

**CONHECIMENTOS E ATITUDES DOS ESTUDANTES DE ENFERMAGEM PERANTE A HIGIENE ORAL À PESSOA DEPENDENTE**

**KNOWLEDGE AND ATTITUDES OF UNDERGRADUATE NURSING STUDENTS REGARDING DEPENDENT PERSONS' ORAL HEALTH**

**CONOCIMIENTOS Y ACTITUDES DE LOS ESTUDIANTES DE ENFERMERÍA EN RELACIÓN CON LA HIGIENE ORAL DE LA PERSONA DEPENDIENTE**

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## RESUMO

**Introdução:** Os enfermeiros desempenham um papel fundamental na manutenção e promoção da saúde oral. A evidência sugere que os enfermeiros não priorizam os cuidados orais, que detêm conhecimento insuficiente e que muitos não tiveram formação neste domínio durante a formação pré-graduada.

**Objetivo:** Avaliar os conhecimentos e atitudes dos estudantes de enfermagem perante a higiene oral à pessoa em situação de dependência.

**Métodos:** Estudo observacional e descritivo, com recolha de dados realizada através de um questionário de auto-preenchimento online, aplicado a 51 estudantes do quarto ano de licenciatura em enfermagem. Os dados relativos ao conhecimento e atitudes apresentados em frequências, médias e desvio padrão, foram tratados com recurso ao SPSS, versão 21.

**Resultados:** A média de conhecimento e atitudes dos participantes foram, respetivamente, de 11,37 num máximo de 22 e 35,65 num máximo de 60.

**Conclusão:** Os participantes valorizam a saúde oral no cuidado à pessoa dependente hospitalizada, no entanto, os seus conhecimentos e atitudes poderão ser melhorados, emergindo a necessidade de aprofundar o conhecimento neste domínio.

**Palavras-chave:** estudantes de enfermagem; enfermagem; higiene oral; conhecimentos; atitudes

## ABSTRACT

**Introduction:** Nurses play a crucial role in maintaining and promoting oral health. Evidence suggests that nurses do not prioritize oral care, have insufficient knowledge, and have had no training in this area during their undergraduate training.

**Objective:** To evaluate nursing students' knowledge and attitudes toward oral hygiene in dependent patients.

**Methods:** Observational and descriptive study, with data collection using an online self-completion questionnaire applied to 51 fourth-year undergraduate nursing students. Data regarding knowledge, attitudes, and practices, presented as frequencies, means, and standard deviation, were treated using SPSS, version 21.

**Results:** Mean knowledge and attitudes of the participants were respectively 11.37 out of a maximum of 22 and 35.65 out of a maximum of 60.

**Conclusion:** Participants value oral health in caring for hospitalized dependent patients; however, their knowledge and attitudes could be improved; thus, the need for research in this area emerges.

**Keywords:** nursing students; nursing; oral health; knowledge; attitudes

## RESUMEN

**Introducción:** Las enfermeras desempeñan un papel fundamental en el mantenimiento y la promoción de la salud bucodental. Los datos indican que las enfermeras no dan prioridad a los cuidados bucodentales, que sus conocimientos son insuficientes y que muchas de ellas no han recibido formación en este ámbito durante su formación de grado.

**Objetivo:** Evaluar los conocimientos y las actitudes de los estudiantes de enfermería sobre la higiene bucal en personas dependientes.

**Métodos:** Estudio observacional y descriptivo, con recogida de datos realizada a través de un cuestionario de autopreguntas online, aplicado a 51 estudiantes del cuarto año de la licenciatura en enfermería. Los datos relativos a los conocimientos, las actitudes y las prácticas, presentados como frecuencias, medias y desviación estándar, se trataron con el SPSS, versión 21.

**Resultados:** La media de los conocimientos y las actitudes de los participantes fue respectivamente de 11,37 sobre un máximo de 22 y de 35,65 sobre un máximo de 60.

**Conclusión:** Los participantes valoran la salud oral en el cuidado de la persona dependiente hospitalizada, mientras que sus conocimientos y actitudes pueden ser mejorados, de ahí que surja la necesidad de investigar en este ámbito.

**Palabras Clave:** estudiantes de enfermería; enfermería; higiene bucal; conocimientos; actitudes

## INTRODUCTION

The World Health Organization defines oral health as a state free of any pathology or disorder of the face and oral cavity, including tooth loss that limits a person's ability to bite, chew, smile, and speak (World Health Organization, 2022). Good oral health allows for effective communication and good nutrition, enabling a person to enjoy a variety of foods; it is essential for confidence and self-esteem and is directly related to the quality of life (Ramos & Soares, 2021). Therefore, one is not healthy without good oral health (Mendes, 2019).

Given that the oral cavity represents access to the body's interior, the oral microbiome's composition affects an individual's overall health (Belstrøm, 2020). Maintaining good oral health in hospitalized patients is essential for health outcomes and quality of life. As primary oral health care providers in hospital inpatient settings, nurses need appropriate knowledge, attitudes, and practices in this area to provide the most appropriate care (Philip et al., 2019). Evidence suggests that it is challenging to maintain oral health in a hospitalized patient, especially in a more dependent situation (Cianetti et al., 2020).

