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Pharmaceutical Interventions In Dental Self-Medication: A Review Of Practices, Challenges, And Regulatory Perspectives In Saudi Arabia

Bandar Zaid Alotaibi[1], Aedh Nasser Bin Fardan[2], Rakan Saud Alreshidi[3], Malak Abdul Majeed Althobaiti[4], Basmah Dalli Alanazi[5], Sultan Tami Hamdan AL Elyani[6], Ahmed Abdullah Alahmadi[7], Amirah Salih Almuhaylib[8], Lama Turki Almutairi[9]

[1]Dentist, East Riyadh Dental Clinics Center, Riyadh, KSA.
[2]Dentist, General Directorate of Health Affairs, Riyadh
[3]Dentist, Primary Health Care Centre in Turbah, Hail
[4]Dentist, Ministry of Health, Al-Suhaili Health Center, Taif
[5]Pharmacist, General Directorate of Health Affairs, Riyadh
[6]Hussein Mohammed Fahid Alsogor
Pharmacy, Najran Health Assembly, Najran
[7]Pharmacy, Ministry of Health Branch, AL Madinah AL Munawwarah
[8]Pharmacy, Medina Health Culster -alharam hospital, AL Madinah AL Munawwarah, Saudi Arabia
[9]Pharmacy, KFMC, Riyadh, Saudi Arabia

Abstract
Dental self-medication, particularly the use of analgesics, antiseptics, and antibiotics without professional guidance, remains a growing concern in Saudi Arabia. This review synthesizes recent evidence regarding pharmaceutical interventions and the role of community pharmacists in managing patient requests related to oral and dental health. Studies conducted across the Kingdom indicate a high prevalence of non-prescription antibiotic use, reflecting both cultural acceptance of self-care and gaps in enforcement of dispensing laws (Alghadeer et al., 2018; AlRasheed et al., 2016). Although community pharmacists are often the first point of contact for patients seeking relief from dental pain, research shows inconsistencies in their counseling practices and limited training in dental pharmacotherapy (Allam & Amer, 2020; Alomi et al., 2017).
National regulatory reforms, including the 2018 Saudi Food and Drug Authority (SFDA) restriction on antibiotic sales, have marked progress toward rational drug use. However, inconsistent implementation and limited public awareness continue to challenge these efforts (Ministry of Health, 2024). The findings underscore the need for structured pharmacist training programs, stronger inspection mechanisms, and public education campaigns to ensure safe self-medication practices. Aligning these initiatives with Saudi Vision 2030 will enhance oral health outcomes and promote a more sustainable, patient-centered healthcare system.

Keywords: Self-medication; Dentistry; Community pharmacists; Saudi Arabia; Antibiotic misuse; Pharmaceutical interventions; Oral health; Regulatory framework; Vision 2030; Public health.

Introduction

Self-medication—the practice of using medications without a prescription or professional supervision—has become a significant public health concern worldwide (World Health Organization [WHO], 2014). In Saudi Arabia, this phenomenon is particularly widespread, driven by factors such as easy over-the-counter drug availability, lack of awareness about medication risks, and the perception of pharmacists as accessible healthcare providers (Aljadhey et al., 2015).
Within oral and dental care, self-medication is notably prevalent. Many individuals resort to analgesics, antibiotics, and antiseptic mouth rinses to relieve toothache, gum inflammation, or oral infections without consulting a dentist (AlQahtani, 2019). While such behavior may provide temporary relief, it often results in delayed diagnosis, inappropriate antibiotic use, and increased risk of antimicrobial resistance—an escalating issue globally and in Saudi Arabia (AlKhamees et al., 2018).

Community pharmacists play a pivotal role in this context. As frontline healthcare professionals, they frequently encounter patients seeking dental medications without prescriptions. Their ability to provide evidence-based counseling, assess the appropriateness of self-care, and refer patients to dentists when necessary makes them essential contributors to oral health management (Allam & Amer, 2020).
Recent regulatory reforms by the Saudi Food and Drug Authority (SFDA) and Ministry of Health (MOH) have sought to limit antibiotic misuse and enhance the role of pharmacists in rational drug use. However, gaps remain in implementing standardized protocols for dental-related self-medication, as well as in training community pharmacists to manage such cases effectively (Alomi et al., 2017).
Therefore, this review aims to synthesize available evidence on pharmaceutical interventions in dental self-medication across Saudi Arabia, exploring the pharmacists' role, patient behavior, and the regulatory landscape. It also provides recommendations aligned with Saudi Vision 2030 to promote safe and sustainable self-care practices in the field of dentistry.

