

## ORAL HEALTH: SELF-SATISFACTION, IMPACT ON DAILY ACTIVITIES AND KNOWLEDGE OF STUDENTS BEFORE AND AFTER EDUCATIONAL INTERVENTION

SAÚDE BUCAL: AUTOSSATISFAÇÃO, IMPACTO NAS ATIVIDADES DIÁRIAS E CONHECIMENTO DE ESTUDANTES PRÉ E PÓS-INTERVENÇÃO EDUCATIVA

SALUD BUCAL: AUTOSATISFACCIÓN, IMPACTO EN LAS ACTIVIDADES DIARIAS Y CONOCIMIENTO DE ESTUDIANTES ANTES Y DESPUÉS DE LA INTERVENCIÓN EDUCATIVA

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### ABSTRACT

**Objective:** to evaluate the effect of an educational intervention, based on the use of video, on the degree of self-satisfaction with oral health, on the impact of the oral condition on the performance of daily activities and on oral health knowledge in nursing students. **Method:** quasi-experimental study using a video as an educational intervention. The Oral Health Autossatisfaction Scale, the Oral Impacts on Daily Performance and an instrument for cognitive and procedural evaluation on the subject were used as measures. Study approved by the Research Ethics Committee of the Institution (CAAE 12850613.8.0000.5393). **Results:** 60 students participated. When comparing the two moments of the study, the educational intervention promoted increased self - satisfaction with oral health, perception of impacts of oral conditions on daily activities, cognitive knowledge about oral health and the execution of the hygiene technique. **Conclusion:** the video presented an educational effect on the self-satisfaction, the perception of the impact of the oral condition, on the cognitive and procedural knowledge regarding the oral health of nursing students.

**Keywords:** Education; Nursing; Oral Health; Audiovisual Aids.

### RESUMO

**Objetivo:** avaliar o efeito de uma intervenção educativa pautada no uso do vídeo, no grau de autossatisfação com saúde bucal, no impacto da condição bucal sobre o desempenho das atividades diárias e no conhecimento sobre saúde bucal, em estudantes de Enfermagem. **Método:** estudo quase-experimental utilizando um vídeo como intervenção educativa. Empregou-se como medidas a Escala de Autossatisfação com a Saúde Bucal, o Oral Impacts on Daily Performanc e um instrumento para avaliação cognitiva e procedimental sobre o tema. Estudo aprovado pelo Comitê de Ética em Pesquisa da Instituição (CAAE 12850613.8.0000.5393). **Resultados:** participaram 60 estudantes. Ao se comparar os dois momentos do estudo, a intervenção educativa promoveu aumento da autossatisfação com a saúde bucal, na percepção de impactos das condições bucais nas atividades diárias, no conhecimento cognitivo sobre saúde bucal e na execução da técnica de higienização. **Conclusão:** o vídeo apresentou efeito educativo sobre a autossatisfação, a percepção do impacto da condição bucal, sobre o conhecimento cognitivo e procedimental em relação à saúde bucal de estudantes de Enfermagem.

**Palavras-chave:** Educação; Enfermagem; Saúde Bucal; Recursos Audiovisuais.

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## RESUMEN

**Objetivo:** evaluar el efecto de una intervención educativa en base al empleo de un video, en el grado de auto satisfacción con la salud bucal, en el impacto de la condición bucal sobre el desempeño de las actividades diarias y en el conocimiento sobre la salud bucal, en estudiantes de enfermería. **Método:** estudio cuasi-experimental utilizando un video como intervención educativa. Las medidas empleadas fueron la Escala de Autosatisfacción con la Salud Bucal, el Oral Impacts on Daily Performance y un instrumento para la evaluación cognitiva y procedimental sobre el tema. Estudio aprobado por el Comité de Ética en Investigación de la Institución (CAAE 12850613.8.00.00.5393). **Resultados:** participaron 60 estudiantes. Al comparar los dos momentos del estudio se observó que la intervención educativa promovió aumento de la autosatisfacción con la salud bucal, en la percepción de impactos de las condiciones bucales en las actividades diarias, en el conocimiento cognitivo sobre la salud bucal y en la ejecución de la técnica de higienización. **Conclusión:** el video demostró tener efecto educativo sobre la auto sensibilidad, en la percepción de impactos de la condición bucal, sobre el conocimiento cognitivo y procedimental con relación a la salud bucal de estudiantes de enfermería. **Palabras clave:** Educación; Enfermería; Salud Bucal; Recursos Audiovisuales.