The relational continuum between oral and systemic health means that the onset of changes leads to consequences for the person's quality of life (Azami-Aghdash et al., 2021). There is consistent evidence that pneumonia is associated with the aspiration of microorganisms in the oral cavity (Perry et al., 2020). Evidence also shows that oral health is significantly related to the length of hospital stay, with increased dental plaque accumulation and gingival and mucosal inflammation, according to the length of hospital stay (Sousa et al., 2014).

Cianetti et al. (2020) mention that nurses are the professional group that more frequently cares for patients with oral health care needs than other professional groups in hospital settings. Therefore, they must have adequate knowledge based on the best available evidence to ensure quality oral hygiene care or the referral of patients with issues interfering with oral health to the professionals best qualified to meet the patient's needs. Nurses play a vital role in the maintenance and promotion of oral health. However, evidence suggests that oral care is not a priority for nurses, and they hold inadequate knowledge and awareness of oral care (Lyons et al., 2018; Mendes, 2019; Andrade-Leite et al., 2022). Yavagal et al. (2020) recognize the importance of oral health as fundamental care and the great need to improve the standard of nursing care provided to the elderly. These authors highlight the need to strengthen the content taught on oral hygiene in undergraduate nursing education and encourage faculty to use validated oral health teaching and learning resources, promoting interdisciplinary involvement. This is the only way to increase awareness regardless of practice goals. Nurses and other health professionals should be able to provide consistent standards of oral health care.

In a recent study conducted in Portugal, more than half of the participants (nurses) reported having had no training on oral hygiene care during their undergraduate training (Andrade-Leite et al., 2022). In this context, and considering the relevance of the knowledge acquired during undergraduate nursing education on oral hygiene care, the following research question was formulated: What are the knowledge and attitudes of nursing students towards oral hygiene care in dependent patients? Thus, this study aimed to evaluate nursing students' knowledge and attitudes toward oral hygiene in dependent patients.

## 1. METHODS

To meet the objective of this study, we conducted a descriptive observational study using a self-completion questionnaire as a data collection tool. Nursing undergraduate students from three higher education institutions were invited to participate in this study in a non-probabilistic convenience sampling technique. Inclusion criteria were established as being a fourth-year undergraduate nursing student. The questionnaire used for data collection was the "Nursing students' knowledge and attitudes towards oral hygiene in dependent patients", adapted from Philip et al. (2019), previously used in Portugal (Andrade-Leite et al., 2022) and authorized by the authors. The participating institutions made this questionnaire available to the students through the Teams® platform.

The questionnaire is divided into two parts. The first part comprises questions for the sociodemographic characterization of the participants, with data regarding age and gender. The second part contains two groups of questions on the domain of knowledge and attitudes of nursing students regarding oral hygiene. The first group comprises closed-ended "yes/no/does not know" answers and open-ended answers about the participants' knowledge of oral hygiene. Each correct answer scores one point, and in the open-ended questions, each correctly identified item scores one point (maximum of three). The maximum score in the knowledge domain is 22 points, and higher scores reflect better knowledge. To allow comparison across items, the raw scores on knowledge were transformed into adjusted scores by dividing each item's score by the maximum possible score for that item. The second group has a set of 12 statements about their attitudes to be rated on a 5-point Likert-type scale, where participants express their degree of agreement with each statement (from strongly agree to disagree strongly). In this domain, the higher the score, the better attitude towards oral hygiene is presumed, and the maximum possible score is 60 points.

The questionnaire was applied between July and October 2021, having obtained a favorable opinion from the Ethics Committee of the Northern School of Health of the Portuguese Red Cross, with reference number 016\_2021. The participants were only allowed to access the questionnaire after express consent was given on the first page of the form, which included the study objectives and safeguarded the issues of anonymity and confidentiality. Data were processed using the Statistical Package for the Social Sciences (SPSS), version 21.

## 2. RESULTS

Fifty-one 4th year undergraduate nursing students participated in this study, with n=42 (82.35%) females and n=9 (17,65%) males. Participant's mean age was of 24.2±5.5 years. The mean score in the knowledge domain was 11.37±4.66, with a minimum of 3 and a maximum of 22. Most participants recognize the importance of oral hygiene in inpatients (n= 50; 98.00%), and this item obtained the highest score (adjusted mean of 0.98). On the other hand, the item that obtained the lowest score was the identification of systemic diseases resulting from the lack of oral hygiene care, with an adjusted mean score of 0.29 (Table 1). It is noteworthy that n=14 (27.45%) of the participants reported having had no training on oral hygiene during the course.

