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# PERCEPTION OF DENTAL MEDICINE STUDENTS ON DENTAL TOURISM

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## ABSTRACT

**INTRODUCTION:** Dental tourism is the fastest growing form of medical tourism. In Europe, it represents 50% of activities in medical tourism. Many dentists in Croatia, Bosnia and Herzegovina, and Serbia decide to engage in dental tourism.

**OBJECTIVES:** The aim of this research was to collect and analyze data on dental students' perception of this phenomenon in these three countries.

**MATERIAL AND METHODS:** The study was conducted online in the form of an anonymous 20-question survey questionnaire. In total, 326 students participated in the survey. Data was processed using Microsoft Excel 2010 (MS Office, 2010) and Statistica (Tibco, v. 13.5.0.17, 2018) programs. Correlation coefficients were calculated by using Spearman rank test

**RESULTS:** The results showed that the majority of students had a positive opinion about dental tourism and that they perceived it as a profitable activity that positively affects the quality of dental work in their countries. Almost half of the students were not aware of problematic ethical aspects of dental tourism. Despite the current poor prospects due to the decline in dental tourism due to the COVID-19 pandemic, a significant proportion of students still have plans to engage in dental tourism in the future.

**CONCLUSIONS:** The results showed that dental students perceived dental tourism as a positive phenomenon. Most of them said that dental tourism was a desirable career choice. Furthermore, it showed that dental students need better and more comprehensive education on ethical issues related to dental tourism.

**KEY WORDS:** students, dental medicine, medical tourism, dental tourism.

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## INTRODUCTION

Dental tourism is a sub-form of medical tourism, broadly defined as travelling to another country with the aim of obtaining dental treatment [1]. Affordable prices of complex procedures that, even when combined with the prices of travel and accommodation, cost less than the procedures themselves in their home countries, encourage residents of Western Europe and North

America to travel to Central and Eastern Europe, Latin America and Southeast Asia to obtain the desired procedures in some of the world's most attractive tourist destinations [2-8]. That combination of lower costs of procedures and travel has led to the accelerated growth and development of the medical tourism industry, from \$ 61 billion in 2017 to a projected \$ 275 billion by 2027, with an average growth rate of 12.8% per year [9, 10]. Within medical tourism, even greater growth is recorded

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in the sector of dental tourism. In Europe, 50% of the total activity in medical tourism is noted in dental tourism [11]. Dental tourism has greatly affected and changed the trends in the development of the dental profession in the Republic of Croatia as well as in neighboring Bosnia and Herzegovina and the Republic of Serbia. In the last 15-20 years, extensive private investments have been made in the development of dental tourism in these three countries [3, 12, 13].

## OBJECTIVES

Despite these facts, there is a lack of literature on dental tourism in general, and there are no papers that systematically analyze the perception of dental students about dental tourism. Therefore, the purpose of this study was to process data on the attitudes and opinions of dental students in the Republic of Croatia and neighboring countries about dental tourism, in order to increase the database of literature for all further research of this phenomenon.

## MATERIAL AND METHODS

The study questions were included in an anonymous online questionnaire that was originally developed by two of the authors for the purpose of writing a thesis paper.

## SURVEY DESIGN

The survey was aimed at and limited to dental students of 7 universities in 3 countries, namely the Republic of Croatia, Bosnia and Herzegovina, and the Republic of Serbia. The questionnaire consisted of 20 questions divided into two segments. In the first segment, students answered five questions to gain insight into socio-demographic characteristics of the examined population. In the second segment, students answered 15 questions to evaluate their perception of dental tourism. These 15 questions were in the form of five-point Likert scale (1 to 5), where 1 indicated 'strongly disagree' and 5 indicated 'strongly agree'.

## STUDY POPULATION AND SETTINGS

The questionnaire in the form of an online survey developed in Google Forms (Google Inc., 2018) was distributed to students via email and social media. Participation in the survey was completely anonymous and voluntary, and all survey participants were able to access the questionnaire only after giving informed consent. The survey lasted from February 15<sup>th</sup>, 2021 to March 1<sup>st</sup>, 2021. A total of 326 respondents were included in this study. The examined population consisted of dental students from School of Dental Medicine of

the University of Zagreb, Faculty of Dental Medicine of the University of Rijeka, Study program of Dental Medicine of the University of Split, Faculty of Dental Medicine and Health of the University of Osijek, Faculty of Dentistry of the University of Sarajevo, Dental Medicine study program of the University of Mostar, and Faculty of Dental Medicine of the University of Belgrade.