## INTRODUCTION

The oral health is one of the indicators analyzed in people's health. It has both clinical aspects such as dental caries, biofilm, periodontal disease, neoplastic disease of the oral cavity, loss of teeth, deformities and halitosis, among others, as well as socio-dental indicators such as social, psychological, economic and cultural impacts on daily activities.<sup>1</sup> Therefore, the close relationship between oral health and the individual's global health justifies the identification of these conditions and the oral health needs of the individual.<sup>2</sup>

Results of research carried out in Brazil reveal that there are still gaps in the young population regarding the adequate procedures for oral hygiene, characterized by the low frequency of this procedure during the day and the lack of using dental floss.<sup>3</sup> Dental caries, periodontal disease, halitosis and conditions that interfere with oral aesthetics are the main oral problems reported in the Brazilian young people, related to failures in oral hygiene care.<sup>3,4</sup>

The mouth and/or the teeth have importance beyond biological issues, which refers to oral health, but also in the role in social interactions in public, which characterizes the symbolic dimension of the teeth, besides being crucial factors for the image formation of the individuals.<sup>5</sup> A qualitative study carried out with women using the dental service of the Unified Health System evidenced that the lack of aesthetics of the teeth was a motivator for the search for the service since it considerably compromised the social relationships of these women.<sup>5</sup>

The literature records mentioned that oral problems such as caries, toothaches and gums pain may be associated with self-perception of oral health, chewing, speech and appearance of teeth and gums.<sup>6</sup> Thus, these variables are important to be investigated in the population, as they are indicators of impairment with oral health and are associated with the predisposition of people to seek health services.<sup>6</sup>

Health policies, such as an incentive to use fluoride in various forms, and teaching strategies on oral health care are fundamental to improve quality of life-related to oral health<sup>7</sup>,

to increase knowledge about oral problems, adherence to treatment of these problems and incorporation of prevention measures.<sup>8</sup>

In Brazil, educational actions in oral health are components of the Política Nacional de Saúde Bucal to promote health and prevent diseases. These actions should be considered by health professionals and include working with approaches on risk factors or protection from the development of healthy eating policies to reduce the consumption of sugars, a community approach to increase self-care with body hygiene and oral health, smoking cessation policy and self-care autonomy.<sup>9</sup>

Educational interventions in adolescents (15-19 years old) are recognized in the literature with high potential for health promotion, as this is a phase of life in which the acquired learning about attitudes and behaviors will persist in the future. The school is considered an oral health promoter environment in this age group.<sup>6</sup>

The development of health education can be supported by actions or information resources that potentiate collaborative practices and autonomous learning.<sup>10</sup>

In order to promote understanding of the importance of oral health the use of video is highlighted as a technological, didactic and audiovisual resource that allows the development of different themes as well as better visualization of thematic contents.<sup>11</sup>

The video as an educational resource is widely used in health in different contexts for teaching, which can include training of students on specific skills of the profession and teaching of patients on issues related to self-care. From the different pedagogical experiences promoted by this resource, the video provides knowledge, favors critical awareness and health promotion.<sup>7,10,11</sup>

This study aimed to evaluate the effect of an educational intervention based on the use of a video, the level of self-satisfaction with oral health, the impact of the oral condition on the performance of daily activities and the knowledge on oral health in nursing students.

## METHODS

It is a quasi-experimental, before-and-after study that examined the effect relationships of an educational intervention (educational video) on aspects of oral health, without the random designation of the participants.

Students of the undergraduate nursing course of a public institution in the state of São Paulo were the participants. There were 130 students invited and the sample consisted of 60 participants obtained for convenience. Students who were using braces were not included in the study.

During the data collection, the participants initially filled out an instrument to characterize demographic variables (gender and age); and then, they gave a grade on their self-satisfaction regarding the oral hygiene procedure, ranging from 0-10 points, in which high values corresponded to the highest self-satisfaction. Subsequently, they answered a questionnaire to evaluate the cognitive knowledge on the aspects of oral health.<sup>12</sup>

Oral Impacts on Daily Performance (OIDP), an instrument developed in North Carolina, United States, was used to analyze the impact of oral health problems on the daily life activities of the participants,<sup>8</sup> translated into Portuguese and validated in a sample of Brazilian adults.<sup>13</sup> It is composed of 11 items that correspond to performance of daily activities regarding physical, psychological and social aspects, being investigated the frequency (score from 0 to 5) and the severity (0 to 5) of the impact on each of the items. The multiplication of the scores of these variables allows the maximum total result of 275 points; higher values represent a worse impact of oral health problems in the performance of daily activities.<sup>13</sup>

Finally, the participants got material to perform oral hygiene and they were asked to perform it on their own. This evaluation was followed up by the interviewer and documented in a form containing a list of the correct steps to be performed during the oral hygiene technique.<sup>12</sup>

After collecting these variables, the participants attended the educational video and then they re-performed the oral hygiene technique and answered to the same instruments of data collection from the initial phase.

