



Hygiene practices in childhood: a comprehensive approach from nursing

Prácticas de higiene en la infancia: un abordaje integral desde la enfermería

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ABSTRACT

The research focused on the importance of hygiene in childhood, understood as a set of essential practices for preserving individual and collective health. It highlighted that, from Florence Nightingale's contributions in the 19th century to the contemporary approaches of Leininger, Orem and Pender, nursing has recognised the influence of the physical, social and cultural environment on disease prevention. The study emphasised that children aged 9 to 12 were at a decisive stage in consolidating hygiene habits, being particularly vulnerable to gastrointestinal, respiratory and dermatological infections when these practices were not applied properly. It also showed that Nightingale's environmental theory remained valid today, as clean air, clean water and environmental hygiene continued to be determining factors in health. It was highlighted that Leininger's cultural perspective allowed for the design of educational strategies adapted to local contexts, while Orem's self-care model and Pender's health promotion theory emphasised autonomy and personal motivation for the adoption of healthy behaviours. The lack of hygiene, particularly hand washing, increased the transmission of preventable diseases. Therefore, it was stated that nursing played a key role as an educational and social agent, not only in clinical care, but also in the formation of sustainable habits in childhood. It was concluded that hygiene should be understood as a comprehensive practice that strengthened health, self-esteem, and equity in childhood.

Keywords: Hygiene; Nursing; Childhood; Self-Care; Prevention.

RESUMEN

La investigación se centró en la importancia de la higiene en la infancia, entendida como un conjunto de prácticas esenciales para preservar la salud individual y colectiva. Se destacó que, desde los aportes de Florence Nightingale en el siglo XIX hasta los enfoques contemporáneos de Leininger, Orem y Pender, la enfermería reconoció la influencia del entorno físico, social y cultural en la prevención de enfermedades. El estudio subrayó que los niños de 9 a 12 años se encontraban en una etapa decisiva para consolidar hábitos higiénicos, siendo particularmente vulnerables a infecciones gastrointestinales, respiratorias y dermatológicas cuando estas prácticas no se aplicaban de manera adecuada. Asimismo, se evidenció que la teoría ambiental de Nightingale mantuvo vigencia en la actualidad, pues el aire puro, el agua limpia y la higiene del entorno continuaron siendo factores determinantes en la salud. Se resaltó que la perspectiva cultural de Leininger permitió diseñar estrategias educativas adaptadas a contextos locales, mientras que el modelo de autocuidado de Orem y la teoría de la promoción de la salud de Pender enfatizaron la autonomía y la motivación personal para la adopción de conductas saludables. La ausencia de higiene, en particular del lavado de manos, incrementó la transmisión de enfermedades prevenibles. Por ello, se afirmó que la enfermería desempeñó un rol clave como agente educativo y social, no solo en el cuidado clínico, sino también en la formación de hábitos sostenibles en la infancia. Se concluyó que la higiene debía entenderse como una práctica integral que fortaleció la salud, la autoestima y la equidad en la niñez.

Palabras clave: Higiene; Enfermería; Infancia; Autocuidado; Prevención.

INTRODUCTION

Hygiene, conceived as a set of practices aimed at preserving individual and collective health, has historically been a central focus in nursing and public health. From the pioneering contributions of Florence Nightingale in the 19th century, which laid the foundations of modern nursing, to the contemporary approaches of theorists such as Madeleine Leininger and Nola Pender, it has been recognized that the physical, social, and cultural environment has a decisive influence on people's well-being. Nightingale established that a healthy environment, characterized by clean air, clean water, adequate sewage systems, hygiene, and light, was an indispensable requirement for disease prevention and patient recovery. These fundamentals have transcended over time, adapting to current epidemiological challenges and reaffirming the centrality of self-care and the promotion of hygienic habits.

