International Journal of Community Medicine and Public Health
Alamoudi RM et al. Int J Community Med Public Health. 2023 Nov;10(11):4451-4456
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20233149

Review Article

The impact of parental oral health behaviors on the oral health of children

Raed Mohammed Alamoudi[1]*, Riham Adel Showlag[2], Noor Jamal Almujil[3], Abdullah Mohammed Alzahrani[4], Waad Ibrahim Aladwani[5], Atheer Ahmad Alboeid[6], Yasmeen Taher Alsaleh[7], Jenan Yasir Alali[8], Atheer Jamil Alahmadi[3], Lojain Mohammed Nayas[9], Hanin Mathkar Al-Qahtani[10]

[1]Department of Pediatric Dentistry, Al Thager Hospital, Jeddah, Saudi Arabia
[2]Department of Pediatric Dentistry, Ministry of Health, Jeddah, Saudi Arabia
[3]College of Dentistry, Ibn Sina National College, Jeddah, Saudi Arabia
[4]University Medical Services Center, King Abdulaziz University, Jeddah, Saudi Arabia
[5]Dental Department, Adham General Hospital, Jeddah, Saudi Arabia
[6]College of Dentistry, Imam Abdurahman Bin Faisal University, Dammam, Saudi Arabia
[7]College of Dentistry, Riyadh Elm University, Riyadh, Saudi Arabia
[8]Cham Dental Clinics, Dammam, Saudi Arabia
[9]Primary Health Care, Ministry of Health, Riyadh, Saudi Arabia
[10]Armed Forces Hospitals, Khamis Mushait, Saudi Arabia

Received: 18 September 2023
Accepted: 03 October 2023

***Correspondence:**
Dr. Raed Mohammed Alamoudi,
E-mail: Raed.m.alamoudi@gmail.com

ABSTRACT

This review underscores the crucial role of parental oral health behaviors in shaping the oral health of children. It highlights the significance of parental knowledge, attitudes, and actions in influencing children's oral hygiene practices and overall well-being. Mothers, in particular, play a pivotal role in guiding their children's oral health habits. Parental oral health behaviors encompass a wide range of practices, including regular dental check-ups, proper oral hygiene routines, diet choices, and the avoidance of harmful habits like smoking and excessive sugar consumption. Active parental involvement in their children's oral care routines during their formative years is instrumental in establishing strong oral hygiene habits. Parents serve as primary role models and educators for their children, leading by example in maintaining good oral health practices. Encouraging parental engagement in oral health promotion programs is crucial for better oral health outcomes in future generations. Public health initiatives should emphasize the importance of parental involvement and provide resources and education to help parents instill sound oral health practices in their children. Recognizing the interconnectedness of oral health with overall well-being, it becomes evident that parental involvement is critical, especially for children who are vulnerable to oral health issues. Parents not only nurture and educate but also shape their children's oral health habits and attitudes. Additionally, contextual factors such as social, cultural, environmental, and economic conditions significantly influence family life and, consequently, oral health attitudes and behaviors.

Keywords: Dental health, Children, Parenting, Oral health behavior, Modelling

INTRODUCTION

Influence of parental oral health habits and knowledge on their children's oral health is well-documented.[1-3] Poor oral habits in children increase risk of dental caries.[4-6] Low socioeconomic status and inadequate parental oral health behaviors also contribute to dental caries.[7-10] Other factors, such as gender and various dimensions, including developmental aspects, play role.[11,12] Recognizing critical role of oral hygiene in overall health, it is crucial to provide comprehensive guidelines on children's oral health behavior and its correlation with dental caries. Addressing these multifaceted factors is essential for designing public health initiatives targeting both children and parental behaviors to enhance oral health and overall quality of life.