The educational video used in this study was composed of images of oral disease, a narration about the importance of oral health for general health, brushing of teeth for removal of bacterial plaque; microorganisms in the mouth; caries as the cause of infections; moment for oral hygiene; prevention of inflammation of the gums, bleeding and softening of teeth; materials needed for oral hygiene, movements and sequence of sanitized structures (areas) and the result of the procedure; use and amount of dentifrice to be used. It was built for healthy people and validated with Nursing students.<sup>14</sup>

The data were inserted in a spreadsheet of Excel, with double typing and later validation; then, it was inserted into the Statistical Package for Social Science (SPSS), version 23.0 for Windows, for statistical analysis.

Measures of central tendency and dispersion were used for the variables before and after the video. The variables studied (self-satisfaction with oral hygiene, knowledge about oral hygiene and impact of oral condition on the performance of daily activities) by the Shapiro-Wilk test did not show a normal distribution. Therefore, non-parametric statistics were adopted and the Wilcoxon Signal Post Test was used to analyze differences in results obtained before and after the intervention. Also, the Spearman correlation coefficient was used in the variables studied. The level of significance adopted in all statistical analyzes was 0.05.

The study was approved by the Ethics Committee of the Institution (CAAE nº 12850613.8.0000.5393).

## RESULTS

Of the 60 participants, there was a predominance of females (86.7%) and ages ranging from 17 to 29 years old (mean 21.3, SD = 2.00).

In the initial phase of the study, 54 (90%) of the participants attributed the score 10 to self-satisfaction with oral hygiene (mean 9.82; standard deviation 0.60) and, after attending the educational video, 59 (98.3 %) attributed the score of 10 (mean 9.98, SD = 0.12). The difference observed in self-satisfaction measures was significant (p=0.023).

Regarding the impact of the oral condition on the performance of daily activities, at the beginning of the study, 25 (41.7%) participants reported to have some difficulty in their activities or behaviors, due to problems in their mouth and teeth. However, after the educational intervention, this result increased to 35 (58.3%). The affected activities and their related causes or oral conditions are listed in Table 1.

Table 1 - Affected daily performances reported by the participants, before and after the educational intervention (n=60)

Affected performance	Before	After
<b>Physical</b>		
Eating	4 (6.7%)	5 (8.3%)
Talking	2 (3.3%)	4 (6.7%)
Cleaning	14 (23.3%)	34 (55.0%)
<b>Social</b>		
Activity	-	-
Going out	-	2 (3.3%)
Working	-	-
Resting	-	1 (1.7%)
<b>Psychological</b>		
Sleeping	5 (8.3%)	6 (10.0%)
Smiling	8 (13.3%)	11 (18.3%)
Emotional	5 (8.3%)	8 (13.3%)
Social interaction	-	3 (5.0%)

The OIDP scores ranged from zero to 55 in the initial phase of the study and from zero to 80 in the final phase, with averages of 5.6 (SD = 10.17) and 10.9 (SD = 15.58) before and after the video, respectively. This difference allows inferring that there was an increase in the perception of the individuals about the impact of oral conditions on daily activities ( $p=0.001$ ) after the intervention (Figure 1).

The physical performance was most affected by altered oral conditions (Table 1), with emphasis on tooth cleaning (55%). The social performance was the least affected and the activities affected were reported only after the intervention. In the psychological performance, the frequency of participants' reports of impaired activities increased after the intervention.

The oral conditions that affected the physical performance reported by the participants were: sensitive tooth, bleeding gums, braces (fixed braces of the lower arch of the insensitive teeth), position of teeth, toothache, caries, broken tooth, color of teeth, shape or size of teeth, swollen gums, retracted gums, tartar, ulcer or mouth sore, halitosis and cracking or creaking jaw. For the social performances, the mentioned conditions were: sensitive tooth, position of teeth, halitosis and cracking or creaking jaw. The psychological performances were affected by the following conditions: dental caries, broken

tooth, tooth color, tooth position, tooth shape or size, tartar, halitosis, cracking or creaking jaw, braces (fixed braces of the lower arch of the instep teeth), bleeding gums, swollen gums, loose teeth, and sensitive teeth.