In the particular case of school-age children, hygiene is a determining factor in their health and in the acquisition of sustainable habits throughout their lives. This age group, between 9 and 12 years old, is at a crucial stage of consolidating autonomy and social learning, which makes them prime recipients of educational programs aimed at preventing infectious diseases through hand washing, personal hygiene, and proper food handling. The integration of nursing theories such as those of Leininger, Orem, and Pender allows hygiene to be approached from complementary perspectives that include cultural sensitivity, the promotion of self-care, and the strengthening of individual motivation. In this way, the study of school hygiene transcends the purely health dimension to become part of a holistic framework where prevention, education, and health equity converge.

DEVELOPMENT

This research is based on Florence Nightingale's nursing theory, one of the most influential theories in the field of nursing. This theory focuses on the importance of a healthy environment for nursing care, which makes it particularly relevant for addressing hygiene practices in sixth and seventh grade children at CADE. Nightingale believed that a healthy environment was necessary to maintain adequate health care. Her theory of the five essential components of environmental health (pure air, pure water, effective sewage, cleanliness, and light) remains valid today. Currently, the control of traditional sources of various diseases has been achieved through improved hygiene and water treatment. Following the principles set forth by Nightingale, contemporary nurses perform daily practices such as frequent hand washing, maintain general cleanliness of the environment, and support bedridden patients in their personal hygiene, including cavity care.

Leininger's theory is the most appropriate for this research because it highlights the importance of hygiene in preventing disease, which is especially useful in children. Its practical and adaptable approach facilitates teaching hand washing, preventing infections in immature immune systems. In addition, it encourages healthy environments, early education, and learning by observation, which promotes lasting habits. This framework is key to implementing handwashing as an effective preventive measure in childhood. A previous study notes that: "Nursing care for diseases in the child population is important because its intervention helps improve the quality of life of children". This relationship is fundamental, as it emphasizes the need to design culturally sensitive educational strategies that promote proper hygiene habits and respect local traditions and practices.

Conceptual framework

Hygiene

Hygiene was defined as the set of behaviors and practices aimed at maintaining cleanliness, grooming, and health, with the purpose of promoting both individual and collective health. (1) These practices covered various areas, with personal hygiene being the most addressed, as it is directly related to the physical care of the body. Living in an environment where these practices were properly implemented involved understanding the external factors that affected hygiene, such as water, soil, and air.

Water contaminated with fecal matter carried microorganisms to food, posing a serious health risk. (2) Likewise, contact with soil represented another risk factor, as it harbored pathogens capable of affecting the immune system. On the other hand, air acted as a vehicle for the transmission of germs, especially through sneezing or coughing. In addition, hygiene in the handling of kitchen

utensils was crucial in the prevention of disease, since practices such as using the same knife for raw meat and unwashed vegetables caused outbreaks of salmonellosis.(2) Similarly, humans were potential carriers of pathogenic microorganisms, which were transmitted through contact with the skin or mucous membranes when adequate hygiene measures were not maintained.

Diseases related to poor hygiene

The lack of proper hygiene practices, such as hand washing, was a key factor in the spread of infectious diseases. According to the Pan American Health Organization(3), the simple act of handwashing prevented millions of deaths each year by reducing the transmission of diseases such as gastroenteritis, hepatitis A, parasitic and respiratory infections. However, lack of access to basic handwashing facilities remained a challenge in many regions of the world, especially in rural and low-income areas.

This situation exposed people to pathogens such as *Escherichia coli*, *Salmonella*, and Norovirus, significantly increasing the risk of infection. For this reason, health authorities emphasized the need to implement public policies that would guarantee universal access to hygiene services, highlighting that effective prevention began with basic practices that were accessible to the entire population. Education and awareness-raising about the importance of hygiene were also key to promoting behavioral change in vulnerable communities, which reduced the incidence of these diseases.