## DATA ANALYSIS

The obtained data was statistically processed using computer programs Microsoft Excel 2010 (MS Office, 2010) and Statistica (Tibco, v. 13.5.0.17, 2018). Correlation coefficients were calculated using Spearman rank test. To better identify various sub-groups, the answers were dichotomized. Values of 1 and 2 on Likert scale were determined as disagreement, value of 3 was defined as neutral, and values of 4 and 5 were determined as agreement.

## ETHICAL CONSIDERATIONS

The implementation of the research was approved by a decision of the Ethics committee of the School of Dental Medicine, University of Zagreb, number: 05-PA-30-XXIII-1/2021, issued on January 21<sup>st</sup>, 2021.

## RESULTS

### CHARACTERISTICS OF THE PARTICIPANTS

A total of 326 participants were included in this study. The examined population consisted of 260 females (79.8%) and 66 males (20.2%). The age of the participants ranged from 19 (4.6%) to 31 (0.3%), with 284 of the participants (87.1%) ranging from 20 to 25 years of age and the largest number being 23 years old (19.6%). At the time of participation in the research, all the respondents were dental students, and 325 were studying in a 6-year program; 1 student was studying in a 5-year program. Figure 1 shows number and percentage of the students from each of the 7 faculties, and Figure 2 presents number and percentage of the participants by their year of study at the time of the research.

### PERCEPTION OF DENTAL TOURISM

By making a detailed analysis of all the responses and processing the data using the Microsoft Excel 2010 (MS Office, 2010) and Statistica (TIBCO Statistica, v. 13.5.0.17, 2018) programs and by calculating the correlation coefficients by using the Spearman rank test it was established that there were no significant differences between the 326 answers to the survey questions. It is understandable because the opinions and attitudes of stu-

dents of all faculties in the Republic of Croatia, Bosnia and Herzegovina and the Republic of Serbia are similar. It follows from this fact that there is no need and possibility to make a stratification since people of the same age group, similar affinities, life views and education, and coming from the same culture group, have similar thoughts and views on the professional development and the future of their profession, as well as of the activity that greatly affects the future and prospects of work in their profession in their countries. Accordingly, the answers of all the respondents to the next 15 questions were observed as one large statistical sample, as can be seen in Figure 3.

The vast majority (88.3%) of dental students believed that dental tourism is mostly a positive phenomenon, and the majority of students (57.4%) agreed that dental tourism raises the quality of dental work in general. Almost all dental students who participated in the research agreed with the statement that dental tourism is a profitable business. A total of 70.2% of the students said that dental tourism had no impact on their decision to enroll in dental studies. Almost a third (28.5%) of the students were ready to relocate in their own country for dental tourism. When asked about moving to another country to engage in dental tourism, a total of 24.6% of the students expressed readiness for such a decision. A high percentage (67.4%) of the students were not ready to specialize in something that was not attractive to them, even if it would allow them to earn better in dental tourism. Almost all (94.8%) students agreed that knowledge of a foreign language is extremely important for better quality of work in dental tourism. Furthermore, 78.2% of the students expressed their readiness to learn a new foreign language to provide better service for dental tourists. Only 10.4% of the students had plans to engage in dental tourism immediately after graduation. When students were offered the idea of engaging in dental tourism after gaining several years of experience in the profession, 46.8% of the surveyed students had such plans. Only 36.8% of the students said that their perception on dental tourism has changed for the better over the course of their studies. As many as 60.7% of the participants believed that certain ethical aspects of dental tourism are questionable due to the way the procedures are carried out. Also, 53.7% of them believed that the ethics of dental tourism is questionable because of the focus on more profitable patients' group. Despite the pandemic, 47.6% of the students said their plans have not changed, and that they still see a perspective in the field of dental tourism for themselves.

## DISCUSSION

Since the Republic of Croatia is already widely established as one of the most important European destinations for dental tourism, and dentists in Bosnia and Her-