Oral health is intertwined with overall health and quality of life.[13] Globally, oral diseases pose significant public health challenges.[14] In developing countries, dental caries prevalence has surged, affecting many adults and approximately 60% of schoolchildren.[14,15] Studies in Iran report elevated mean dmft values, surpassing global and regional averages.[16,17] School-age period, spanning childhood to adolescence, is pivotal for developing oral health-related behaviors, beliefs, and habits.[13-17] Poor oral health in schoolchildren leads to limitations in daily activities and absenteeism.[14] To address this, WHO advocates integrating oral health promotion into school activities and curricula.[18] Effective programs often require reinforcement at home, primarily by mothers.[18] Recent Iranian research underscores the impact of targeting oral health promotion in both school and home settings, resulting in improved children's oral health.[1] Parental and teacher involvement, particularly that of mothers, significantly reinforces these programs.[1,19]

LITERATURE SEARCH

This study is based on a comprehensive literature search conducted on September 19, 2023, in the Medline and Cochrane databases, utilizing the medical topic headings (MeSH) and a combination of all available related terms, according to the database. To prevent missing any possible research, a manual search for publications was conducted through Google Scholar, using the reference lists of the previously listed papers as a starting point. We looked for valuable information in papers that discussed the impact of parental oral health behaviors on the oral health of children. There were no restrictions on date, language, participant age, or type of publication.

DISCUSSION

Oral health is integral component of overall well-being, and it is vital to instill and maintain excellent oral hygiene practices, particularly during childhood. Children, with their developing dentition and limited ability to independently care for their teeth, are particularly susceptible to oral health issues. Consequently, extensive attention has been directed towards examining impact of parental oral health behaviors on their children's oral health. This aspect is not only a subject of research but also a focal point in public health policy.

Numerous behavioral theories (Table 1), such as health belief model (Figure 1) and the Theory of Reasoned Action, emphasize the role of knowledge and attitudes in behavioral change.[20,21] This becomes particularly relevant when assessing parents' knowledge and attitudes toward their children's health behavior and status. Parents are central in providing children with information and encouragement for healthy living.[22] Parents' knowledge, beliefs, and the attitudes regarding oral health significantly influence their children's tooth-brushing behaviour.[2,23,24] Additionally, parents' attitudes positively impact their children's dental caries as well as the gingival health.[25,26]

In the family context, mothers play a pivotal role in shaping their children's oral health habits and status.[10,27,28] Despite changing family roles, mothers continue to influence their children's oral health-related lifestyles.[29] Further research is recommended to identify factors promoting children's oral health behavior, focusing on family characteristics and parent-child relationships.[2,22,24] While extensive research has examined parents' oral health-related knowledge and attitudes concerning preschoolers' oral health, limited studies have investigated school-aged children.[23,26] Understanding this relationship is crucial, particularly in societies where mothers play a significant role in raising their children.

Table 1: Models and frameworks applicable to the role of parental oral health behaviors in oral health of children.

Model/framework	Description
Health belief model	Emphasizes the role of parental knowledge, attitudes, and beliefs in shaping oral health behaviors and influencing children's habits.
Social cognitive theory	Focuses on observational learning and role modeling by parents and considers parental behaviors, attitudes, and self-efficacy in shaping children's behavior.
Theory of reasoned action/ planned behavior	Explores parental intentions, attitudes, subjective norms, and perceived behavioral control concerning their children's oral health practices.
Family systems theory	Examines family dynamics, communication, and interactions within the family context and their impact on parental and children's oral health behaviors.
Ecological model	Considers broader environmental, social, and cultural factors influencing parental oral health behaviors and their effects on children's oral health.

Continued.

Model/framework	Description
Social determinants of health model	Focuses on socio-economic factors influencing parental oral health behaviors and their potential to create health disparities in children.
Transtheoretical model (stages of change model)	Explores how parents progress through stages of change in modifying their oral health behaviors and how this influences their children.
Oral health literacy model	Highlights the importance of parents' oral health knowledge and literacy in influencing their children's oral health-related behaviors.
Life course perspective	Examines how parental oral health behaviors and experiences across the life course impact the oral health trajectories of their children.
Social-ecological model	Considers multi-level influences on oral health behaviors, including individual, interpersonal, community, and societal factors affecting parental behaviors and, subsequently, children's oral health.