Measures for the implementation of good hygiene practices

Good hygiene practices (GHP) are essential to ensure food safety and prevent foodborne illnesses. These practices range from staff training to cleaning and disinfecting equipment, and are relevant in both industrial and domestic settings. In the food industry, their implementation is necessary to comply with international standards, such as the Codex Alimentarius and the HACCP system, which protect consumers and ensure product quality. In households, adopting these practices can make a significant difference in preventing infections, especially in children under five, who are more vulnerable to diseases caused by cross-contamination and food spoilage. Hoffman(4) warns that failure to comply with these standards can have serious consequences, including the proliferation of microorganisms, economic losses due to spoiled products, and, in extreme cases, the loss of consumer confidence in food companies.

In addition, studies such as that conducted by Bersano et al.(5) on patients admitted to the Juan P. Garrahan Pediatric Hospital highlight the importance of handwashing as a basic practice in people's lives, but underscore the gap between knowledge and adherence to this practice. Although 87 % of the patients surveyed recognized the importance of handwashing, only a small percentage practiced it before meals. This highlights the need to reinforce education and supervision around this hygienic practice, especially in hospital and educational settings, to reduce the risk of disease transmission, especially in hospitalized children.

Risk factors in children aged 9 to 12 associated with poor hygiene practices

Children in the 9-12 age range face risks associated with poor hygiene practices, which can have significant consequences for their physical and emotional development. During this stage, children tend to be more independent in their daily activities, such as attending school, playing outdoors, and participating in group activities. However, this independence is not always accompanied by a solid understanding of the importance of hygiene, which makes them susceptible to infections such as gastrointestinal and dermatological infections.(3)

Parasitic infections are also common at this age, especially in contexts where sanitary conditions are poor. This may be due to exposure to contaminated soil, contact with dirty surfaces, and consumption of improperly handled food, which significantly increase the risk of acquiring intestinal parasites such as *Ascaris lumbricoides* and *Trichuris trichiura*.(6)

In addition, respiratory diseases, such as influenza and bacterial infections, spread easily in school settings due to close contact between classmates and the sharing of materials. Limited access to basic infrastructure, such as clean bathrooms and handwashing stations in schools, exacerbates these risks. The World Health Organization(7) notes that more than 43 % of schools in low- and middle-income countries lack adequate facilities, making it difficult to implement hygienic habits in children. Early intervention to promote sustainable hygiene habits in this age group is essential not only to prevent immediate illness, but also to establish a solid foundation of healthy behaviors that will accompany them throughout their lives.

Nursing and its influence on the dissemination of hygiene to children

Children need guidance from health professionals, as they are at a crucial stage in the development of healthy habits that will significantly influence their future quality of life. However, this population faces challenges stemming from limitations in the education system and the resources available to their caregivers, which makes it difficult for them to acquire adequate knowledge about hygiene and health. The deterioration of primary health care and the overload of educators, who often lack the necessary resources to address health issues, reinforce the need for intervention by nursing professionals. Nurses, as key actors in health promotion, are trained to provide effective guidance, address knowledge gaps, and strengthen hygiene practices among children.(8)

In this context, nursing intervention based on Dorothea Orem's Self-Care Theory is presented as a comprehensive and effective model. This approach proposes a three-stage process that responds to the specific needs of children in terms of promoting hygiene and self-care. The first stage focuses on assessing therapeutic self-care demands, identifying areas where children need additional support to develop healthy habits. The second stage involves designing nursing systems that enable the achievement of established health goals, considering individual and environmental limitations. Finally, in the third stage, the designed actions are implemented and evaluated, ensuring that children learn and adopt effective self-care practices in their daily lives.(9)

Additionally, the application of Nola Pender's educational and motivational principles reinforces this process, promoting an environment where children are active participants in learning hygiene activities such as hand washing, tooth brushing, and paying attention to their personal cleanliness. This approach not only fosters practical skills, but also empowers children to take a leading role in their personal care, laying the foundation for sustainable habits that will contribute to preventing disease and improving their overall well-being.(10)

Nola Pender's theory of health promotion focuses on the concept of motivation and how individuals make decisions to adopt behaviors that improve their well-being. In the context of hygiene, this theory highlights the importance of self-efficacy and previous experiences in forming healthy habits. According to Pender, personal factors, such as beliefs about efficacy and perceived benefits, influence the choice of healthy behaviors, such as handwashing and personal care.

