défis évoqués étaient la collaboration avec les médecins (76,1 %) et l'incertitude lors des prescriptions (52,9 %). Bien que 50,3 % n'aient pas reçu de formation formelle, 97,9 % ont exprimé un fort intérêt pour une formation complémentaire, via des ateliers (54,5 %) ou des cours en ligne (43,4 %).
Conclusion : Cette étude révèle d'importantes lacunes de formation, soulignant la nécessité de renforcer l'enseignement médical en dentisterie.

Mots clés: Médecine interne, Médecine dentaire, Connaissances, Enquête, Exploratoire

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Introduction

The relationship between internal medicine and dentistry is crucial in modern healthcare. The oral cavity is a site of infectious and inflammatory conditions which are frequently associated with systemic diseases, reflecting the bidirectional relationship between oral and general health. (1,2)

Conditions such as hypertension (3), diabetes mellitus (4), cardiovascular diseases (5), and immunosuppressive disorders not only impact oral health but also complicate dental treatment planning.

For instance, patients on anticoagulant therapy require careful management during surgical procedures (6), while those with diabetes are at higher risk of common oral diseases such as caries and periodontitis and impaired wound healing. (4)

Despite these clear connections, the level of medical knowledge among dentists varies, raising concerns about their preparedness to manage medically compromised patients. Many dental professionals face challenges in assessing medical risks, addressing drug interactions, and handling medical emergencies.

Consequently, there is a growing need for enhanced interdisciplinary collaboration and greater integration of medical education into dental education.

The objective of this study was to identify gaps in internal medicine knowledge among dental practitioners and evaluate the impact of these gaps on patient management.

Furthermore, it seeks to identify areas where additional medical training is necessary, with the overarching goals of improving patient safety and optimizing dental care for individuals with systemic conditions.

Methods

This was a cross-sectional descriptive study, conducted between March and June 2025.

The study population consisted of dental practitioners working in multiple centers in Monastir: private dental offices; the dental medicine Department of Monastir University Hospitals; the University Dental Clinic of Monastir, and the intermediate healthcare center in Monastir. Practitioners were eligible if they had a valid diploma to practice dentistry and were actively practicing during the study period. This included only fully graduated dentists, including postgraduate residents enrolled in clinical specialization programs.

The following non-inclusion criteria were applied: healthcare professionals other than dentists; under graduated dental students; and dentists who refused to participate in the study.

Sample size. The sample size was determined using the following formula:

$n = Z\alpha 2^2 \times p\ (1 - p) / E^2$ where n is the sample size; $Z\alpha^2$ is the critical value at a 95% confidence level (1.96); p is the estimated population proportion (assumed to be 0.5 for maximum variability); and E is the desired margin of error.

To account for potential non-response and ensure a sufficient number of completed surveys, the desired margin of error (E) was set at 0.09 (9%), assuming a population proportion (p) of 0.5 and a 95% confidence level. This calculation yielded a required sample size of approximately 119

Data Collection

Data were collected using a structured, self-administered custom-built questionnaire (Annex 1), consisting of 12 questions, inspired by the literature and specifically adapted to the study. The questionnaire was created via Google Forms and was distributed online through professional dental groups on social media (such as private Facebook groups and messaging platforms). Responses were collected anonymously over the period of 4 months. It is designed for quick completion, requiring approximately five minutes.

The questionnaire was divided into four main sections. The first section gathered demographic information such as gender, age, years of professional experience and workplace setting. This allowed for stratified analysis based on practice characteristics. The second section explored participants' perceptions and attitudes toward the importance of internal medicine knowledge in dentistry. It included closed-ended questions that assessed how relevant dentists considered various medical fields (e.g., cardiology, endocrinology, pharmacology) to their clinical practice. The third section focused on clinical exposure by asking whether participants had encountered medically compromised patients and what challenges they faced in managing such cases. Multiple options were provided to capture common issues such as uncertainty in prescribing, difficulty managing medical emergencies, and the need for physician collaboration. The final section addressed training background and needs. It included questions about whether participants had received formal training in internal medicine (during dental school or via continuing education), and if they were interested in further training. Response options covered preferred formats such as workshops or online courses. One final question assessed participants' views on the need for better integration of internal medicine into dental curricula.

