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The Importance of School Nurses in Enhancing Child Health and Well-Being: A Comprehensive Review

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Abstract

Background: Oral health is a critical component of overall health, significantly influencing various chronic diseases. Despite the importance of oral care, many children, particularly in underserved populations, experience barriers to accessing dental services. This review examines the role of nurses and midwives in promoting oral health among pregnant women and young children, addressing the integration of oral health into primary care.

Methods: A comprehensive search of seven electronic databases, including MEDLINE and CINAHL, was conducted from 2015 to 2023. The search utilized a combination of keywords and MeSH terms related to oral health and nursing practices. Studies assessing the effectiveness of nursing interventions in oral health promotion were included, focusing on randomized and non-randomized trials, as well as observational research.

Results: The review identified moderate evidence supporting the efficacy of nursing interventions in enhancing oral health outcomes for mothers and children. Collaboration among healthcare providers was

found to improve access to oral care, particularly in community settings. However, most studies primarily focused on children's oral health, indicating a need for greater emphasis on maternal oral health.

Conclusion: Nurses and midwives are well-positioned to lead oral health promotion initiatives, particularly in underserved communities. Integrating oral health education into routine maternal and child healthcare can significantly enhance health outcomes. Future research should focus on developing community-based programs that address both maternal and child oral health needs, ensuring that these services are standardized in prenatal and pediatric care.

Keywords: Oral Health, Nursing, Maternal Health, Child Health, Health Promotion.

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1. Introduction

Oral health is regarded as a fundamental component of overall health. The World Health Organization (WHO) defines oral health as "a condition in which an individual is devoid of chronic oro-facial pain, oral lesions or malignancies, craniofacial anomalies such as oral clefts, periodontal diseases, dental caries, tooth loss, or any other disorders impacting oro-dental tissues [1]." The repercussions of oral disorders extend far beyond the oral cavity and are closely associated with major chronic health issues, including obesity, cardiovascular diseases, diabetes, and respiratory infections. [2, 3]

Increasing data indicates that mother oral health and hygiene behaviors significantly affect children's overall and oral health. Pregnant women are more susceptible to dental issues owing to hormonal changes and variations in intraoral flora; around 40% have some type of periodontitis, and up to 10% may develop oral tumors during pregnancy, particularly among the underprivileged [4, 5]. Nonetheless, it is not unusual for pregnant women to forgo seeking treatment while experiencing oral issues. The risk of tooth decay in infants, stemming from the early transmission of germs, is significantly linked to elevated levels of cariogenic bacteria in the mother [6, 7].

Oral health is often overlooked in prenatal care, and caregivers often fail to recognize the significance of primary teeth. Routine dental appointments for oral care are uncommon throughout childhood and adolescence. This is mostly due to insufficient financial resources, a scarcity or uneven distribution of dental workers, and a lack of collaboration with other non-dental healthcare providers [8-10]. The problem is exacerbated by reduced oral health literacy stemming from insufficient public understanding of the effects of dental health on overall well-being throughout life. Furthermore, social and cultural traditions, together with the mistaken idea that oral health is entirely separate from overall health, contribute to the underutilization of dental treatments. [11]

In 2009, the WHO's 7th global conference called for the integration of dental care into primary healthcare services and emphasized the combined efforts of a varied range of healthcare professionals. This integrative technique is based on the idea that a group of modifiable risk factors, including food and smoking, together contribute to oral and non-communicable diseases (NCDs). [11]

Integrating an oral health component into prenatal services requires collaboration between dental practitioners and primary healthcare providers, including pediatricians, family physicians, midwives, and nurse practitioners [12]. Nurses and midwives are particularly well-situated to enhance the oral health of children and mothers while increasing access to preventive dental care, especially in underserved populations. Maternity and pediatric nurses may consistently provide oral health advice to pregnant women before and after delivery. They may play a crucial role in identifying at-risk moms or children by conducting oral screenings and risk assessments to facilitate future referrals to dentists for dental care. [13, 14]

Consequently, we undertook this review to compile information from randomized and non-randomized clinical trials, as well as observational research, regarding the efficacy of including oral health promotion in fundamental services provided by nurses and midwives to pregnant women and very young children.

