

Original Article

Knowledge and Attitudes of Dental Medicine Students Re- garding Anti-Aging Treatments

Nika Filipović^{1*}, Lucija Dabić², Mirna Šitum^{1,2} and Marija Buljan^{1,2}

¹Department of Dermatology and Venereology, University Hospital Centre Sestre Milosrdnice, Zagreb, Croatia

²School of Dental Medicine, University of Zagreb, Croatia

Abstract

Introduction: Recent progress in development of anti-aging facial treatments and their accessibility has led to an increase in both physician and nonphysician providers engaged in the practice of anti-aging medicine, including dental medicine doctors. The aim of this study was to investigate how much dental medicine students, as future medical professionals, are informed about some of the most performed anti-aging procedures as well as how much they are interested and motivated for work and education in this area.

Methods: A web-based questionnaire was conducted at the School of Dental Medicine of University of Zagreb and Rijeka among 177 students divided into two groups; undergraduates and senior students.

Results: There were significant differences between knowledge and opinions of undergraduates and senior students regarding anti-aging treatments. Senior students showed greater knowledge of properties and complications of some of the most common anti-aging procedures. Moreover, senior students were more interested in performing such procedures in the future and further education in this area.

Conclusion: There is a great interest of dental medicine students for performing anti-aging treatments in their future dental practice, but also a desire for better education in this area during their studies, as most of them believe that this area is part of the dental profession's future.

Keywords: Anti-aging treatments; Dental medicine; Rejuvenation; students

*Corresponding author: Nika Filipović, Department of Dermatology and Venereology, University Hospital Centre Sestre Milosrdnice, Zagreb, Croatia, Tel: +385 919105450; E-mail: nikafilipovic07@gmail.com

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Introduction

The face has always been the primary focus of rejuvenation procedures in aesthetic medicine, especially in dermatology and cosmetic surgery. Due to the progress in development of corrective procedures, a demand for softening and removing facial wrinkles as well as improving skin firmness and volume has increased [1]. The growing interest in these treatments has led to an increase of both physician and nonphysician providers engaged in the practice of anti-aging medicine, including dental medicine doctors. The aim of this study was to investigate how much dental students, who represent future medical professionals, are informed about some of the most performed anti-aging procedures as well as how much they are interested and motivated for work and education in this area. To the best of our knowledge, no similar research has been published so far.

Materials and Methods

A web-based survey was conducted among 177 dental medicine students at the School of Dental Medicine of University of Zagreb and University of Rijeka, Croatia. The study involved 30 (16,9%) respondents from the first year of study, 54 (30,5%) respondents from the second year, 44 (24,9%) respondents from the fifth year of study and 50 (28,2%) respondents from the sixth year. For the purposes of statistical analysis, the respondents were divided into two groups. The first group included students of the first and second year of study (undergraduates), and the second group included fifth- and sixth-year students (senior students).

The questionnaire consisted of three parts in which knowledge of anatomy and anti-aging treatments as well as students' opinions and interests on anti-aging treatments was examined.

The research was approved by the Ethics Committee of the School of Dental Medicine, University of Zagreb. All respondents voluntarily completed an anonymous questionnaire in the form of online survey compiled by the authors for the purposes of this research and gave their informed consent to participate.

The statistical analysis of the obtained data was performed in computer program Microsoft Excel using Chi-square test, spss 20.0 and the T-Test for the first two questions.

Results

In the first part of the questionnaire, knowledge of the head and neck anatomy and the structure of skin was assessed. Students rated their knowledge from 1 to 5 (1 representing lack of knowledge and 5 representing excellent knowledge). The average grade of knowledge pertaining to head and neck anatomy was 3,6 while the average grade on knowledge of the skin structure was 3,42.

The second part of the questionnaire examined students' familiarity with some of the most common anti-aging procedures as well as the sources from which they received information. When asked about previous education on rejuvenation and anti-aging treatments most of

the undergraduates (91,6%) and senior students (92,6%) stated that they didn't learn about such treatments during their classes, however, 48,2% of undergraduates and 56,4% of seniors felt they should have.

Most of the students were familiar with Botox (27,6%) and hyaluronic fillers (26,3%), and least of them with mezonites (1,7%). The biggest discrepancy in knowledge was noticed when asked about Platelet-Rich Plasma (PRP) where only 7,8% undergraduates heard about PRP as opposed to 17,5% of senior students. The largest number of students received information about anti-aging treatments on the Internet, followed by social media and advertisements, while only 6,9% students received information about such procedures in dental practices where they volunteered, of which most of them (82,7%) were senior students.

The third group of questions referred to their theoretical knowledge about properties and complications of some of the most common anti-aging treatments. The students were able to choose the correct or incorrect answer. The highest percentage of correct answers was observed in the question pertaining to complications of hyaluronic fillers application where 68,4% students knew that hyaluronidase is used for degradation of hyaluronic acid. The least correct answers were chosen when asked about the usage and complications of Botox where 32,2% students knew that breathing difficulties can be a complication of Botox application. There were no questions that all students answered correctly.

When asked about the regulations of professions allowed to perform anti-aging treatments, 36,2% of all students thought that regulations exist and 31,1% didn't know. Among students who thought that regulations don't exist (32,8%), a higher percentage of them (41,5%) were senior students and 22,9% were undergraduates.