Before launching the full-scale survey, a preliminary evaluation of the questionnaire was carried out by a group of university dental professors specialized in prosthodontics from the Faculty of Dental Medicine of Monastir (n=4). Their role was to assess the clarity, consistency, and relevance of the questionnaire content. Based on their feedback, minor modifications were made to refine the wording and structure of certain items. These participants were not included in the main study sample.

The entire study process, from sample size determination to data analysis, is illustrated in the flow chart presented in Figure 1.

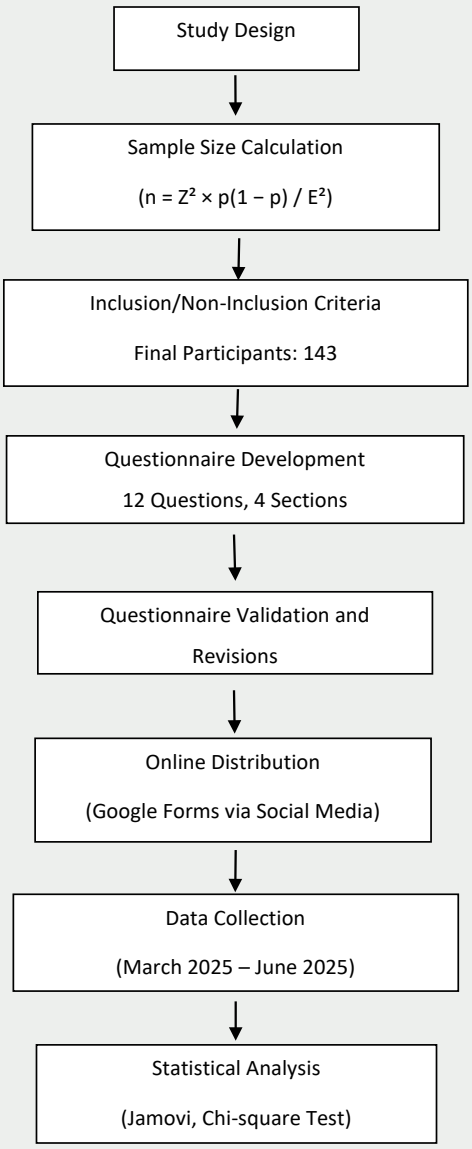


Figure 1. Flow Chart of the Study Process

Statistical analysis

Statistical analyses were conducted using Jamovi. All questionnaire variables were qualitative. Binary and categorical response (e.g., "Yes"/"No", or specialty types) were coded numerically to facilitate analysis. Descriptive statistics were used to summarize participant characteristics, including age categories, gender, years of experience, and dental specialty. Frequencies and percentages were calculated for all categorical variables. To examine associations between participant demographic information (such as age group, years of experience, workplace, and specialty) and responses to survey questions (e.g., previous training in internal medicine, encounters with medically compromised patients), Pearson's Chi-square test (χ^2) was used. This test was chosen to analyze relationships between qualitative variables. Statistical significance was set at $p < 0.05$.

Ethical considerations

The study adhered to ethical guidelines to protect participant confidentiality. The questionnaire was anonymous, and participants were informed about the purpose of the study and their rights as participants. Informed consent was obtained electronically, with a specific question included in the questionnaire to ask participants for their consent to receive a summary of the study findings via email. This consent information was stored separately and was not linked to the survey responses, ensuring full anonymity during data analysis.

Results

Even though the adjusted sample size was calculated to be 119, a total of 143 responses were collected. This oversampling was intentional to increase the statistical precision of the study.
The characteristics of the participants are presented in Table 1.