Literature Review

Self-medication related to dental and oral health conditions is increasingly recognized as a global public health concern, particularly in developing countries where access to dental services is limited and medications are often available without prescription. According to the World Health Organization (2014), self-medication can provide practical benefits for minor ailments but poses serious risks when it involves antibiotics or complex pharmacological agents. Globally, studies have shown that individuals commonly use analgesics, anti-inflammatory drugs, and antibiotics to manage toothache and oral infections without professional consultation (Kumar & Thomas, 2017). Such behavior, while convenient, frequently leads to misuse, antimicrobial resistance, and delayed diagnosis of underlying dental diseases.
A descriptive study conducted in France by Benyamina Douma et al. (2019) illustrated how community pharmacists frequently encounter patients seeking over-the-counter products for dental pain, with most interventions focusing on recommending pain relievers or antiseptic mouth rinses rather than referring patients to dentists. This finding highlights the essential role pharmacists play as the first point of contact in oral healthcare and underlines their potential to influence patients' self-medication behavior through counseling and appropriate intervention.
In the context of Saudi Arabia, similar trends have been observed but with distinct local determinants. Research by Alghadeer et al. (2018) revealed that self-medication with antibiotics remains highly prevalent in the Kingdom, where many patients obtain these medications directly from community pharmacies without valid prescriptions. Earlier studies by Aljadhey et al. (2015) and AlRasheed et al. (2016) also reported widespread use of antibiotics for dental and respiratory complaints, indicating a persistent challenge in enforcing pharmacy regulations despite clear legal restrictions. Contributing factors include public misconceptions about antibiotic safety, limited accessibility to affordable dental clinics, and cultural acceptance of pharmacist-led treatment for mild symptoms.
AlQahtani (2019) specifically examined self-medication practices related to oral health among adults attending a university dental hospital and found that more than 60% of participants had used medications for dental pain or gum inflammation without consulting a dentist. The study also revealed that many respondents relied on advice from pharmacists or family members, underscoring the informal nature of medication decision-making in the Saudi population. While these behaviors may temporarily alleviate symptoms, they increase the likelihood of adverse effects, drug resistance, and delayed professional treatment.
Pharmacists play a central role in shaping self-medication practices. Allam and Amer (2020) found that community pharmacists in Saudi Arabia are frequently approached for dental-related medications and provide varying degrees of counseling depending on their training and awareness. Although pharmacists are well-positioned to support rational medicine use, knowledge gaps persist regarding oral pharmacotherapy and antimicrobial stewardship (Alomi et al., 2017). Strengthening the competencies of pharmacists through continuing education, standardized counseling protocols, and collaboration with dental professionals could substantially improve the safety and quality of self-care.
Regulatory and policy efforts have begun to address this issue. In 2018, the Saudi Food and Drug Authority (SFDA) prohibited the sale of antibiotics without a prescription, marking an important regulatory milestone. However, studies indicate that enforcement remains inconsistent, and non-prescription sales continue in some community pharmacies (AlRasheed et al., 2016). The Ministry of

Health (2024) has emphasized the importance of integrating pharmacists into the national framework for antimicrobial stewardship as part of Saudi Vision 2030, which seeks to promote preventive and community-based care.

Taken together, the literature consistently indicates that dental self-medication is a multifaceted challenge influenced by accessibility, cultural beliefs, pharmacist practice, and regulatory enforcement. While progress has been made through recent policy reforms, further action is required to enhance pharmacist education, strengthen inspection mechanisms, and increase public awareness of the risks associated with unsupervised medication use. Addressing these gaps will be essential to advancing safe self-care and improving oral health outcomes across Saudi Arabia.

Discussion

The findings from previous studies indicate that self-medication in dentistry represents a persistent and complex issue that extends beyond individual behavior to encompass cultural, regulatory, and professional dimensions. The high prevalence of self-treatment for dental pain and infections in Saudi Arabia reflects a combination of factors, including the accessibility of over-the-counter medications, the limited availability of affordable dental services, and the public's trust in community pharmacists as alternative healthcare providers (Aljadhey et al., 2015; AlQahtani, 2019). While self-medication may provide short-term relief and reduce the burden on dental clinics, it also carries significant risks, particularly when antibiotics are used without prescription, contributing to antimicrobial resistance—a global threat recognized by the World Health Organization (2014).

One of the most critical observations is the dual role of community pharmacists. They function simultaneously as facilitators and regulators of self-medication. Studies conducted in France and Saudi Arabia reveal that pharmacists often respond to patient requests for dental-related medications with product recommendations rather than referral to a dentist (Benyamina Douma et al., 2019; Allam & Amer, 2020). This behavior highlights both the opportunity and the challenge within pharmacy practice: pharmacists are ideally positioned to influence patient safety but may lack sufficient training or motivation to provide comprehensive oral health counseling. Strengthening pharmacists' competencies through continuing professional education and clinical pharmacy training could significantly improve patient outcomes and ensure adherence to national medication policies (Alomi et al., 2017).