The importance of hygiene in school-age children aged 9 to 12

Hygiene in children is a key aspect of their health and well-being, as it is here that they consolidate their autonomy and begin to develop habits that will accompany them throughout their lives. According to the World Health Organization,(7)children in this age group are exposed to a variety of factors that can compromise their health, such as living together in school environments, participating in sports activities, and frequent contact with other children. These interactions increase the risk of disease transmission, making it essential to reinforce personal and community hygiene practices.(11)

Among the priority habits is handwashing, which is crucial for preventing infections such as gastroenteritis and respiratory diseases. Although children already have a greater understanding of their environment, they do not always internalize the need to perform these practices consistently. They often forget to wash their hands after using the bathroom or before eating, which increases the risk of diseases transmitted through contact with contaminated surfaces. In this regard, adults play a vital role in supervising and continuously educating children to reinforce these behaviors. In addition, personal hygiene, which includes regular bathing, nail care, and proper cleaning of clothing, is essential for preventing skin problems such as fungal or bacterial infections. In the school environment, a lack of attention to these aspects can also impact a child's self-esteem, as problems related to personal hygiene are often the subject of comments or teasing among peers. It is essential that children understand that hygiene not only contributes to their health, but also to their social and emotional well-being.(12)

Finally, introducing topics related to genital hygiene at this age is important, as children begin to become more aware of changes in their bodies. Explaining to them in an age-appropriate manner the care they should take in this area will help them prevent infections and feel comfortable with their self-care. Hygiene education, both at home and at school, should be adapted to the needs and characteristics of this stage of development, using clear language and teaching strategies that reinforce learning. Encouraging hygiene practices in children aged 9 to 12 is essential not only for their immediate health, but also for establishing long-term healthy behaviors that will enable them to lead full and active lives.(7)

Handwashing

Handwashing with soap and water is one of the most effective and low-cost public health strategies. This simple habit contributes significantly to the prevention of serious diseases, being an economical and accessible measure for the population. The goal of handwashing is to remove the bacterial load on contaminated hands. It should be done with soap and water when hands are visibly dirty or in contact with bodily fluids.

The process should last between 40 and 60 seconds, covering all surfaces of the hands with vigorous rubbing. Studies show that washing hands with soap and water reduces the bacterial count on the skin to 1,8 and 2,8 log; this is equivalent to a 90 to 95 % elimination of germs found on contaminated hands.

CONCLUSIONS

Hygiene in childhood is not only an immediate care practice but also a public health strategy with far-reaching implications. Findings show that the absence of adequate hygiene behaviors—particularly handwashing—is linked to the spread of infectious diseases that significantly affect school-age children. Given this situation, nursing plays a fundamental role in disseminating preventive practices, as its role transcends clinical care to become an educational and social agent that guides children toward the development of sustainable habits. The integration of the theoretical contributions of Nightingale, Leininger, and Pender allows us to understand hygiene from a comprehensive approach that combines the importance of the environment, cultural sensitivity, and individual motivation for self-care.

Likewise, the review of risk factors associated with poor hygiene in children aged 9 to 12 reinforces the need for educational and health policies that guarantee adequate conditions in school environments, as well as the ongoing training of teachers and families in prevention issues. Hygiene should not be understood solely as a routine habit, but as a practice that reflects the interaction between health, education, and social well-being. In this sense, promoting self-care in childhood not only prevents highly prevalent diseases, but also strengthens self-esteem, social integration, and the formation of citizens who are more aware of their responsibility in building healthy environments. The current challenge is to articulate scientific knowledge, educational strategies, and community action to transform hygiene into a pillar of equity and sustainability in health from the earliest stages of life.