Table 1. Distribution of participants according to sex, age, workplace, and years of practice (n = 143)

Demographic variable	Categories	N	Percentage
Sex	Female	114	79.7%
	Male	29	20.3%
Age	25–35 years	106	74%
	36–45 years	29	20.3%
	46–55 years	7	5%
	> 55 years	1	0.7%
Workplace	Private dental clinic	59	41.3%
	University/Hospital-based practice	6	4.2%
	The University Dental Clinic of Monastir	75	52.4%
	Intermediate healthcare center	3	2.1%
Years of practice	< 5 years	90	63%
	5–10 years	27	18.9%
	11–20 years	21	14.6%
	> 20 years	5	3.5%

Dentists' perception of the importance of medical knowledge

Participants' responses to the question regarding the importance of internal medicine knowledge in dentistry revealed that the majority (97.2%) affirmed its importance, while only one participant (0.7%) responded negatively. A small proportion (2.1%) were uncertain.
Tables 2 and 3 show the most relevant internal medicine fields and the most common medical conditions encountered in dental practice as reported by dentists.

Table 2. Most relevant internal medicine fields in dental practice

Internal Medicine Field	Number of Participants	Percentage (%)
Cardiovascular diseases	135	94.4%
Endocrinology	133	93.0%
Hematology	127	88.8%
Infectious diseases	127	88.8%
Pharmacology	123	86.0%
Autoimmune diseases	109	76.2%
Oncology	103	72.0%
Neurology	69	48.3%
Gastroenterology	60	42.0%
Pulmonology	57	39.9%
Other	10	7.0%

Table 3. Common medical conditions encountered in dental practice

Medical Conditions	Number of responses	%
Hypertension	124	86.7
Diabetes	140	97.9
Cardiovascular disease	126	88.1
Respiratory diseases	22	15.4
Immunosuppressive conditions	43	30.1
Other	11	7.7

In response to the question, “Have you ever encountered a medically compromised patient whose condition affected your dental treatment plan?”, (134) 93.7% of participants answered “Yes” while only (9) 6.3% responded “No” (Table 4).

Table 4. Challenges faced in managing medically compromised patients in dental practice

Challenges faced in managing medically compromised patients in dental practice	Number of responses	Percentage (%)
Lack of sufficient medical knowledge	54	39.1
Difficulty in managing medical emergencies	19	13.8
Uncertainty in prescribing medications	73	52.9
Need for collaboration with physicians	105	76.1
Other	9	6.5

Assessment of Medical Training Needs in Dental Education

In response to the question, "Have you ever received formal training in internal medicine topics related to dentistry?", 37.8% of participants reported having received such training during dental school, and 10.5% through continuing education courses. However, 50.3% had not received formal training but expressed a desire to do so, while only 1.4% did not consider it necessary.
Reflecting this interest, when asked, "Would you be interested in additional training on internal medicine topics relevant to dentistry?", 54.5% preferred workshops or seminars, and 43.4% opted for online courses; only 2.1% felt confident in their current knowledge and declined further training. Additionally, 95.8% of participants agreed that there should be more integration of internal medicine topics in dental education, while just 2.8% were unsure and 1.4% disagreed.

Analytical associations related to participant’s age

The analytic association between participants' age and their perception of the importance of internal medicine knowledge in dentistry was analyzed using the Chi-square test. The result was not statistically significant ($p = 0.992$).
A correlation analysis was performed to explore the relationship between age and two variables: having received formal training in internal medicine and interest in pursuing further training. The results showed a statistically significant correlation between age and having received formal training ($p = 0.031$). However, there was no statistically significant correlation between age and interest in further training ($p = 0.945$).

Association between years of practice of the dentist vs. encounter with medically compromised patients

The association between years of professional practice and the frequency of encountering medically compromised patients was also examined. The analysis revealed no statistically significant relationship ($p = 0.353$).

Association between perceived importance of internal medicine knowledge in dentistry and perceptions on the need for more integration of internal medicine in dental education

A statistically significant association was found between the perceived importance of internal medicine knowledge in dentistry and the belief that it should be more integrated into dental education ($p = 0.032$).

Analytical associations related to formal training in internal medicine related to dentistry

The correlation analysis between having received formal training in internal medicine and the interest in pursuing further training revealed a statistically significant relationship ($p < 0.01$).
A significant association was observed between having received formal training in internal medicine and the perception that internal medicine should be better integrated into dental education ($p = 0.007$).

