Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/srrx8884

PERCEPTIONS OF MALE PATIENTS ON ORAL HEALTH AND FERTILITY: A QUALITATIVE STUDY

Dr Hussam Muhammad Ashfaq[1*], Saima Khan[2], Syed Midhat Batool[3], Dr Zunaira Qazi[4], Muhammad Ifham Khan Jadoon[5], Dr. Zuhra Anwar[6]

[1*]BDS, MCPS Periodontology, CHPE, CHR Chairperson and Associate Professor Khyber College of Dentistry
[2]BDS General Dentist Khyber College of Dentistry
[3]MSC Periodontology Assistant Professor Institution Bakhtawar Ameen medical and dental college Multan
[4]Mphil , Science of Dental Materials Lecturer , Watim medical and Dental College , Rawat , Rawalpindi
[5]MCPS Periodontology Assistant professor Dentistry department, Ayub Medical College Abbottabad Email : ifhamjadoon@yahoo.com
[6]BDS, DCD, CHPE Lecturer University of veterinary and Animal sciences, UVAS, Swat

***Corresponding Author:** Muhammad Ifham Khan Jadoon
*MCPS Periodontology Assistant professor Dentistry department, Ayub Medical College Abbottabad Email : ifhamjadoon@yahoo.com

Abstract:
Oral and periodontal diseases are common, but their effect on systemic health and reproductive function is often ignored. This qualitative study explored the perceptions of male patients regarding the possible influence of oral health on fertility. Limited attention has been given to how men view this link. The aim was to understand awareness, beliefs, and lived experiences of men related to oral health and fertility. A qualitative exploratory design was used. Semi-structured, in-depth interviews were carried out with male patients attending the dental outpatient department. The interview guide included open questions about understanding of oral health, fertility, and the possible connection between the two. Interviews were audio-recorded, transcribed, and thematically analyzed. hematic analysis identified three main themes: oral health understanding, perceptions of oral–fertility link, and barriers/facilitators.

Findings showed that most participants considered oral health important for daily life but had little knowledge about its possible role in reproductive health. Some participants believed that body systems are linked and that poor oral health may indirectly affect fertility through overall weakness or infection. Others expressed surprise at the idea and had never heard of such a connection. Barriers to oral care included lack of awareness, financial cost, and limited dental visits. Participants stated that if informed by health professionals, they would be willing to improve oral hygiene practices. The study concludes that awareness among men regarding the link between oral health and fertility is very low. Health education programs and counseling by dentists and physicians may help men understand the importance of oral care for general and reproductive health.

Introduction

Oral health is an important part of human well-being. Healthy teeth and gums help in eating, speaking, and maintaining confidence. Poor oral hygiene leads to gum disease, tooth decay, and infection. These problems not only cause local pain but can also affect the whole body [1]. Periodontal disease is a chronic condition that produces inflammation and allows bacteria to enter the blood [2]. Studies have linked it with diabetes, cardiovascular disease, and respiratory infections [3,4]. This shows that oral health and general health are closely connected.

Male fertility is another important issue in today's world. Many couples face difficulty in conceiving, and male factors contribute to almost half of these cases [5]. Causes of male infertility include low sperm count, poor sperm quality, infections, stress, and lifestyle choices [6]. However, the possible role of oral health in fertility is not well known to the public. Some recent research shows that gum disease and chronic oral infection may influence semen quality and reproductive hormones [8]. This relationship is still not fully understood but may be explained by the effect of inflammation and immune response on the male reproductive system.

In countries like Pakistan, awareness about oral health is already low. Dental visits are usually delayed until pain develops. At the same time, infertility is a sensitive topic that men may not openly discuss. These social and cultural factors make it more difficult to explore the link between oral health and fertility. If men are unaware of the possible impact, they may not see oral hygiene as a priority for their reproductive health.

Understanding patient perceptions is very important. Beliefs and awareness influence how people care for their health and when they seek medical help. If men believe that oral health has no connection with fertility, they may ignore dental advice. On the other hand, if they are informed and convinced, they may adopt better oral hygiene practices. Exploring these perceptions can therefore guide both dentists and physicians to improve patient education. Despite growing evidence of oral–systemic links, there is little published data about how men see this relation, especially in South Asian settings.

The objective of this study was to explore the perceptions and beliefs of male patients regarding the influence of oral health on fertility. This study aims to highlight awareness levels, lived experiences, and health-seeking behavior among men. The findings may help in designing educational interventions and integrating oral health counseling into general and reproductive health care.

