

# Evaluation of the knowledge about sports dentistry of the ULBRA-Torres dental school professors in the care of professional and amateur athletes

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## Abstract

The objective of this study was to evaluate the knowledge about sports dentistry and the ability to care for athlete patients of the professors of the Dentistry Course of the Universidade Luterana do Brasil - Torres RS. A questionnaire with 11 closed questions was elaborated, in which the professors answered without making use of bibliographical material or any means of external consultation. The results showed that the knowledge about Sports Dentistry among the professors of the Universidade Luterana do Brasil - Torres Campus is quite varied, regarding the very existence of the area, the differentiation regarding the necessary care for the patient/athlete and sports doping.

**Keywords:** Dental surgeon; Athlete; Sports Dentistry.

## Introduction

It has been known for a long time that sports are directly linked to the Brazilian people. Among many references to our people, we are known as the "Country of Soccer", however, we have also achieved significant results in various other sports [1].

In this decade, we will be participating in two major sporting events of worldwide visibility: the Olympics in Rio de Janeiro, in 2016, and also, in 2014, the Soccer World Cup, as the host country - an opportunity that we will have to really confirm the name given to us. Because of all these circumstances, and the great expectation

of the people who practice, work, or simply watch these events through the media, we will have the responsibility to take every care and offer full conditions for sports [2].

Within this line of thought, the care with the oral health of the athletes deserves total consideration by the dental surgeons, because it is known that dental problems as inflammatory processes, dento-alveolar traumas, among others, can harm the performance of the athlete in the trainings, as well as, his performance at the moment of a test or a match [3].

Still according to [3], the dentistry professional must have the knowledge of the drug substances that can or cannot be administered to the athletes, because a simple painkiller can be a reason for suspension for the athlete - doping - because this drug can be listed in the IOC (*International Olympic Committee*) and be detected in the anti-doping exam.

All these situations are addressed within the field known as Sports Dentistry, however, it is our understanding that in Brazil this branch of the Health area has not yet reached levels of recognition and respect as achieved in other countries that have Sports Dentistry in their curriculum. The performance of the dental professional in this field goes through the adoption of measures that involve

the correct diagnosis, through preventive actions, to the most varied forms of treatment to solve problems similar to common patients.

Usually, the athlete (amateur or professional) is treated in a conventional way, which can be a mistake, specific preventive measures, as well as a treatment with differentiated care should be well planned, for example: Metal restorations are not indicated because they present a higher risk of fracture of the dental structure by impact, due to its hardness and resistance, thus, the most indicated material is the light-cured resin according to [2].

According to [4] problems such as infectious foci - dental or periodontal, muscle disorders, identification of malocclusions, vicious habits and others gain more specificity by harming the physical performance of the athlete, since their performance is directly linked to physical and mental health [5] the performance of a person who practices sports and has some disorder in the oral cavity, may be reduced by up to 30%.

Thus, according to [5] it can be said that one of the goals of sports dentistry is to ensure the sportsperson, adequate physical conditions to compete with fewer risks and without reducing their performance.

## Methodology

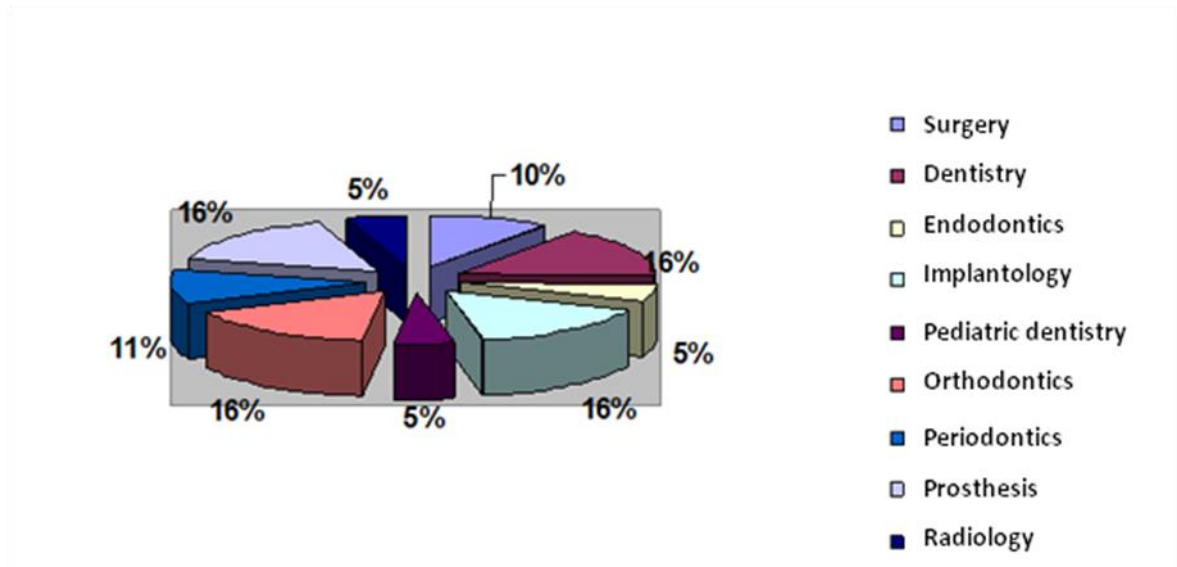
In this study the method of observational descriptive research was used, for the collection of data, a questionnaire consisting of 11 questions (closed) was used, through which we tried to evaluate the degree of knowledge of professional dentists (teachers of the Undergraduate Dental Course of the Universidade Luterana do Brasil - Torres Campus) about Sports Dentistry.