Discussion

This study aimed to assess the perceptions, challenges, and training needs of dental practitioners in Monastir, Tunisia, regarding internal medicine knowledge in dentistry. It explored the perceived importance of

medical knowledge in clinical dental practice, the frequency of encounters with medically compromised patients, the difficulties faced in their management, and the level of interest in pursuing further training to enhance interdisciplinary competence.

Regarding gender, the participant group showed a predominance of female dentists (79.72%) compared to male dentists (20.28%). This gender imbalance may reflect the current trend of increasing female representation in the dental profession globally and potentially within Tunisia.

Most respondents were aged between 25 and 35 years (74%), followed by those aged 36–45 years (20.3%), and smaller proportion between 46–55 years (5%), and over 55 years (0.7%). This age distribution shows the focus of the study on early to mid-career dentists, who are key to understanding current practice trends and educational needs.

In terms of professional setting, more than half of the participants (52.4%) worked at the University Dental Clinic of Monastir, followed by those in private dental clinics (41.3%). A smaller proportion practiced in university or hospital-based structures (4.2%) and intermediate healthcare centers (2.1%). This distribution reflects a strong representation of academic and clinical training environments, particularly within the Monastir region.

In this study, the vast majority of participants (97.2%) acknowledged the importance of internal medicine knowledge in daily dental practice, reflecting a high level of awareness among Tunisian dentists about the link between oral health and systemic conditions. This perception of the necessity of internal medicine knowledge is consistent with findings from a study conducted at Tsurumi University in Japan (2004), that examined the need for medical knowledge among dentists. The study revealed that 99% of respondents recognized the necessity of internal medicine for dentists (4).

The present study revealed that certain medical conditions are frequently encountered by Tunisian dentists in their daily practice. Diabetes (97.9%), cardiovascular disease (88.1%), and hypertension (86.7%) were highly prevalent, highlighting their significant relevance in Tunisian dental practice. In contrast, respiratory diseases (15.4%) and immunosuppressive conditions (30.1%) were reported less frequently, possibly reflecting differences in prevalence or the management of these conditions by medical specialists. A study conducted at the University Medical Centre Hamburg-Eppendorf (2015) investigating the most relevant internal medicine topics for dental education by both dentists and internists, identified cardiovascular diseases as the most relevant internal medicine topic for dental education (26 mentions by dentists), followed by hematology/oncology (14 mentions), infectious diseases (13 mentions), pharmacology (9 mentions), and endocrinological conditions such as diabetes (7 mentions), due to their impact on healing and infection risks (7). In comparison, the study among Tunisian dentists yielded highly similar findings. Despite some differences in methodology and geographic context, both studies underscore the universal relevance of medical knowledge in dental practice, particularly in managing patients with systemic health conditions (7).

Another study conducted by Eva Muñoz Aguilera et al. defined hypertension as the most prevalent cardiovascular disease, affecting nearly 45% of the world's population (8). This highlights the global recognition of cardiovascular conditions as a major consideration in dentistry (6,9).

Also, diabetes mellitus has been widely discussed in many studies as a systemic condition with significant implications for oral health (10,11,12,13). Alqadi's review underscores that diabetes, as a growing global health concern, presents clear oral manifestations (10).

According to the results, diabetes is also identified as one of the most relevant internal medicine fields in dental practice (93%). This high level of awareness aligns with international findings and underscores a shared recognition among Tunisian dentists of the critical need to adapt dental care to the systemic realities of diabetic patients (10,11,12,13).

The study outcome showed that the majority of participating dentists (93.7%) reported having encountered medically compromised patients whose condition affected their dental treatment plan. This finding highlights the routine nature of managing patients with complex medical needs in dental practice. A study conducted at the Faculty of Dentistry, Chulalongkorn University in Thailand, reported that 12.2% of dental patients had medically compromised conditions (14). This difference is largely attributable to methodological variations. In common, the two studies showed that encountering medically compromised patients is a frequent and important aspect of dental practice.