Methods

This was a qualitative exploratory study conducted in dental clinics located in peripheral areas. Male patients above 18 years of age were recruited using purposive sampling. Patients with known systemic conditions that directly affect fertility were excluded. Data were collected through semi-structured, in-depth interviews. An interview guide with open-ended questions was developed by the research team. The interviews were conducted face-to-face in a private setting to ensure comfort and confidentiality. Each interview lasted between 40 and 50 minutes. With participant consent, interviews were audio-recorded and later transcribed word by word. Data collection continued until saturation was achieved, meaning no new ideas were emerging. Thematic analysis was used for data analysis. The transcripts were read several times, codes were developed, and similar codes were grouped into themes. Credibility was supported by member checking, where some participants reviewed summaries of their responses. Transferability was supported by giving a clear description of the study setting and sample. An audit trail of coding decisions was kept to increase dependability. Written informed consent was obtained from all participants. They were assured that their identity would remain confidential and that they could withdraw at any time without consequences.

Results

A total of 11 male patients from peripheral dental clinics participated in the study. Thematic analysis identified three major themes with several sub-themes. These reflect participants' understanding of oral health, their perceptions of a possible link between oral health and fertility, and the barriers or facilitators influencing awareness and practices.

Figure 1 Word Frequency

1. Theme 1: Oral health understanding and practices

Most participants defined oral health as the absence of pain, toothache, or bad smell. They focused on functions such as eating comfortably, having strong teeth, and maintaining fresh breath. Oral hygiene practices were described mainly in terms of daily brushing, but dental visits were irregular and often only in case of pain.

Representative Quotes:

- "For me, oral health means no bad smell and no pain."
- "Oral health means keeping the mouth clean and being able to eat properly."

2. Theme 2: Perceptions of a link between oral health and male fertility

Awareness of a direct connection between oral health and fertility was very limited. Many participants expressed surprise when asked about the relationship. Some believed that poor oral health could weaken the body or spread infection, which might indirectly affect fertility. Others admitted they had never heard of such a link.

Representative Quotes:

- "I never thought oral health can affect fertility, this is new to me."
- "If the body is weak due to infection, it may reduce fertility, so maybe gums are also important."

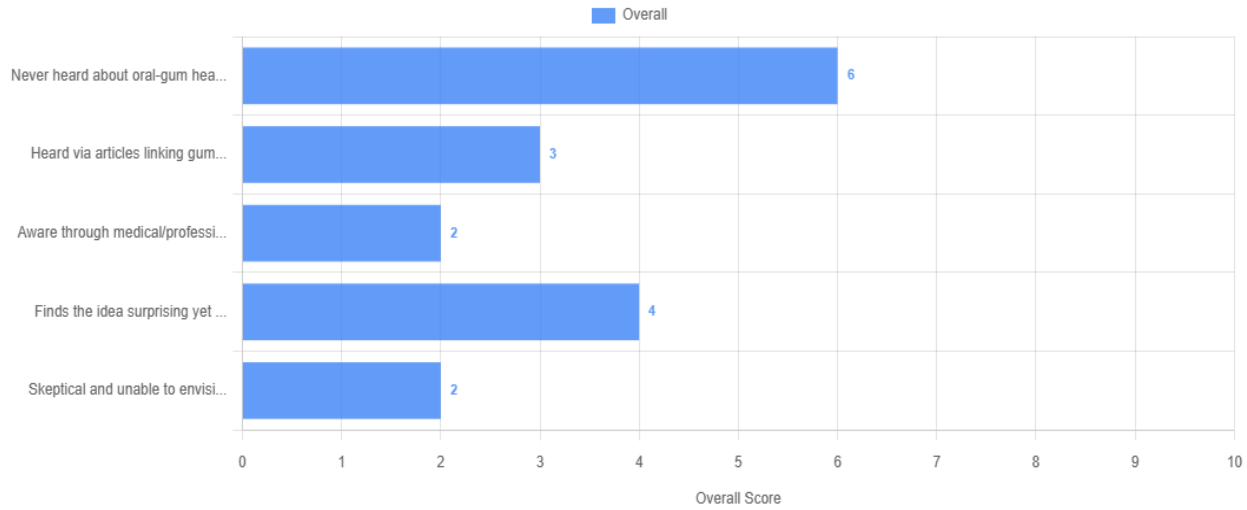

Figure 2 Awareness of male patients about the possible link between oral health and fertility

3. Theme 3: Barriers and facilitators to improving oral health and awareness

Barriers included financial costs, lack of awareness, and cultural silence around fertility issues. Facilitators included trust in doctors, willingness to change habits if guided by professionals, and belief in the importance of health for family life. Participants stated they would pay more attention if dentists clearly explained the impact on fertility.