REFERENCES

1. UAEH Dirección de Servicio Médico Universitario. Higiene personal. Universidad Autónoma del Estado de Hidalgo; s.f. Disponible en: https://www.uaeh.edu.mx/adminyserv/dir_generales/serv_estudiantiles/direccion_servuniversitario/carteles_promocion_salud/higiene_personal.pdf
2. Lobártolo G. Conocimientos sobre el síndrome urémico hemolítico y las correctas prácticas de higiene y manipulación de los alimentos para su prevención, en madres, padres o cuidadores de niños menores a 5 años [Tesis doctoral]. Universidad de Concepción del Uruguay-CRR; 2022. Disponible en: <http://repositorio.ucu.edu.ar/xmlui/handle/522/592>
3. Organización Panamericana de la Salud (OPS). La mortalidad infantil alcanzó un mínimo mundial histórico en 2022, según un informe de las Naciones Unidas. OPS; 2024 mar 13. Disponible en: <https://www.paho.org/es/noticias/13-3-2024-mortalidad-infantil-alcanzo-minimo-mundial-historico-2022-segun-informe-naciones>
4. Hoffman. Buenas prácticas de higiene en la industria de alimentos y bebidas. Hoffman; 2024 mayo 7. Disponible en: <https://hoffman-latam.com/blog/buenas-practicas-de-higiene-en-la-industria-alimentos-bebidas/>
5. Bersano J, Mestre G, Blasi S. Adherencia al lavado de manos antes de comer en niños internados. *Rev Pediatr Hosp Garrahan*. 2017;30(2):45-53. Disponible en: <https://www.medicinainfantil.org.ar/index.php/ediciones-antteriores/93-94-volumen-i/numero-4/404-adherencia-al-lavado-de-manos-antes-de-comer-en-ninos-internados>
6. Ávalos Tovar MB, Martel Mauricio JD. Hábitos de higiene de la madre y su relación con la parasitosis intestinal en niños menores de 5 años en el centro de salud Madre Teresa de Calcuta El Agustino 2021 [Tesis de Licenciatura]. 2021. Disponible en: <https://hdl.handle.net/20.500.12692/70760>
7. Organización Mundial de la Salud (OMS). Dos de cada 5 escuelas del mundo carecían de instalaciones básicas para el lavado de manos antes de la pandemia de COVID-19, según UNICEF y la OMS. OMS; 2020 ago 13. Disponible en: <https://www.who.int/es/news/item/13-08-2020-2-in-5-schools-around-the-world-lacked-basic-handwashing-facilities-prior-to-covid-19-pandemic-unicef-who>
8. Muñoz Bazán LA, Pérez Rodríguez GE. Intervenciones de enfermería para la adquisición de hábitos de higiene en los escolares Escuela No. 12 Evaristo Vera Espinoza, comuna El Morrillo, Santa Elena 2012–2013 [Tesis de Licenciatura]. Universidad Estatal Península de Santa Elena; 2013. Disponible en: <http://repositorio.upse.edu.ec/handle/46000/999>
9. Naranjo Hernández Y, Concepción Pacheco JA, Rodríguez Larreynaga M. La teoría déficit de autocuidado: Dorothea Elizabeth Orem. *Gac Med Espirituana*. 2017;19(3):89-100. Disponible en: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1608-89212017000300009&lng=es&tlng=es
10. Hidalgo E. Abordaje de enfermería basado en el modelo de Nola Pender sobre hábitos del sueño. *Ene*. 2022;16(2):1322. Disponible en: http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1988-348X2022000200010&lng=es&tlng=es
11. Organización de las Naciones Unidas (ONU). La mortalidad infantil alcanza un mínimo histórico de 4,9 millones en 2022. *Noticias ONU*; 2024 mar 13. Disponible en: <https://news.un.org/es/story/2024/03/1528322>
12. Valle A, Manrique L, Revilla D. La investigación descriptiva con enfoque cualitativo en educación. Pontificia Universidad Católica del Perú; 2022. Disponible en: <https://repositorio.pucp.edu.pe/index/handle/123456789/184559>

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