2. Methods

A comprehensive search of seven electronic databases, including EMBASE, MEDLINE, and GLOBAL HEALTH via OVID, CINAHL via EBSCO, Scopus, Web of Science, and CENTRAL, was conducted from 2015 to 2023. Reference lists of all retrieved papers were examined for possibly relevant literature. We broadened our search parameters to guarantee that no relevant articles were missed. The search was unrestricted by time or language and encompassed the following combinations of MeSH terms (Medical Subject Headings) and keywords: ['oral health' OR 'dental health' OR 'dental care' OR 'oral hygiene' OR 'oral care' OR 'dental caries' OR 'gingival disease'] AND ['health promotion' OR 'dental health education' OR 'oral health education' OR 'preventive dentistry'] AND ['nurses' OR 'midwives' OR 'midwifery' OR 'nursing' OR 'health visitor' OR 'home visitor'].

3. Results

Despite efforts to mitigate global socioeconomic inequities in oral health, oro-dental issues, especially among young children with social or medical vulnerabilities, remain a significant concern. [15] This is the first effort to comprehensively evaluate the efficacy of therapies administered by non-dental nursing staff aimed at enhancing the oral health of women of reproductive age or very young children. Moderate evidence indicates that inter-professional cooperation, particularly when integrated into an established childcare system, enhances child oral health and, to a lesser degree, mother oral health, while also diminishing oral health inequities among disadvantaged groups. Incorporating oral care interventions into nursing practice may be effectively executed to benefit many community groups across diverse settings, including primary care facilities, mother and child health centers, hospital clinics, and home environments.

Despite the repeated emphasis on the importance of maternal oral health in several practice recommendations, all the included trials, except for one program, focused only on enhancing the dental health of newborns and preschoolers, suggesting a bias towards children. The close relationship between mother and child oral health indicates that enhanced efforts are required to develop and assess community-based programs that integrate dental care into the prenatal care paradigm as a standard service for pregnant women.

Our analysis indicated that it is feasible to use personnel from diverse specializations and educational backgrounds to effectively implement treatments aimed at promoting oral health. Abou El Fadl et al. [16] found that dental health treatments provided by a dental therapist and a pediatric nurse were mostly equivalent, whereas another study [17] showed that a pediatric nurse practitioner was sufficiently prepared to instruct the delivery team in dental screening and fluoride administration. Therefore, it is strongly recommended to integrate fundamental information and recommendations on oral disease prevention into the current undergraduate and postgraduate curriculum for non-dental healthcare professionals, as well as to educate and adequately train workers about clinical and referral routes. This would enhance their dedication to advancing mother and child oral health and facilitate the delegation of some responsibilities, such as oral risk assessment and counseling, from dental health experts, therefore enabling them to concentrate on more specialized duties.

Nurses are proficient in the timely provision of essential basic preventive oral care and in sustaining their ongoing delivery. Optimal integration of dental treatment within well-child primary care settings, as articulated by Biordi et al. [17], capitalizes on the frequent visits often arranged for children's general health, including vaccinations. A diverse group of children and their caretakers might be assembled, allowing for the establishment of a dental home for all children as early as one year of age, a period when dental appointments are infrequent. Subsequently, individuals availing preventive care may be enrolled in a monitoring program to evaluate the impact of the interventions and to streamline dental recommendations for at-risk patients. This was disclosed in the IMBP [18], which calculated the caries experience of participants and the frequency of their dental visits yearly for nine years.