Representative Quotes:

- "I go to the dentist only when pain is severe, because it costs money."
- "If my dentist tells me this can affect fertility, I will be more careful."

Theme	Sub-theme	Quote
Barriers and facilitators to improving oral health and awareness	Cultural and privacy barriers (sensitivity/taboo around discussing fertility, discomfort in discussing reproductive issues)	Personally, I have no issue discussing such matters, but I know many men of my generation consider it a taboo subject.
Barriers and facilitators to improving oral health and awareness	Preferred channels and trusted sources for awareness (TV, radio, mosques/ religious leaders, social media, free dental camps, local doctors/hakeems)	I read newspapers, follow TV health programs, and sometimes browse online medical articles.
Barriers and facilitators to improving oral health and awareness	Socioeconomic and practical barriers (cost of toothpaste/brushes, dental care expense, lack of time)	I brush once daily, sometimes twice if I have time.
Oral health understanding and practices	Function-focused definition (absence of pain and ability to eat)	For me, oral health means more than just avoiding toothache. It means keeping the mouth clean, free from bad odor, and ensuring that teeth and gums remain healthy in old age.
Oral health understanding and practices	Hygiene behaviors and routines (infrequent brushing, use of miswak, limited flossing/cleaning)	Honestly, very little. I brush maybe once or twice in a week when I remember. Most of the time I just rinse with water after food.
Oral health understanding and practices	Motivations for care (appearance/fresh breath, professional image, religious cleanliness)	For me, oral health means more than just avoiding toothache. It means keeping the mouth clean, free from bad odor, and ensuring that teeth and gums remain healthy in old age.
Perceptions of a link between oral health and male fertility	Deference to medical authority (willingness to accept and act on information if told by a dentist/doctor)	I would accept it because it is logical and evidence-based. I would also encourage younger people, especially my children, to pay attention to this aspect.
Perceptions of a link between oral health and male fertility	Limited prior awareness (many participants had never heard of the link)	No, never. This is the first time I am hearing about it.
Perceptions of a link between oral health and male fertility	Perceived biological plausibility (belief that oral infection/inflammation could enter blood and affect bodily/ reproductive health)	Chronic inflammation anywhere in the body can influence hormones and immunity. If oral infections increase inflammatory markers, fertility can certainly be impacted.

Discussion

This study explored how male patients understand oral health and how they see its possible relation to fertility. The findings show that oral health is mostly defined in simple and functional terms. Men link it with absence of pain, ability to chew, fresh breath, and social appearance. This agrees with other studies where lay definitions of oral health were centered on comfort and social image rather than prevention [1].

Hygiene practices were mixed. Some brushed daily but often without proper technique, while others brushed less often or used traditional tools like miswak. Cost and lack of time were common barriers. Similar patterns of irregular oral hygiene and reliance on cultural practices have been reported in South Asia [8]. Miswak use was also strongly tied with religion and ritual, showing that oral hygiene is not only a medical but also a cultural and spiritual practice [9].

Awareness of the oral health–fertility link was very low. Most participants had never heard of it. This gap is important because studies show periodontal disease can influence systemic inflammation and may affect reproductive hormones or semen quality [5,6]. A few men tried to build their own explanations, such as bacteria spreading through the blood, weakness from poor nutrition, or the mouth as a "gateway" to the body. These lay models resemble biomedical explanations but are less precise. This shows how people try to connect new health information with their lived experience [3].

Clinicians were identified as the most trusted source of information. Participants said that if dentists or doctors explained the link, they would change their behavior. This reflects the Health Belief Model,

where cues from professionals trigger action, but barriers like cost and time can still reduce compliance [10]. Social expectations and masculinity norms also influenced openness. Fertility is seen as a sensitive and private matter. Men were less likely to discuss it openly, but they would share if the clinician was trusted and confidential. This matches findings in other reproductive health studies [11].