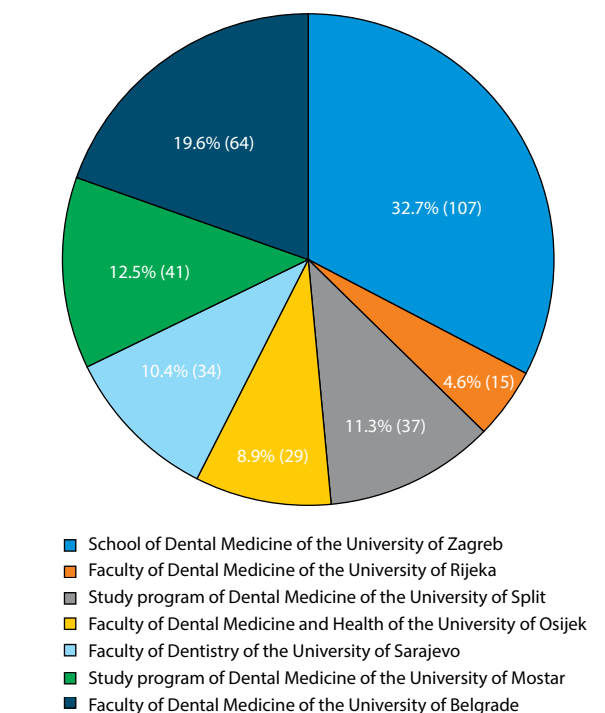


FIGURE 1. Number and percentage of students from each of the seven faculties

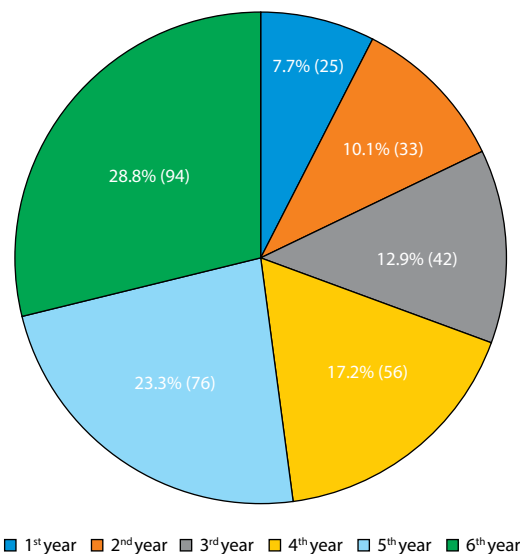


FIGURE 2. Number and percentage of students by year of study

zegovina and the Republic of Serbia are actively working to get involved in this activity as much as possible, it is not surprising that the vast majority of students perceived dental tourism as a positive phenomenon [3, 14, 15]. Furthermore, students generally believed that the quality of dental work in those countries, in which a large number of dentists engage in dental tourism, is at a higher level due to the demand of tourists for higher quality. These results are in line with the statements of surveyed



FIGURE 3. Answers to Likert scale questions by percentage

dentists from countries that are receptive markets for dental tourism from existing literature, who similarly described dental tourism as an activity that encourages them to invest in high-end equipment, education, and better quality of work [7, 16, 17]. This indicates that a positive perception of dental tourism is not necessarily conditioned with direct involvement in this activity, but can also arise from living in a country where dental tourism takes place, especially if there is a perspective for oneself to engage in this activity. However, such attitudes are in almost complete contradiction with the literature that analyzed the opinions of dentists and physicians from countries that are emittive markets for dental and medical tourism, who questioned the quality of work, materials and expertise of staff which took part in dental and medical tourism [4, 6, 18-20].

There is a need for further research to systematically examine why there is such a marked difference in atti-

tudes, and whether these polarized opinions are based on facts and evidence.

In order to examine the readiness for significant life changes and adjustments to engage in dental tourism, the research included questions about the impact of dental tourism as an attractive and profitable employment sector on students' decision to enroll in a dental school, readiness to move, and willingness to specialize in something that would not otherwise be their first choice because of dental tourism. Despite the fact that 95.1% of students perceived dental tourism as a profitable activity, more than 70% of them claimed that this perception did not influence their decision to enroll in dental school. Nevertheless, almost a third of the surveyed students were ready to move within their own country, and almost a quarter to move abroad in order to engage in dental tourism. This further confirmed the existence of a phenomenon that the authors of previous

research on dental and medical tourism in countries where a relatively large number of young dentists and doctors opt for this activity named 'internal brain drain' [21, 22]. It is assumed that in the countries covered by this research, if dental and medical tourism continue to develop rapidly, there would be a similar problem of lack of professional staff and satisfactory levels of healthcare in those areas, with no opportunity to develop these activities. On the other hand, market oversaturation could occur in tourist-attractive locations, as shown by research on the development of medical tourism in Mexico and Southeast Asian countries [21, 22, 29]. However, despite the relatively high willingness to relocate, only 15.3% of survey participants were willing to specialize in something that is not attractive to them, even if it would allow them to earn better from dental tourism.