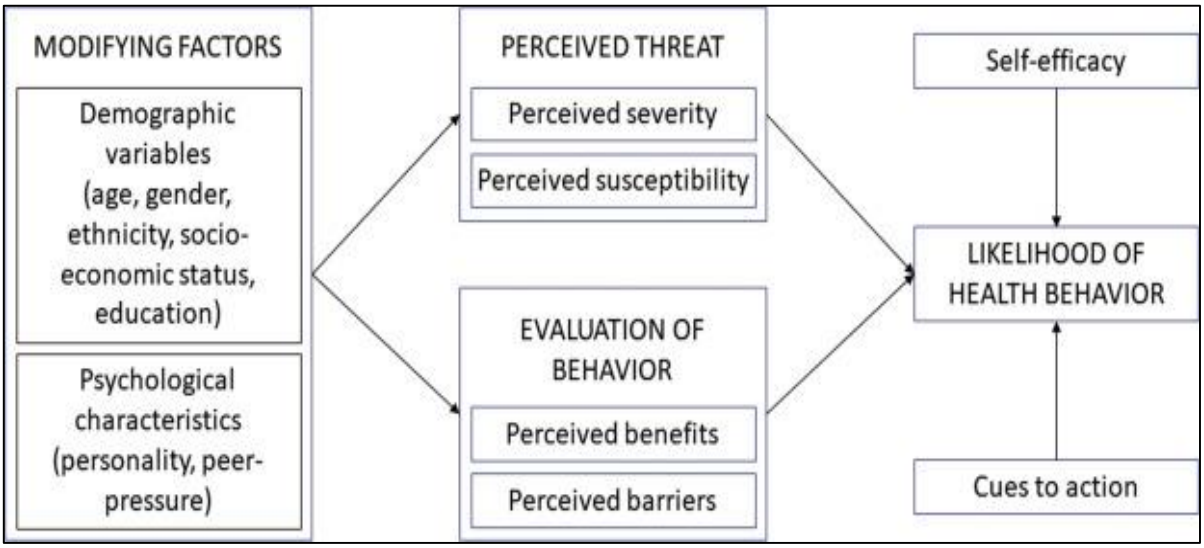

Figure 1: The health belief model.[30]

Parental oral health behaviors encompass a broad spectrum of practices that exert both direct and indirect influences on their children's oral health.[11] As mentioned earlier, these encompass regular dental check-ups, adherence to recommended oral hygiene routines, maintaining a balanced diet, and the avoidance of detrimental oral habits such as smoking and excessive sugar consumption. Furthermore, the role of parental supervision and active involvement in a child's oral care routine is pivotal in establishing robust oral hygiene practices during their early years.[31]

Parents serve as primary role models for their children in various aspects of life, including oral health.[32] Children tend to emulate their parents' behaviors and attitudes towards oral hygiene. When parents prioritize their oral health by consistently attending dental appointments, adhering to regular brushing and flossing routines, and making wise dietary choices, their children are more inclined to adopt these practices. Parental participation in a child's daily oral hygiene regimen is instrumental during their formative years.[31] As we delve into the intricate web of parental influences on children's oral health, it becomes evident that parents are not just passive observers but active facilitators. They guide their children through the crucial stages of toothbrushing habits.[33] These habits, introduced and practiced daily by children under parental guidance, serve as the first line of defense against oral pathologies like periodontal diseases and dental caries.[34] Parents wield considerable influence in shaping their children's dietary habits, which directly impact oral health.[35] A diet abundant in sugary snacks and beverages heightens the risk of tooth decay. Conversely, parents who advocate for a balanced diet with restricted sugar intake contribute to improved oral health outcomes for their children. Further, parental awareness regarding preventive measures, such as fluoride treatments and dental sealants, plays a pivotal role in reducing the likelihood of dental issues in children.[36] Identifying dental problems early and promptly intervening is facilitated when parents prioritize regular dental check-ups for their children. Parents who abstain from detrimental oral habits, such as smoking or excessive alcohol consumption, safeguard not only their own oral health but also set a positive example for their children.[37] These behaviors can result in adverse oral health outcomes and increase the likelihood of children adopting similar habits in the future.