The results also highlight the importance of community channels. Mosques, radio, and social media were mentioned as effective ways to spread awareness. This supports the socio-ecological model, which suggests that health behaviors are shaped not only by individual factors but also by community, institutional, and cultural influences [12]. Future studies should test if raising awareness improves oral hygiene behavior and fertility outcomes

The combination of inductive and deductive analysis gives a more complete picture. Inductive coding highlighted cultural elements such as miswak use, mosque-based outreach, and financial barriers. Deductive frameworks like the Health Belief Model and socio-ecological theory explained how susceptibility, norms, and multi-level influences shape behavior. Together they suggest that effective interventions must address both awareness and access.

The study was limited to a small number of patients from peripheral clinics. The findings may not represent men from urban or larger hospital settings. Self-reported practices may be influenced by recall or social desirability. The results cannot be generalized to all men in Pakistan, but they provide important insights for future research. Future research should include larger surveys to measure awareness in different populations. Experimental studies can test whether dentist-led counseling, mosque-based programs, or social media campaigns improve awareness and oral hygiene practices. Biomedical research is also needed to clarify how strong the link between periodontal disease and male fertility is, and to guide evidence-based education.

Conclusion

Male patients in this study had limited awareness of the possible relation between oral health and fertility. They mostly defined oral health in terms of pain, comfort, and appearance. Hygiene practices were uneven and influenced by cost, time, and cultural habits. While most participants had never heard of a link to fertility, they expressed willingness to change if guided by clinicians. Barriers included financial hardship and stigma, but facilitators included trust in doctors, religious practices, and community channels This study highlights a major gap in awareness. It suggests that dentists and physicians should integrate oral health counseling into reproductive health care.

References:

1. Nazir MA. Prevalence of periodontal disease, its association with systemic diseases and prevention. Int J Health Sci (Qassim). 2017;11(2):72–80.
2. Tonetti MS, Van Dyke TE. Periodontitis and atherosclerotic cardiovascular disease. J Clin Periodontol. 2013;40 Suppl 14:S24–9.
3. Linden GJ, Herzberg MC. Periodontitis and systemic diseases: a record of discussions of working group 4 of the Joint EFP/AAP Workshop. J Periodontol. 2013;84(4 Suppl):S20–3.
4. Kumar N, Singh AK. Trends of male factor infertility, an important cause of infertility: A review. Int J Res Med Sci. 2015;3(11):2721–4.
5. Nwhator SO, Alade GO, Ayanbadejo PO, et al. Male infertility and chronic periodontitis: any link? Int J Med Biomed Res. 2012;1(3):224–31.
6. Klinger A, Hibi H, Takagi G, et al. Dental infections and semen quality. Am J Dent. 2011;24(6):320–4.
7. Mortazavi V, Roozbeh N, Banaei M, et al. Exploring the link between periodontal disease and sperm quality: a comprehensive systematic review study. *BMC Oral Health*. 2025;25(1):742.
8. Al Habashneh R, Khader YS, Salameh S. Use of miswak and oral health practices among adults in Jordan. Oral Health Prev Dent. 2016;14(2):157-64
9. Sofrata A, Santangelo EM, Azeem M, et al. Miswak chewing stick: cultural and therapeutic uses. Saudi Med J. 2011;32(7):713-8.

10. Rosenstock IM, Strecher VJ, Becker MH. Social learning theory and the Health Belief Model. Health Educ Q. 1988;15(2):175-83.
11. Ali S, Sophie R, Imam AM, et al. Knowledge, perceptions and myths regarding infertility among selected adult population in Pakistan: a cross-sectional study. BMC Public Health. 2011;11:760.
12. McLeroy KR, Bibeau D, Steckler A, et al. An ecological perspective on health promotion programs. Health Educ Q. 1988;15(4):351-77.
13. Pourabbas R. The association between oral inflammatory load and reduced male fertility: inflammation as the link. *[Journal name—if available]*. 2023.
14. Ridho FM, Alfatah R, Cahyani SM, et al. Association between periodontitis and sperm quality: a systematic review and meta-analysis. *Rwanda Med J*. 2025;82(2):41–52.
15. Potiris A. From inflammation to infertility: how oxidative stress and inflammation affect male infertility. *Metabolites*. 2025;15(4):267.
16. Ludovichetti FS. Can periodontal disease affect conception? A literature review. *Reprod Fertil*. 2021;2(1):RAF-20-0043.