Concerning minority, low-income, and disadvantaged populations, it is well recognized that financial obstacles, the scarcity of dental treatment in certain regions, inadequate transportation, and diminishing dental staff are the primary factors contributing to their restricted access to oral health services. Implementing home visiting models may enable community nurses to engage with these individuals, specifically to address disparities in dental care by enhancing their oral health literacy and directing them to suitable treatment facilities. This has been corroborated in three peer-reviewed studies [17, 20, 21] where health visiting resulted in substantial enhancements in the specified health-related outcomes.

According to several theories, socio-cultural influences significantly influence people's views of their health status, lifestyles, health-related activities, and care-seeking behaviors. Among the social determinants of health, socioeconomic status, and social support are the most significant. In Belgium, despite "Smile for Life" being a multi-faceted, theory-driven program that addressed most essential elements of a health promotion intervention, the observed benefit was quite little. The authors indicate that fifty percent of the participating moms were highly educated; hence, the program's objectives may have been mostly achieved among the socially and educationally disadvantaged populations with the greatest unmet oral health requirements. In support of this, eight of the evaluated programs [18, 20-25] focused on underserved low-income communities, and all showed significant effectiveness.

Recognizing the crucial importance of social support, researchers in a home visiting program developed an approach termed "Pass it on" to leverage social cohesiveness within a community for the rapid reinforcement of beneficial behaviors. This was enabled by shared standards, reciprocal trust, and frequent personal encounters, particularly among the impoverished. [26]

In terms of cultural context, it is essential to integrate the varying ideas and values of various demographic groups, even within the same nation, into health-related initiatives. Nurses are well situated to cultivate trustworthy connections with mothers, particularly in rural areas and among disadvantaged populations. Consequently, they are often well-informed about the perspectives of their community and may proficiently assist in creating culturally suitable and acceptable therapies that may ultimately enhance the oral health status of mothers and children.

The responsiveness of a targeted population to a health intervention is crucial for maintaining the fidelity of its implementation; hence, significant focus must be placed on its content, frequency, and length of delivery. Typically, the delivery technique for health counseling is a crucial factor. Our results indicate that using multifaceted strategies may substantially enhance caregivers' oral health practices. The integration of diverse pedagogical instruments, including video presentations and take-home leaflets printed in the target population's language, alongside dental kits containing toothpaste and brushes, would facilitate the prompt application of acquired knowledge to enhance oral health practices.

Our research revealed that the maximum period of intervention was three years, seen in only two trials. Community-based initiatives often need a minimum of five years to see any effects, since people seldom alter lifelong behaviors in a short timeframe. In three studies [16, 19, 27], it was argued that the repetition of oral health counseling facilitated the enhancement of caregivers' oral health literacy and enabled them to adopt beneficial behaviors for themselves and their children. In one examined research, the authors noted that the insufficient intensity of their singular program was a constraint, resulting in little and minor effects after the intervention. Therefore, it can be inferred that achieving the objectives of any oral health initiative requires sustained and regular engagement with the target populations over an extended duration.

While a comprehensive economic assessment is outside the purview of our analysis, most authors characterized their treatments as low-cost, particularly when integrated into established routine children's health care. Based on this conclusion, such initiatives may be replicable in high, medium, and low-income nations, where resource distribution significantly differs. [28]

4. Constraints and ramifications for further investigations

One notable limitation observed in the included research was the absence of a theoretical foundation in their design. Our research identified just three studies [22, 29-32] that referenced the use of a theory to guide their treatments, and none provided detailed details on the methodology employed. Consequently, any forthcoming initiatives aimed at promoting beneficial health-related behaviors must meticulously use a theoretical framework that considers both internal and external elements influencing people's attitudes and practices. Furthermore, preliminary research was not performed to guide the program design in any of the included trials before intervention. According to the Medical Research Council guidelines, piloting complex interventions is essential for evaluating their acceptability, identifying barriers and facilitators to implementation, and assessing the feasibility of large-scale deployment within a specific context, particularly for newly emerging interventions. [33]