**Table 1** - Results per item in the domain of knowledge.

Knowledge item	Absolute mean	Adjusted mean	Standard Deviation
Did you have oral hygiene training during your course?	0,73	0,73	0,45
Do you consider oral hygiene fundamental for inpatients?	0,98	0,98	0,14
Does lack of oral hygiene care lead to systemic diseases?	0,75	0,75	0,44
If yes, which ones?	0,88	0,29	1,05
Do medications interfere with oral health?	0,73	0,73	0,45
If yes, please name some of those medications.	1,20	0,40	1,36
What are the most common oral infections in inpatients?	1,43	0,48	1,14
What precautions do you usually take to prevent healthcare-associated infections while performing oral hygiene on inpatients?	1,49	0,50	0,95
What areas of the oral cavity need a periodic evaluation?	1,78	0,59	0,99
What care should be taken with dental prostheses?	1,41	0,47	0,92

Regarding attitudes, the mean score obtained was 35.65±5.22, with a minimum score of 23 and a maximum score of 44. The item with the highest score was related to the nurses' responsibility for providing oral hygiene care to inpatients, with a mean of 4.43±0.67. The item with the lowest score was "*Cleaning the oral cavity is a very unpleasant task*", with a mean of 2.98±1.35. Calculating the internal consistency of the attitudes domain subscale resulted in a Cronbach's alpha of  $\alpha=0.7822$ .

**Table 2** - Results per item in the domain of attitudes.

Attitudes item	Mean Score	Standard Deviation
Nurses are responsible for providing oral hygiene care to inpatients in a situation of dependence	4,43	0,67
Nurses are responsible for supervising the oral hygiene care of inpatients	4,37	0,77
Oral hygiene care is more critical for inpatients in a situation of dependence	4,16	0,83
Cleaning the oral cavity is a very unpleasant task	2,98	1,35
Oral hygiene care is of equal importance to other nursing care	4,08	0,89
Cleaning the oral cavity is difficult	3,14	0,92
Oral hygiene has no impact on the quality of life of inpatients in a situation of dependency	4,24	1,09
The existence of oral disease poses no risk to the patient	4,31	0,91
Oral disease and the respective referral to a specialist require attention from the multidisciplinary team	3,94	1,05

## 3. DISCUSSION

Participants' knowledge reached an average of 11.37 for a possible maximum score of 22 and concerning attitudes, an average of 35.65 for a maximum score of 60 was achieved. The results show that students recognize the importance of oral hygiene, corroborating the existing evidence (Wong et al., 2021; Yavagal et al., 2020). However, the mean score obtained in terms of knowledge was far from the maximum possible score. These results align with those obtained by Mendes (2019) and the findings of Andrade-Leite et al. (2022) in a study conducted with nurses. In this study, the participants, whose mean time of professional experience was 11.35 years, obtained a mean score of 13.98 in the knowledge domain. These results suggest gaps at the level of undergraduate training of nursing students and continuing education of nurses, meeting the available evidence ((Al Rababah et al., 2018; Veerasamy et al., 2022).

The mean level of the participants' knowledge was higher than the results obtained in another study using the same data collection instrument, also conducted with nurses, in which the mean score obtained was 6.74 (Philip et al., 2019), suggesting asymmetries at the level of undergraduate training in the different countries. The item in the knowledge domain in which participants scored lowest was the identification of systemic diseases caused by poor oral hygiene, suggesting the existence of a gap between evidence

and participants' knowledge. Indeed, the relationship between poor oral health and cardiovascular disease is well-identified in the literature (Gianos et al., 2021) and respiratory diseases (Manger et al., 2017). Evidence linking poor oral health with other systemic diseases, their worsening, and interference with treatments is gaining consistency (Meurman & Bascones-Martinez, 2021). Regarding their attitudes, the items with the highest and lowest scores corroborate the findings of studies conducted on nursing professionals in Portugal (Andrade-Leite et al., 2022). In line with the results found here, also in the study by Andrade-Leite et al. (2022), professionals considered that nurses were responsible for providing oral hygiene care to inpatients and had a less favorable attitude towards cleaning the oral cavity. From a global perspective, students have a less favorable attitude toward oral hygiene care than nursing professionals (Andrade-Leite et al., 2022; Philip et al., 2019). The internal consistency of the subscale of the attitudes domain was higher than that obtained in the original version (Philip et al., 2019), which was 0.751, and higher than that obtained in the Portuguese version applied to nurses (0.65) (Andrade-Leite et al., 2022).

## CONCLUSION

This study aimed to assess nursing students' knowledge and attitudes toward oral hygiene in dependent persons. The results show that participants value oral health in caring for hospitalized dependent people; however, their knowledge and attitudes could be improved; thus, the need for research in this area emerges. One of this study's main limitations is the sample size, which does not allow the generalization of results. For this reason, and to strengthen these results, research on nursing students' knowledge and attitudes toward oral hygiene should be expanded. The adequacy of oral health curricula in undergraduate nursing courses and continuous and post-graduate training will positively contribute to increasing knowledge, reflected in professionals' attitudes and, consequently, in their clinical practice. This will necessarily improve the quality of care, impacting patients' quality of life.

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