The influence of parental oral health behaviors on their children's oral health is profound and multi-dimensional. Parents serve as role models, educators, and facilitators of healthy oral habits during a child's developmental years.[22,29,31] Encouraging parental engagement in oral health promotion and prevention programs is imperative for enhancing the oral health outcomes of subsequent generations. Public health initiatives should underscore the significance of parental involvement and offer resources and education to assist parents in cultivating sound oral health practices in their children. Ultimately, the proactive efforts of parents can make a substantial contribution to reducing the prevalence of oral diseases among children and promoting enduring oral health.[10,26,27]

Furthermore, it is essential to acknowledge the interconnectedness of oral health with overall health and well-being. Establishing and maintaining good oral hygiene practices from an early age is not only conducive to a healthy mouth but also contributes to an individual's overall health.[38] Given the vulnerability of children to oral health issues, parental involvement in oral health promotion becomes even more critical. Parents play a pivotal role as nurturers and educators, shaping their children's oral health habits and attitudes. In this holistic approach to oral health, family environments that encourage and support healthy choices are key influencers.[29] Parents with effective coping skills and self-efficacy in leading healthy lives set positive examples.[39-41] Moreover, satisfaction with healthcare and trust in the dental system reinforce the value of oral health.[42]

Furthermore, research reveals that parental behaviors hold more sway over children's oral health behavior than knowledge and attitudes alone.[23] Mothers' oral health-related knowledge, for instance, has been correlated with dental caries in 3-year-old children.[25] However, it is essential to recognize that differences exist between boys and girls regarding the factors influencing their dental health. Boys are more influenced by their father's occupational level, while girls are more affected by their father's knowledge and behavior.[43] This underscores the need for comprehensive school health educational interventions involving the entire family, providing children with well-rounded preventive guidelines.

In this holistic perspective, we must acknowledge the profound impact of social, cultural, environmental, and economic conditions on family life.[44] These contextual factors play a pivotal role in shaping oral health attitudes and behaviors, either positively or negatively. Therefore, any approach to oral health promotion must consider these broader influences to create a more effective and sustainable impact on children's oral health and, by extension, their overall well-being.

CONCLUSION

In summary, parental oral health habits significantly impact children's oral well-being, underscoring the importance of comprehensive public health initiatives. This influence extends to various facets of children's lives, from daily oral routines to dietary choices and overall quality of life. Recognizing parents as active facilitators in shaping children's oral health behaviors is essential, emphasizing the need for holistic family-centered interventions that consider broader contextual factors.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Mattila M-L, Rautava P, Sillanpää M, Paunio P. Caries in five-year-old children and associations with family-related factors. J Dental Res. 2000;79(3):875-81.
2. Adair PM, Pine CM, Burnside G, Nicoll AD, Gillett A, Anwar S et al. Familial and cultural perceptions and beliefs of oral hygiene and dietary practices among ethnically and socio-economicall diverse groups. Comm Dental Heal. 2004;21(1):102-11.
3. Mattila M-L, Rautava P, Ojanlatva A, Paunio P, Hyssälä L, Helenius H et al. Will the role of family influence dental caries among seven-year-old children? Acta Odontol Scand. 2005;63(2):73-84.
4. Gibson S, Williams S. Dental Caries in Pre-School Children: Associations with Social Class, Toothbrushing Habit and Consumption of Sugars and Sugar-Containing Foods: Further Analysis of Data from the National Diet and Nutrition Survey of Children Aged 1.5-4.5 Years. Caries Res. 1999;33(2):101-13.
5. Hausen H, Kärkkäinen S, Seppä L. Application of the high-risk strategy to control dental caries. Comm Dentistr Oral Epidemiol. 2000;28(1):26-34.
6. Mattila M-L, Rautava P, Aromaa M, Ojanlatva A, Paunio P, Hyssälä L et al. Behavioural and demographic factors during early childhood and poor dental health at 10 years of age. Caries Res. 2005;39(2):85-91.
7. Flinck A, Kallestal C, Holm A, Allebeck P, Wall S. Social and oral health related behavioural patterns. Comm Dent Health. 1999;16:160-5.
8. Källestål C, Wall S. Socio-economic effect on caries. Incidence data among Swedish 12-14-year-olds. Comm Dentistr Oral Epidemiol. 2002;30(2):108-14.
9. Petersen PE. Sociobehavioural risk factors in dental caries–international perspectives. Comm Dentistr Oral Epidemiol. 2005;33(4):274-9.
10. Okada M, Kawamura M, Kaihara Y, Matsuzaki Y, Kuwahara S, Ishidori H et al. Influence of parents' oral health behaviour on oral health status of their school children: an exploratory study employing a causal modelling technique. Int J Paediatr Dentistr. 2002;12(2):101-8.