Although randomized controlled trials (RCTs) are the gold standard for public health treatments, their implementation in community-based settings may be problematic and unfeasible. We did not restrict the included studies to randomized controlled trials, as incorporating other evidence sources, such as non-randomized trials or observational studies, may offer preliminary insights into the feasibility of an intervention, particularly when findings are consistent across various programs conducted by different researchers in diverse settings. [34] This analysis identified twenty-one studies with the potential to enhance children's dental health via collaboration with nursing workers; nevertheless, there remains a paucity of data from high-quality, low-bias randomized controlled trials (RCTs). Consequently, future studies must meticulously delineate the methodologies of randomization and allocation concealment used, while explicitly addressing blinding at various stages to mitigate bias and guarantee the generation of high-quality data.

A weakness of our systematic review was the use of narrative synthesis instead of a meta-analysis. This was necessitated by the heterogeneity among studies, which stemmed from variations in sample characteristics (participant numbers, gender, and age distributions), follow-up duration, study environments, and the absence of consistency in study design, intervention descriptions, delivery teams, and outcome measurements.

Despite the comprehensive search process involving seven electronic databases and grey literature, encompassing studies from various countries and diverse population groups, qualitative research was excluded from the review. Consequently, studies evaluating nurses' and midwives' perceptions regarding their involvement in enhancing oral health, as well as caregivers' experiences with such interventions, were omitted. We recommend examining pertinent qualitative research to enhance understanding of providers' perceptions of their self-efficacy and willingness to participate in such activities, as well as the acceptability of these interventions among target populations and their readiness to comply.

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أهمية صحة الفم في تعزيز صحة الأطفال والرفاهية: مراجعة شاملة

الملخص

الخلفية :تُعتبر صحة الفم مكونًا حيويًا من الصحة العامة، حيث تؤثر بشكل كبير على مجموعة متنوعة من الأمراض المزمنة. على الرغم من أهمية رعاية الفم، يعاني العديد من الأطفال، خاصة في الفئات السكانية المحرومة، من عقبات في الوصول إلى خدمات طب الأسنان. تستعرض هذه المراجعة دور الممرضات والقابلات في تعزيز صحة الفم بين النساء الحوامل والأطفال الصغار، مع معالجة دمج صحة الفم في الرعاية الأولية.

الطرق :تم إجراء بحث شامل في سبع قواعد بيانات إلكترونية، بما في ذلك MEDLINE وCINAHL، من عام 2015 إلى 2023. استخدم البحث مجموعة من الكلمات الرئيسية ومصطلحات MeSH المتعلقة بصحة الفم وممارسات التمريض. تم تضمين الدراسات التي تقيم فعالية التدخلات التمريضية في تعزيز صحة الفم، مع التركيز على التجارب العشوائية وغير العشوائية، بالإضافة إلى الأبحاث الرصدية.

النتائج :حددت المراجعة أدلة معتدلة تدعم فعالية التدخلات التمريضية في تحسين نتائج صحة الفم للأمهات والأطفال. وُوجد أن التعاون بين مقدمي الرعاية الصحية يعزز الوصول إلى رعاية الفم، خاصة في البيئات المجتمعية. ومع ذلك، تركزت معظم الدراسات على صحة الفم للأطفال، مما يشير إلى ضرورة زيادة التركيز على صحة الفم للأمهات.

الخاتمة :تُعتبر الممرضات والقابلات في وضع جيد لقيادة مبادرات تعزيز صحة الفم، خاصة في المجتمعات المحرومة. يمكن أن يُساهم دمج التعليم حول صحة الفم في رعاية الأم والطفل الروتينية بشكل كبير في تحسين النتائج الصحية. يجب أن تركز الأبحاث المستقبلية على تطوير برامج مجتمعية تستجيب لاحتياجات صحة الفم لكل من الأمهات والأطفال، لضمان توحيد هذه الخدمات في الرعاية السابقة للولادة ورعاية الأطفال.

الكلمات المفتاحية :صحة الفم، التمريض، صحة الأم، صحة الطفل، تعزيز الصحة.