The study findings revealed several challenges faced by dentists in managing medically compromised patients. The most prominent challenge was the 'Need for collaboration with physicians' (76.1%), emphasizing the critical importance of effective interdisciplinary communication and coordination. 'Uncertainty in prescribing medications' was also a significant concern (52.9%), highlighting the need for enhanced knowledge on appropriate prescribing practices in this patient population. Furthermore, a notable proportion of dentists reported a 'Lack of sufficient medical knowledge' (39.1%), underscoring the importance of comprehensive medical education in dental training. While 'Difficulty in managing medical emergencies' was less frequently reported (13.8%), it remains a crucial area requiring attention. In several studies, the importance of collaboration between dentists and physicians when managing medically compromised patients has been strongly emphasized.

Kunde et al. demonstrated through qualitative interviews that both dentists and internists recognize the critical need for interdisciplinary communication, particularly when dealing with systemic diseases (7).

The data regarding formal training in internal medicine related to dentistry reveals a significant gap and a clear desire for more education in this area among Tunisian dentists. While a notable proportion (37.8%) reported receiving some training during their dental school education, a much smaller percentage (10.5%) had

obtained further training through continuing education courses. Over half of the respondents (50.3%) indicated that they had not received formal training but expressed a desire to participate. This strong interest highlights a perceived need for enhanced medical knowledge to better manage the complexities of dental practice, particularly concerning medically compromised patients.
The interest in further training in internal medicine relevant to dentistry among Tunisian dentists is evident. The majority expressed a desire for additional learning, with 54.5% preferring workshops or seminars, and a substantial 43.4% indicating interest in online courses. This strong inclination towards further education underscores a recognized need to enhance their knowledge and skills in managing the medical complexities encountered in dental practice.
The majority (95.8%) agreed that the integration of internal medicine topics within dental education is needed. This strong agreement underscores a recognized deficiency in the current curriculum and a clear understanding of the essential role that medical knowledge plays in the management of medically compromised patients.
The statistical analysis revealed no significant association between age and the perceived importance of internal medicine knowledge in dentistry ($p = 0.992$), indicating that recognition of its value is consistent across different age groups and professional experience levels. However, younger dentists were significantly more likely to have received formal training during their education ($p = 0.031$), reflecting the evolution of dental curricula with a stronger medical component. Interestingly, the lack of a significant correlation between age and interest in further training ($p = 0.945$) suggests that the motivation to improve medical knowledge is shared across all age groups.
The statistical analysis showed that the number of years of practice was not significantly associated with the likelihood of encountering medically compromised patients ($p = 0.353$), indicating that such cases are a common reality throughout all stages of a dentist's career. However, significant associations emerged regarding the perception and training in internal medicine. Dentists who recognized the importance of internal medicine knowledge were more likely to support its greater integration into dental education ($p = 0.032$). Furthermore, those who had received formal training in internal medicine demonstrated a significantly stronger belief in the need for enhanced incorporation of medical content into dental curricula ($p = 0.007$). These findings suggest that exposure to structured medical training reinforces awareness of its relevance and highlights the educational gap among those without such training.
This study was designed using a cross-sectional, descriptive, and analytical approach based on a structured, self-administered questionnaire. Its strength lies in its originality, as it is the first Tunisian, particularly in Monastir, investigation to explore internal medicine knowledge in dental practice. The survey included 12 targeted questions and was distributed to a diverse sample of dentists across different sectors and experience levels, providing valuable preliminary insights into educational gaps and clinical challenges. Despite limitations such as self-reported data and sample size, the internal validity remains solid due to the coherence of objectives, methods, and analysis. While this study offers foundational data, it is intended as a preliminary step toward a larger-scale national study to further validate and expand on these findings.

Conclusion

This study highlights the critical intersection between internal medicine and dental practice in Tunisia. Most dental professionals recognize the importance of internal medicine in delivering safe and effective care, especially for patients with systemic conditions.
However, frequent clinical challenges, such as managing medical emergencies and communicating with physicians, are compounded by a lack of formal training, revealing a clear educational gap.
The strong demand for additional, flexible training formats demonstrates a proactive stance among dentists to enhance their competence. These findings support the need for improved integration of internal medicine into dental education and ongoing professional development.