These results can be explained by the fact that, if the statistics of the Croatian Dental Chamber are taken as an indicator, specializations in orthodontics, oral surgery and dental prosthetics are generally the most attractive to dentists, i.e. those specializations within which the most common procedures in dental tourism belong and which enable such high profits from dental tourism [4, 23, 24]. As far as knowledge of foreign languages was concerned, almost all students were aware that it is extremely important for dental tourism, and vast majority were ready to learn a new language if they decide to work in this field. This is not surprising considering that research on the most important factors on the basis of which potential tourists make the decision to choose a dentist in another country regularly emphasize that knowledge of the patient's language by the staff of the practice they choose is one of the crucial factors [7, 25]. Additional explanation for this attitude can be found in the fact that most of the participants were from the Republic of Croatia, where parts of the country with dentists speaking Italian were the first areas of massively developed dental tourism, precisely due to knowledge of the language and proximity of the Italian market [11, 12]. Regarding future plans in the sector of dental tourism, students largely rejected the idea of engaging in dental tourism immediately after graduation, and only 10.4% had such plans. However, a much larger number of students (46.8%) planned to engage in dental tourism after gaining several years of experience in the profession. Surprisingly, despite having the opportunity to become much better acquainted with all aspects of dental profession and employment prospects after graduation, only 36.8% of students said that their perception of dental tourism had changed for the better during their studies. Since 88.3% of them had a positive opinion about dental tourism, it is a good indicator of how much dental tourism is actually recognized as a profitable activity and attractive career choice in the general population of countries that are receptive markets for dental tourism, which was confirmed by previous research [19, 26, 27]. When it came to students' attitudes and opinions on ethically po-

entially problematic aspects of dental tourism, as many as 60.7% of students agreed with the statement that accelerated work procedures, reduced possibility of follow-up controls, excessive focus on profit, and questionable quality of work of some dentists and dental procedures within dental tourism can create certain moral dilemmas. These problems are highlighted in relevant literature as the most negative phenomena in dental tourism and are the most common arguments of dentists who oppose dental tourism [4, 19]. Furthermore, 53.7% of students believed that the ethics of dental tourism is questionable because dentists focus only on those patients who bring them profit, despite usually being located in those countries where the vast majority of residents do not have the access to the level of service quality that they provide due to their poor economic situation.

Nevertheless, despite this opinion, more than half of participants planned to engage in dental tourism in the future. This implied that they did not plan to be employees of their national health systems, which means that they did not have plans to provide dental health care to the most socially vulnerable groups in their own countries who do not have the opportunity to afford private dental care. This further confirms the results of research conducted on the social awareness of dental students, which showed a lack of real care and understanding for socially vulnerable groups and their oral health [28]. This research, together with the statements of dental practitioners dealing with dental tourism in countries with large populations at or below the poverty line, showed that in dental profession as a whole, there is a tendency to focus on private practices and patients who can afford expensive and complicated dental procedures, which leads to a decline in the level of quality and access to healthcare for socially vulnerable patients in countries with highly developed medical and dental tourism [17, 20-22]. On the other hand, in future research, it would be interesting to investigate whether in the Republic of Croatia, Bosnia and Herzegovina, and the Republic of Serbia there is a trend similar to that observed in Mexico and Romania, where many young dentists are forced to look for work in dental tourism because due to excessive enrollment quotas, there is a surplus of dentists in the labor market in relation to the actual needs of these countries [20, 21, 26, 27].

The questions used to investigate the ethical aspects of dental tourism showed that, despite the relatively high ethical awareness of students, there is a need for additional education of both students and dentists already engaged in dental tourism in order to avoid the often mentioned lack of access to healthcare for the socially vulnerable in countries with highly developed medical and dental tourism, but also to avoid the decline in the overall quality of work within dental tourism due to the use of ethically questionable working methods [17, 21, 22]. Given that the COVID-19 pandemic has led



to major difficulties in all economic activities, especially those directly related to travel, such as dental tourism, the last question was used to find out if there were potential changes in student plans related to work in the dental tourism sector. A surprising, but also encouraging fact that offers great hope for further growth and development of dental tourism in the three countries is that, despite current pessimistic prospects, almost half of surveyed students still planned to engage in dental tourism in the future.

The study has shown that there is a need for additional education of students on potentially problematic ethical aspects of dental tourism. A good example of how this can be achieved is the inter-disciplinary postgraduate study of dental tourism in the School of Dental Medicine at the University of Zagreb [30]. As part of this study, there are a number of courses, through which all students can gain theoretical and practical knowledge on tourism, economics, and management, but also learn all about ethical business procedures, work methods, and practices. Such a study, so far the only one in all three countries involved in the research, will greatly contribute to improving the quality of work and the level of education and ethical awareness among those dentists who opt for further education to be better providers in the sector of dental tourism.

## CONCLUSIONS

To the best of the authors' knowledge, this is the first research that systematically analyzed the perception of dental students about dental tourism. The results showed that they perceived it as an extremely positive phenomenon and a driving force for the advancement of quality of dental care in general. Most of them said that dental tourism was a desirable career choice and that despite the current bad prospects due to the COVID-19 pandemic, their plans to engage in dental tourism remained unchanged. Furthermore, it showed that dental students need better and more comprehensive education on ethical issues related to dental tourism.

## CONFLICT OF INTEREST

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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