

**How common are oral hygiene tools amongst geriatric patients**

By

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## Summary of the article

Murali Srinivasan, Joris Delavy, Martin Schimmel et al conducted a cross-sectional survey on the prevalence and awareness of various oral hygiene tools amongst hospitalized elders. The study was performed in several geriatric wards in Switzerland, and was published in the Journal of Gerodontology Volume 36, Issue 2 in January 2019 (<https://pubmed.ncbi.nlm.nih.gov/30623472/>).

The study involved 100 participants from a geriatric hospital setting. Poor oral hygiene is common amongst elders in nursing homes. Given the fact of cognitive status and poor oral hygiene, the researchers conducted this study to test if these elders are aware of or using various oral hygiene tools. Participants answered a questionnaire to identify the prevalence and use of oral hygiene tools. Researchers performed assessments to further evaluate. Results were recorded over a 2 month period. The study found that the plaque score of patients who possessed more oral hygiene tools were lower. The study also showed that patients with higher MMSE scores have lower plaque scores as well.

The authors concluded that the prevalence of a higher number of oral hygiene tools demonstrated better plaque control in hospitalized elders. The study also confirmed that the cognitive status of the hospitalized elders played a significant role on the prevalence of oral hygiene tools and on the effectiveness of oral hygiene performed.

## Article information

1. Title of the article: "Prevalence of oral hygiene tools amongst hospitalised elders: A cross-sectional survey".
2. Authors: Srinivasan M, Delavy J, Schimmel M, et al.
3. The article was published in the Journal of Gerodontology Volume 36, Issue 2. (<https://pubmed.ncbi.nlm.nih.gov/30623472/>).
4. Date published: 09 January 2019
5. <https://pubmed.ncbi.nlm.nih.gov/30623472/> DOI: <https://doi.org/10.1111/ger.12388>
6. The authors stated that they have no conflict of interest and received no external funding for the planning, execution, or termination of this study.

## **Study analysis**

This study is a cross-sectional survey. It was conducted in several geriatric wards in a university hospital setting in Geneva, Switzerland. The study was conducted between 01 August 2017 and 30 September 2017.

**Study purpose:** The authors conducted this study to investigate whether the hospitalised geriatric patients were aware of (due to cognitive status) or possessed various oral hygiene tools for proper oral hygiene care. Majority of studies have focused on oral hygiene programs or the effectiveness of certain tools in delivering oral hygiene. None of the research has looked into the actual prevalence of these tools among hospitalized elders, or whether elders are even aware that such tools exist. There has not been any studies on whether or not the cognitive status of the elderly has any effect on the use of oral hygiene tools. This study advances knowledge of this subject by providing the information that has not been previously studied pertaining to this topic. The aim of the study was to determine the utilization of different oral hygiene tools amongst hospitalized elderly patients and to link their cognitive status to the prevalence of tools and oral hygiene status.

**Experimental design:** The study included elderly hospitalized patients who received a brief clinical intraoral examination. One hundred of these hospitalized elders consented to participate in this study and were included. The patients were given a questionnaire with a “yes” or “no” response to identify which oral hygiene products they knew of or used. These products included: manual toothbrush, electric toothbrush, dental floss, Super Floss, interdental brush, interdental stick, tongue scraper, and mouthwash. For patients with dentures, they were asked about products such as: denture brush, ultrasound bath, denture cleanser, and a denture case/box. To conduct the study they did the following assessments: decayed missing filled teeth (DMFT) index, plaque index, community periodontal index for treatment needs (CPITN) index, denture plaque and calculus index, and Mini-Mental State Examination (MMSE) scores. Out of the 100 participants included, 55 participants had been rehabilitated with a removable dental prosthesis, MMSE scores were not retrievable for 13 participants, and plaque scoring was not possible for 18 participants. In three of the participants neither MMSE nor plaque scores were available. A sample size could not be calculated because there were no previous reports that studied the outcome described in this study. This study was conducted over a period of two months. Linear regression models were applied for statistical analyses. The level of statistical

significance was set to  $P < 0.05$ . All statistical analyses were performed using a statistical software package (StatView, version 5.0, SAS Institute, Cary, NC).