11. Fisher-Owens SA, Gansky SA, Platt LJ, Weintraub JA, Soobader MJ, Bramlett MD et al. Influences on children's oral health: a conceptual model. Pediatrics. 2007;120(3):e510-20.
12. Schou L, Currie C, McQueen D. Using a "lifestyle" perspective to understand toothbrushing behaviour in Scottish schoolchildren. Comm Dentistr Oral Epidemiol. 1990;18(5):230-34.
13. Wandera A, Inglehart M. Early childhood caries and quality of life: child and parent perspectives. Pediatr Dent. 2009.
14. Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century–the approach of the WHO Global Oral Health Programme. Comm Dentistr Oral Epidemiol. 2003;31:3-24.
15. Pakpour AH, Hidarnia A, Hajizadeh E, Kumar S, Fridlund B. Why Iranian adolescents do not brush their teeth: a qualitative study. Int J Dental Hygiene. 2012;10(2):86-90.
16. Bayat Movahed S, Samadzadeh H, Ziyarati L, Memory N, Khosravi R, Sadr Eshkevari P. Oral health of Iranian children in 2004: a national pathfinder survey of dental caries and treatment needs. Eastern Mediterranean Health J. 2011;17(3):243-9.
17. Saied-Moallemi Z, Virtanen J, Tehranchi A, Murtomaa H. Disparities in oral health of children in Tehran, Iran. Eur Arch Paediatr Dentistr. 2006;7:262-4.
18. Kwan SY, Petersen PE, Pine CM, Borutta A. Health-promoting schools: an opportunity for oral health promotion. Bull W Heal Organ. 2005;83(9):677-685.
19. Paunio P. Dental health habits of young families from southwestern Finland. Comm Dentistr Oral Epidemiol. 1994;22(1):36-40.
20. Ajzen I. Understanding attitudes and predictiing social behavior. Englewood cliffs. 1980.
21. Noar SM. A health educator's guide to theories of health behavior. Int Quarterly Comm Heal Educat. 2004;24(1):75-92.
22. Christensen P. The health-promoting family: a conceptual framework for future research. Social Sci Med. 2004;59(2):377-87.
23. Poutanen R, Lahti S, Tolvanen M, Hausen H. Parental influence on children's oral health-related behavior. Acta Odontologica Scandinavica. 2006;64(5):286-92.
24. Skeie MS, Riordan PJ, Klock KS, Espelid I. Parental risk attitudes and caries-related behaviours among immigrant and western native children in Oslo. Community Dentistry Oral Epidemiol. 2006;34(2):103-13.
25. Szatko F, Wierzbicka M, Dybizbanska E, Struzycka I, Iwanicka-Frankowska E. Oral health of Polish three-year-olds and mothers' oral health-related knowledge. Comm Dental Heal. 2004;21(2):175-80.
26. Okada M, Kawamura M, Miura K. Influence of oral health attitude of mothers on the gingival health of their school age children. ASDC J Dentistr Children. 2001;68(5-6):379-83.
27. Saied-Moallemi Z, Murtomaa H, Tehranchi A, Virtanen J. Oral health behaviour of Iranian mothers and their 9-year-old children. Oral Heal Preventive Dentistr. 2007;5(4).
28. Astrøm A. Parental influences on adolescents' oral health behavior: two-year follow-up of the Norwegian Longitudinal Health Behavior Study participants. Eur J Oral Sci. 1998;106(5):922-30.