A total of 114 students (64,4%) showed interest in performing facial anti-aging treatments after completing their studies, whereas 40 students (22,5%) were not interested, and 40 students (22,5%) weren't sure. The number of students interested in attending courses on the application of anti-aging treatments was similar.

Most students (64,4%) didn't think that they will acquire the knowledge necessary for performing anti-aging treatments during their studies, of which most of them were seniors (90,4%). Furthermore, 48% of students thought that they will acquire manual skills needed for application of anti-aging treatment during their study, 33,3% of them thought the opposite, while 22,5% students didn't know. A significantly higher number of senior students (51,1%) did not think that they will acquire the necessary manual skills, while a larger number of undergraduates (30,1%) didn't know.

As for the last question related to education on the application of anti-aging treatments, 78,5% students showed interest in taking classes on different anti-aging treatments, 10,2% students weren't interested, and 11,3% didn't know. Out of all interested students, 55,3% of them were senior students, and 44,7% were undergraduates.

Discussion

A recent development of minimally invasive facial rejuvenation procedures as well as the general population's rising interest in treatments that alleviate the effects of skin aging has led to an increase in the number of professions performing such procedures. Dental medicine students represent the population of future medical professionals that will potentially perform anti-aging treatments in their

dental practices and therefore it is expected of them to be familiar with properties and complications of such procedures. While there are numerous studies about efficacy and safety of various anti-aging treatments, to the best of our knowledge this is the first study investigating the knowledge and opinions of dental medicine students regarding the anti-aging treatments. Since this is the first research of this kind, it was not possible to compare our results with any previously published data.

In our research we hypothesised that senior student, having passed the course in dermatovenerology, have greater knowledge of properties and complications of some of the most common anti-aging procedures and therefore can better assess who is qualified for performing such procedures. Furthermore, our hypothesis was that senior student, since they had already assisted in dental offices and therefore gain some information about clinical practice, are more interested in performing anti-aging procedures and education in this area, rather than undergraduates who have not yet had contact with dental practice and such procedures.

The first part of our hypothesis turned out to be correct, with senior students being better informed on anti-aging procedures and overall showing better knowledge than undergraduates. We assume that these results come from the fact that senior students gained knowledge through lectures and clinical exercises during dermatovenerology course while undergraduates have not yet passed this course. In the second part of the questionnaire where theoretical knowledge on anti-aging procedures was assessed, all correct answers were more frequently given by senior students rather than undergraduates. For example, 68,1% senior students knew that microneedling is not used in the active phase of acne vulgaris, while only 43,4% undergraduates knew this. Moreover, senior students showed a higher level of knowledge when asked about properties and mechanisms of hyaluronic fillers (60,6% vs. 36,1%) or complications of Botox application (38,3% vs. 28,3%). When asked about professions qualified for performing anti-aging treatments, most students (95,5%), of which more than half of them were senior students, agreed that dermatovenerologists are qualified for performing anti-aging treatments. This is followed by plastic surgeons (92,1%) and dental medicine doctors (74,6%). Surprisingly, 10,2% of students thought that nurses are qualified for performing such treatments and 11,3% thought beauticians are too (it was possible to choose multiple answers). A larger proportion of these students (60,5%) were undergraduates. We explain such results with the fact that undergraduates are not yet familiar with various complications that can occur as a result of different anti-aging procedures, as oppose to senior student who are generally better informed and more aware of the knowledge and skills needed to handle these complications if they occur. Accordingly, when asked about regulations of professions qualified for performing anti-aging treatments, 32,8% students knew that regulations do not exist, with a higher percentage of senior students (67,2% vs. 32,8%). Generally, state law regulates medical licensure and scope of practice which refers to the practice boundaries legislatures grant to allied physician and nonphysician providers. Because the anti-aging field is not a specifically licensed specialty, nonphysician providers must be careful to stay within their scope of practice or run the risk of prosecution for the unlicensed practice of medicine [2,3].

The second part of our hypothesis also proved to be true. Most students (64,4%), of which more than half of them were senior students, showed interest in performing anti-aging treatments in their future

dental practice. Additionally, 78,5% students showed interest for additional education in this area. Out of all the interested also more than half of them were senior students. We presume that this is due to the fact that senior students have already assisted in dental offices or did internships and therefore had contact with dental clinical practice.

Conclusion

Based on the results of our study, there is a great interest of dental medicine students for performing anti-aging treatments in their future dental practice. Given the fact that most dental medicine students believe that they do not receive enough information about anti-aging treatments during their education at the university, apart from great interest, they showed a certain level of knowledge about the most common treatments, but with a significant difference between undergraduates and senior students. Senior students showed better theoretical knowledge on properties and complications of some of the most common anti-aging treatments and were generally better informed on such procedures. Since this is the first research of its kind, it was not possible to compare our results with any previously published data.

Finally, students expressed a desire for better education on anti-aging procedures during their studies, as they believe that this area is part of the dental profession's future. The acquired competencies

would strengthen the quality and safety of anti-aging treatments in their future dental practice.

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Competing Interests

The authors declare no conflicts of interests.

Author's Contribution

All authors contributed to the manuscript conception, design, and writing. All authors read and approved the final manuscript.

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