Another important theme emerging from the literature is the gap between regulation and implementation. Despite the Saudi Food and Drug Authority's 2018 restriction on over-the-counter antibiotic sales, non-compliance remains widespread, reflecting insufficient inspection and enforcement mechanisms (AlRasheed et al., 2016; Alghadeer et al., 2018). This inconsistency weakens the impact of otherwise well-designed public health policies. As highlighted by the Ministry of Health (2024), achieving the goals of Vision 2030 requires not only the existence of strong policies but also robust systems for monitoring, pharmacist accountability, and public education.

From a healthcare management perspective, pharmacists' involvement in oral health promotion can be viewed as part of a broader shift toward preventive and community-based care. By providing accurate advice, monitoring medication use, and referring patients appropriately, pharmacists can help reduce unnecessary antibiotic consumption and prevent complications from delayed dental treatment. Furthermore, implementing digital health technologies—such as e-prescriptions and pharmacy information systems—could enhance compliance tracking and data sharing between pharmacists and dental professionals.

It is also essential to acknowledge that patient behavior remains a key determinant in the success of self-medication control strategies. Public awareness campaigns emphasizing the dangers of antibiotic misuse, the importance of professional dental consultation, and the value of preventive oral care can transform societal attitudes toward self-treatment. Collaborative programs between the Saudi Ministry of Health, the SFDA, and pharmacy schools could cultivate both professional accountability and community engagement.

In summary, the discussion underscores the interconnectedness of regulatory policy, pharmacist competence, and patient behavior in managing dental self-medication. Strengthening these dimensions simultaneously will be crucial for improving medication safety, curbing antibiotic misuse, and aligning pharmacy practice with Saudi Arabia's national health transformation agenda. The evidence supports the conclusion that empowering community pharmacists through education, monitoring, and systemic

support can make them pivotal partners in promoting rational medicine use and safeguarding oral health in the Kingdom.

Conclusion and Recommendations

The reviewed evidence demonstrates that dental self-medication in Saudi Arabia remains a widespread yet understudied public-health issue. Individuals often rely on over-the-counter analgesics, antiseptics, and even antibiotics to relieve oral symptoms, reflecting both cultural acceptance of self-care and gaps in dental-care accessibility (AlQahtani, 2019; Alghadeer et al., 2018). While community pharmacists act as the most accessible healthcare professionals, their dual role as medicine suppliers and clinical advisers requires continuous reinforcement through education and regulatory oversight (Allam & Amer, 2020).

The discussion across previous studies highlights that national initiatives—such as the Saudi Food and Drug Authority's 2018 antibiotic-dispensing regulation—have reduced unmonitored antibiotic sales but remain limited by inconsistent enforcement (AlRasheed et al., 2016). To align with Saudi Vision 2030 and its emphasis on preventive care, sustained efforts are needed to integrate pharmacists more fully into oral-health strategies and antimicrobial-stewardship programs (Ministry of Health, 2024).

Accordingly, several recommendations emerge from the literature. First, professional training programs in dental pharmacotherapy and patient counseling should become mandatory components of continuing education for community pharmacists. Second, digital prescription and reporting systems must be expanded to improve regulatory compliance and data sharing between dental clinics and pharmacies. Third, public awareness campaigns—implemented jointly by the MOH, SFDA, and professional associations—should address misconceptions about antibiotic use and emphasize timely dental consultation. Finally, collaborative research frameworks between pharmacists and dentists are essential to monitor emerging trends in self-medication and evaluate the effectiveness of educational interventions.

In conclusion, controlling dental self-medication in Saudi Arabia requires a multidimensional strategy that unites regulatory reform, pharmacist empowerment, and community education. By strengthening each of these components, policymakers can promote rational medication use, enhance oral-health outcomes, and advance the national agenda toward sustainable, patient-centered healthcare.

References

1. Alghadeer, S., Aljuaydi, K., Babelghaith, S., Alhammad, A., & Alarifi, M. N. (2018). Self-medication with antibiotics in Saudi Arabia. Saudi Pharmaceutical Journal, 26(5), 719–724. https://doi.org/10.1016/j.jsps.2018.02.018
2. Allam, A. T., & Amer, H. A. (2020). Community pharmacists' knowledge, attitudes, and practices regarding dental self-medication in Saudi Arabia. Journal of Pharmaceutical Health Services Research, 11(4), 369–376. https://doi.org/10.1111/jphs.12354
3. AlQahtani, H. A. (2019). Self-medication for oral health problems among adults attending a university dental hospital in Saudi Arabia. Saudi Dental Journal, 31(1), 30–34. https://doi.org/10.1016/j.sdentj.2018.09.003
4. AlRasheed, A., Yagoub, U., Alkhashan, H., et al. (2016). Prevalence and predictors of self-medication with antibiotics in a Saudi community: A cross-sectional study. Annals of Saudi Medicine, 36(6), 440–444. https://doi.org/10.5144/0256-4947.2016.440
5. Ministry of Health. (2024). Healthcare workforce efficiency and transformation under Vision 2030. Riyadh: Saudi Ministry of Health Publications.