29. Rossow I. Intrafamily influences on health behavior: a study of interdental cleaning behavior. J Clin Periodontol. 1992;19(10):774-8.
30. Rosenstock IM, Strecher VJ, Becker MH. Social learning theory and the health belief model. Healt Education Quarterly. 1988;15(2):175-83.
31. Castilho ARFd, Mialhe FL, Barbosa TdS, Puppin-Rontani RM. Influence of family environment on children's oral health: a systematic review. J Pediatria. 2013;89:116-23.
32. Deinzer R, Shankar-Subramanian S, Ritsert A, Ebel S, Wöstmann B, Margraf-Stiksrud J et al. Good role models? Tooth brushing capabilities of parents: a video observation study. BMC Oral Health. 2021;21(1):1-11.
33. Owen J, Gray-Burrows KA, Eskytė I, Wray F, Bhatti A, Zoltie T et al. Co-design of an oral health intervention (HABIT) delivered by health visitors for parents of children aged 9-12 months. BMC Public Heal. 2022;22(1):1-14.
34. Löe H. Oral hygiene in the prevention of caries and periodontal disease. Int Dental J. 2000;50(3):129-39.
35. Gao X-L, Hsu C-Y, Xu Y, Loh T, Koh D, Hwarng H. Behavioral pathways explaining oral health disparity in children. J Dental Res. 2010;89(9):985-90.
36. Nair BG, Singh S. Parental perspectives on self-care practices and dental sealants as preventive measures for dental caries. S Afr Dental J. 2016;71(4):156-60.
37. Case A, Paxson C. Parental behavior and child health. Health Affairs. 2002;21(2):164-78.
38. Sischo L, Broder H. Oral health-related quality of life: what, why, how, and future implications. J Dental Res. 2011;90(11):1264-70.
39. Finlayson TL, Siefert K, Frisch K, Ismail A. Self-efficacy beliefs and oral health in low-income African American children and their caregivers in Detroit. Paper presented at: 132nd Annual Meeting of the American Public Health Association. 2004.
40. Science CoCoS, Behavioral Research to Improve the Public's Health DoHP, Disease Prevention IoM. Promoting health: Intervention strategies from social and behavioral research. Am J Heal Promotion. 2001;15(3):149-66.
41. Hertzman C, Power C. Child development as a determinant of health across the life course. Current Paediatrics. 2004;14(5):438-43.
42. Graham MA, Logan HL, Tomar SL. Is trust a predictor of having a dental home? J Am Dental Asso. 2004;135(11):1550-58.

43. Poutanen R, Lahti S, Tolvanen M, Hausen H. Gender differences in child-related and parent-related determinants of oral health-related lifestyle among 11-to 12-year-old Finnish schoolchildren. Acta Odontologica Scandinavica. 2007;65(4):194-200.
44. Amin MS, Harrison RL. Understanding parents' oral health behaviors for their young children. Qualitative Health Res. 2009;19(1):116-27.

Cite this article as: Alamoudi RM, Showlag RA, Almujil NJ, Alzahrani AM, Aladwani WI, Alboeid AA et al. The impact of parental oral health behaviors on the oral health of children. Int J Community Med Public Health 2023;10:4451-6.