When evaluating the cognitive knowledge (Figure 1) measured by 17 questions, the initial correct mean was 9.85 (SD = 1.92, minimum 6, maximum 13) and after the educational intervention, the mean was 13.88 SD = 1.15, minimum 11, maximum 17), evidencing difference between the two moments ( $p \sim 0.001$ ).

Items related to the structures to be brushed, to the moment of oral hygiene and time to plaque formation after feeding were those with the highest frequency of incorrect answers. The sequence of the steps to perform the brushing technique and the amount of toothpaste that should be used were the highest learning items.

When evaluating the performance of the oral hygiene technique, the mean score of 5.02 (31.4%) presented a difference after the video, 13.97 (87.3%) ( $p = 0.001$ ). There was an increase in the correct execution of all the steps of the technique, being important the brushing of the lower and upper arches and the inner part of the teeth. The most correctly performed steps were the toothpaste and the mouthwash after brushing the tongue (Figure 1).

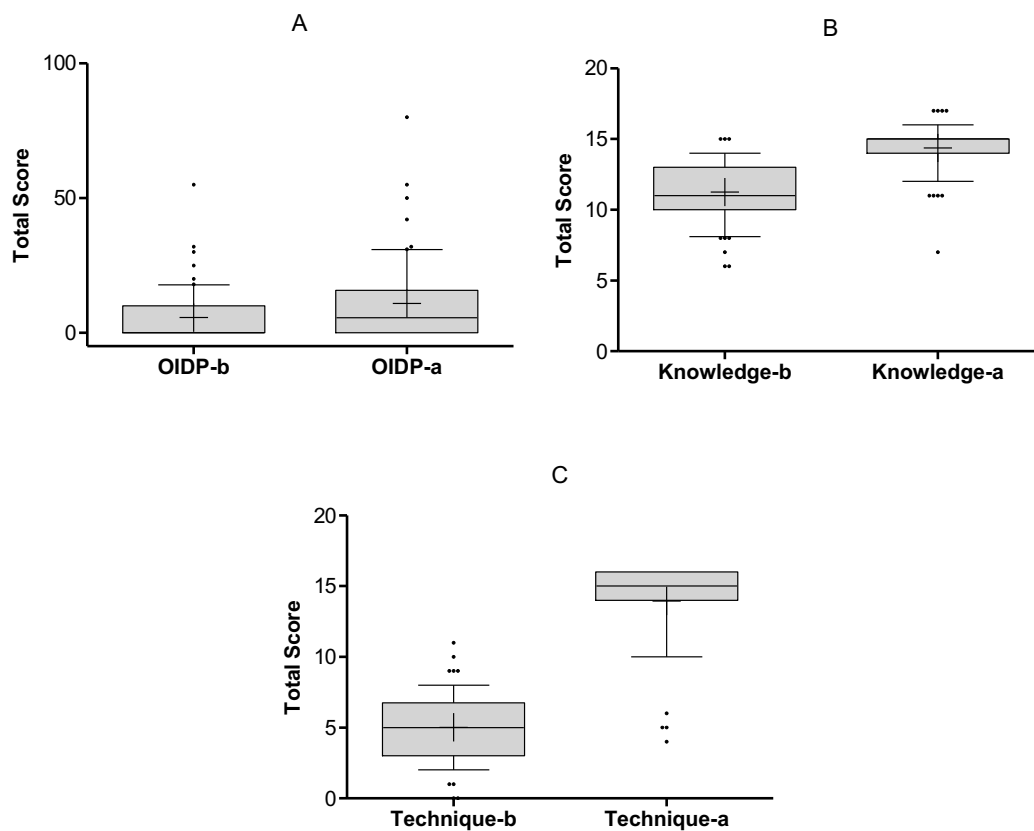


Figure 1 - Distribution of total oral health impact scores in daily activities (A), knowledge (B) and execution of oral hygiene technique (C).

Although the number of incorrect oral hygiene steps was reduced after the video, the use of mouthwash and mouthwash still remained with a high level of error or non-performance.

It was observed that gum and cheek brushing was not performed before the participants watched the video and that the palate, floor of the mouth and tongue were already part of the brushed structures. However, after the video, the five structures were brushed, and the palate and floor of the mouth presented a small reduction in brushing after the video.

The correlation analysis between the studied variables (self-satisfaction, knowledge about oral hygiene, procedural hygiene performance and perception of the impact of oral health on daily activities) showed a positive correlation between the level of self-satisfaction and knowledge about oral hygiene ( $r=0.255$ ,  $p=0.023$ ) in the initial phase of the study. It was not possible to identify correlations between the other variables.