References

1. Babu CN, Gomes AJ. Systemic manifestations of oral diseases. J Oral Maxillofac Pathol. 2011;15(2):144–147. doi:10.4103/0973-029X.84477
2. Bourgoin A, Agossa K, Seror R, Fumery M, Radoi L, Gosset M. Management of dental care of patients on immunosuppressive drugs for chronic immune-related inflammatory diseases: a survey of French dentists' practices. BMC Oral Health. 2023;23:545. doi:10.1186/s12903-023-03258-7
3. Muñoz Aguilera E, Suvan J, Buti J, Czesnikiewicz-Guzik M, Barbosa Ribeiro A, Orlandi M, et al. Periodontitis is associated with hypertension: a systematic review and meta-analysis. Cardiovasc Res. 2020;116(1):28–39. doi:10.1093/cvr/cvz201
4. Alqadi SF. Diabetes Mellitus and Its Influence on Oral Health: Review. J Clin Exp Dent. 2024;16(1):e1–e6. doi:10.4317/jced.123456
5. Chaudhry S, Jaiswal R, Sachdeva S. Dental considerations in cardiovascular patients: A practical perspective. Indian Heart J. 2016;68(4):572–575. doi:10.1016/j.ihj.2015.11.034
6. Mingarro-de-León A, Chaveli-López B, Gavaldá-Esteve C. Dental management of patients receiving anticoagulant and/or antiplatelet treatment. J Clin Exp Dent. 2014;6(2):e155–61. doi:10.4317/jced.51215
7. Kunde A, Harendza S. Topics of internal medicine for undergraduate dental education: a qualitative study. Eur J Dent Educ. 2015;19(2):156–160. doi:10.1111/eje.12116.
8. Aguilera EM, Suvan J, Buti J, Czesnikiewicz-Guzik M, Ribeiro AB, Orlandi M, Guzik TJ, Hingorani AD, Nart J, D'Aiuto F. Periodontitis is associated with hypertension: a systematic review and meta-analysis. Cardiovasc Res. 2020;116(1):28-39.
9. Sanz M, Marco del Castillo A, Jepsen S, Gonzalez-Juanatey JR, D'Aiuto F, Bouchard P, et al. Periodontitis and cardiovascular diseases: Consensus report. J Clin Periodontol. 2020;47(3):268–288. doi:10.1111/jcpe.13189
10. Miyatake Y, Tsuboi H, Nakano K, Otsuka R, Takahashi S, Maeda T. Assessment of the necessity of knowledge of internal medicine in dentistry and difficulties in treating patients with systemic diseases: A survey of Japanese dentists. International Dental Journal. 2004;54(5):265–70
11. D'Aiuto F, Gkranias N, Bhowruth D, Khan T, Orlandi M, Suvan J,

et al. Systemic effects of periodontitis treatment in patients with type 2 diabetes: a 12-month, single-centre, investigator-masked, randomised trial. Lancet Diabetes Endocrinol. 2018;6(12):954–965. doi:10.1016/S2213-8587(18)30254-2

12. Shimpi N, Panny A, Glurich I, Chyou PH, Acharya A. Knowledgeability, attitude and practice behaviors of dental providers toward provisions of integrated care delivery for patients with prediabetes/diabetes: Wisconsin statewide survey. Front Dent Med. 2021;2:748885. doi:10.3389/fdmed.2021.748885
13. Kheriji N, Dakhlaoui T, Kamoun Rebai W, Maatoug S, Thabet MT, Mellah T, et al. Prevalence and risk factors of diabetes mellitus and hypertension in North East Tunisia calling for efficient and effective actions. Sci Rep. 2023;13:12706. doi:10.1038/s41598-023-39197-0
14. Dhanuthai W, Sappayatosok K, Bijaphala P, Kulvitit S, Kintarak S. A survey of medically compromised patients at the Dental Hospital, Faculty of Dentistry, Chulalongkorn University. Med Oral Patol Oral Cir Bucal. 2009 Dec 1;14(6):E287–91