## Results

A graph in the article showed the list of various commonly used instruments in performing effective dental hygiene and the Number of hospitalized elders aware of these instruments along with the number of elders who actually possess them. Results are as follows:

All The Participants (100%) were aware of the existence of a manual toothbrush but only 93% of the participants had their toothbrush with them after being hospitalised. Although 86% of the participants were aware of an electric toothbrush, 17% used one. Out Of The 79% of the participants who were aware of regular dental floss, 27% of the participants used it in their daily oral hygiene protocol. None of the participants (0%) reported either knowing or using a specialised floss. About 44% and 55% of the participants confirmed awareness of an interdental brush and interdental stick, respectively. About 21% and 29% of the participants reported using an interdental brush and an interdental stick (toothpick), respectively. About 39% of the participants used mouthwashes as a part of their oral care although 75% of the participants were aware of it. A small percentage of the participants (9%) were aware that a tongue scraper existed And 4% reported using it.

Linear regression analysis was used to test if the number of oral hygiene tools used significantly influenced the participants a plaque scores. The regression revealed that the plaque scores were lower in participants who possessed more oral hygiene tools ( $R^2=0.091, F[1,80]=7.988, P=0.0059$ ). (Srinivasan, 2019)

Regression models revealed that patients with higher MMSE scores had lower plaque scores ( $R^2=0.166, F[1,70]=13.924, P=0.0004$ ; Figure 4).

Participants with a higher MMSE score tended to possess more oral hygiene tools ( $R^2=0.062, F[1,85]=5.591, P=0.0203$ ; Figure 5) (Srinivasan, 2019).

The results of this study were statistically significant.

## **Conclusion**

The authors concluded that poor oral hygiene seen in institutionalized elders can be due to lack of oral hygiene tools, mostly in cognitively impaired elders. They conclude that age appropriate oral hygiene tools should be prescribed to elders based on the patient's dentition and cognitive status. Their findings contribute to the knowledge of this subject by providing examples that poor oral hygiene can be linked to cognisance and prevalence of oral hygiene tools. It was noted that 3% of the participants had not brushed their teeth since being hospitalized. The authors list this as a factor of concern that should be further investigated. Limitations of this study were that it was limited only to these participants. The authors state that the results from this study may be extrapolated to geriatric patients from other industrialized countries where the same oral hygiene tools are available.

## **My impression**

I found this article to be very interesting. It relates to us as dental hygienists because it helps to better understand elder patients. If you see more plaque accumulation within an elder you can start to think, is it because they lack oral hygiene tools or is it due to cognisance. Personally, I have seen the effects that cognitive skills can have on an elderly patient's oral hygiene. In the last years of my grandfather's life, he developed dementia, which required him to be under 24/7 care. Within that care, a home health aide provided assistance with oral hygiene care. Also, reading this article made me curious to ask my older relatives if they are aware of certain oral hygiene tools. Majority of them also have not heard of products such as Super Floss or a tongue scraper. The article raised a good point that the low awareness of a tongue scraper is a concern. The article states that the natural self cleansing effect of the tissues is diminished in old age. Tongue coating with its associated microflora is considered a risk for halitosis and aspiration pneumonia. It is important in our interviewing process with elderly patients to find out which products they are using and if they are using it effectively. I found it interesting that better oral hygiene had a relation with the patients' cognisance and the amount of tools they possessed. These are important factors to keep in mind as future hygienists.

In regard to my concerns about the study, I would also like to find out the reason why some patients have not brushed their teeth since being hospitalized. Also, being that this study

was limited to only these participants, I would like more researchers to conduct this study in various different places worldwide.

### **Work Cited**

Srinivasan M, Delavy J, Schimmel M, et al. Prevalence of oral hygiene tools amongst hospitalised Elders: A Cross-sectional survey. *Gerodontology*. 2019;36:125–133. <https://doi.org/10.1111/ger.12388>