## DISCUSSION

There was a predominance of females (86.7%), as corroborated in other studies in the country's Nursing courses.<sup>15</sup> As for the age group, the sample consisted of young adults, a crucial range for adopting healthy practices for general and oral health and development of autonomy with their health, which strengthens the results of interventions that promote changes in their habits.<sup>6,16</sup>

The data on self-satisfaction with oral hygiene are favorable compared to national data, since they show that 56% have some level of satisfaction with oral health in people between 15 and 19 years old.<sup>4</sup> Self-satisfaction with health is one variable that represents a subjective indicator of quality of life and an indicator for the demand for healthcare.<sup>16,17</sup>

In this study, an educational intervention on oral hygiene resulted in an increase in students' self-satisfaction with the development of this technique, either because they identified in the educational video that they used the correct technique, because they were satisfied with the learning obtained or because they recognized that they did not have problems with oral health mentioned in the video. Among young people, health indicators are high. In order to maintain or improve them, it is important that their perception about their health be investigated and valued.<sup>17</sup>

In this study, the impact of oral problems on the performance of daily activities, measured by the OIDP, corroborates the results of other research. The literature<sup>16</sup> reveals low scores in schoolchildren; data corroborated by research<sup>2</sup> with Indian university students and by the 2010 National Oral Health Survey, which also verified the occurrence of this characteristic in young people aged 15 to 19 years old.<sup>4</sup>

There was an increase in OIDP scores when comparing the two phases of the study ( $p<0.001$ ), as well as an increase in the frequency of reports regarding the impact on daily perfor-

mance, suggesting that their recognition of oral health status was possible after the use of the audiovisual resource.

The daily performances most affected by the oral condition in the participants were teeth cleaning, emotional impact, sleeping and smiling. These activities were also the most frequently involved in other studies involving participants with similar characteristics.<sup>2,4,16</sup>

During the development of the oral hygiene technique, in the initial phase of the study, the number of students who performed brush movements in a circular and perpendicular manner in the teeth was significant. Circular movement is associated with the "Phone technique" taught in nursery schools.<sup>18</sup> According to these data, it is possible to verify the students' lack of approximation with the "BASS technique", which is recommended for the performance of hygiene in adults and it was the technique taught in the video.<sup>19,20</sup> The use of the technique recommended for children has also been verified in other studies with young adults.<sup>20</sup>

The increased knowledge about the sequence of structures and amount of toothpaste required for oral hygiene could be confirmed in the change in the steps of performing the technique observed at the end of the study. Scholars claim that the population needs to be taught about the correct amount of toothpaste used for hygiene, which should look like a "pea bean" and placed in the center of the brush.<sup>20</sup>

In this study, the knowledge about oral hygiene acquired with the video was verified by cognitive and procedural performances. The results obtained by the differences before and after the intervention showed a gain in knowledge, even though no correlation was observed between self-satisfaction with oral hygiene and the knowledge acquired at the end of the study. The knowledge is a tool for the promotion of oral health, as it assists in better awareness of adoption of healthy lifestyle and performance of positive attitudes.<sup>21,22</sup>

The investigation of the effect of the educational video for the promotion of oral health has already been of interest to other research that also registered increased knowledge of the participants. In the study by Stina et al.<sup>23</sup> the video was used to teach Brazilian nursing students about oral hygiene of people undergoing chemotherapy; Shah et al.<sup>22</sup> used this strategy in teaching oral health in Indians and systematic review developed by Stein et al.<sup>24</sup> mentioned that video for educational purposes was used in the sample of articles analyzed.

Educational interventions in oral health should not have a single format, they must have different approaches to transfer and acquisition of knowledge, considering the level of education of the target audience and have the characteristic of promoting short-term results such as knowledge, but also in the long term, as behavior changes.<sup>24</sup> For this study, the information offered in the video was specific for young people, since it was validated specifically for this population.

The video was a learning facilitator as noted in the literature, which describes that individuals are able to better understand the information contained in this educational technology.<sup>25</sup> This can be identified in this study by the findings of the final phase, which showed greater mean correct answers ( $p \sim 0.000$ ).

The possible limitations of the study are the absence of a control group to investigate the effect of the video in the educational intervention in a more robust way by the statistical analyzes and also the evaluation of knowledge (cognitive and procedural) in the long term, to accompany the retention of knowledge and real change of habit of oral hygiene technique. It is suggested that these aspects be considered in future research.

## CONCLUSION

The data evidenced the effect of an educational video on oral health in Nursing students. After the educational intervention, there was an increase in self-satisfaction with oral health, in the perception of the impact of the oral condition on the performance of daily activities, in the knowledge about oral hygiene and in the execution of the oral hygiene technique by Nursing students.

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