The study population consisted of 14 dentist-surgeon teachers from the Dentistry Course of the ULBRA Torres Campus, from different specialties, who answered the questionnaires during a period of one week, during the available time and had to be filled out at the University itself. However, one of the

participants was excluded from the sample for not following this last criterion, totaling 13 participants. After completing the questionnaire, each participant placed it in a brown envelope, with no obligation to identify themselves.

## Results

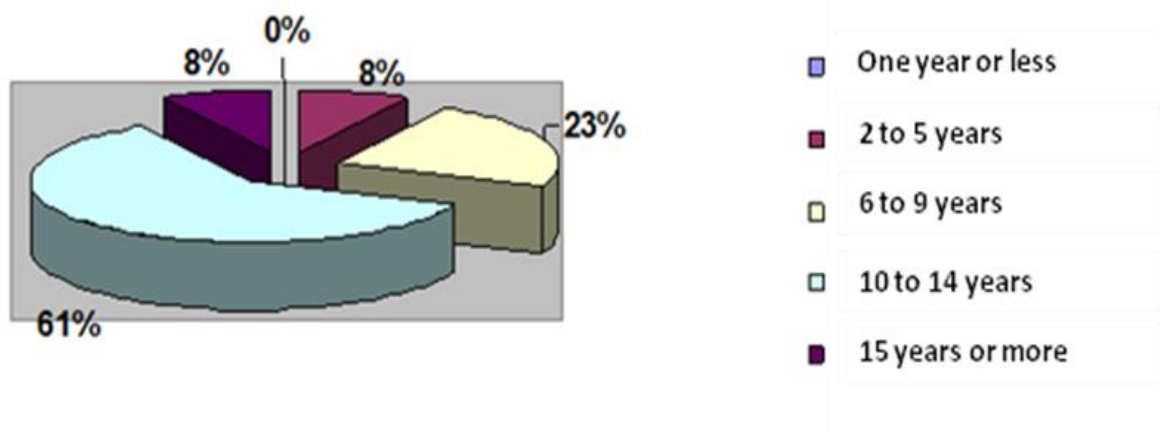
Regarding the specialties (area of work) of the 13 research participants, the sample was distributed among the following areas: surgery (10%=2); dentistry (16%=3); implant dentistry (16%=3); pediatric dentistry (5%=1); orthodontics (16%=3); periodontics (11%=2); prosthodontics (16%=3); radiology (5%=1). Moreover, the titles of the teaching group were distributed among 2 specialists, 8 masters and 2 PhDs (Figure 1).



**Figure 1.** Question: What (s) specialty (s) of your performance in Dentistry?

Figure 02 show the percentage of time these professors have been teaching at the university. The data show that most of the teachers have been teaching between 10 and 14 years, representing 61% of the sample (8 teachers). Three teachers have been

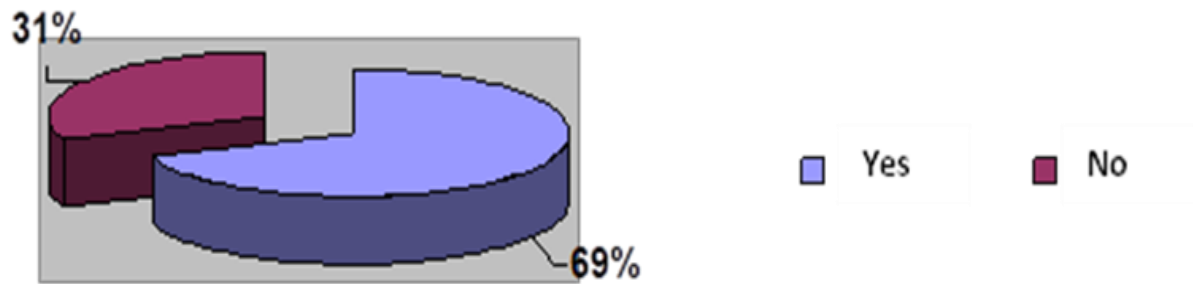
teaching for 6 to 9 years, making up 23% of the total, and two participants have been teaching for different periods, each one making up 8% of the sample, varying from 2 to 5 years and more than 15 years (Figure 2).



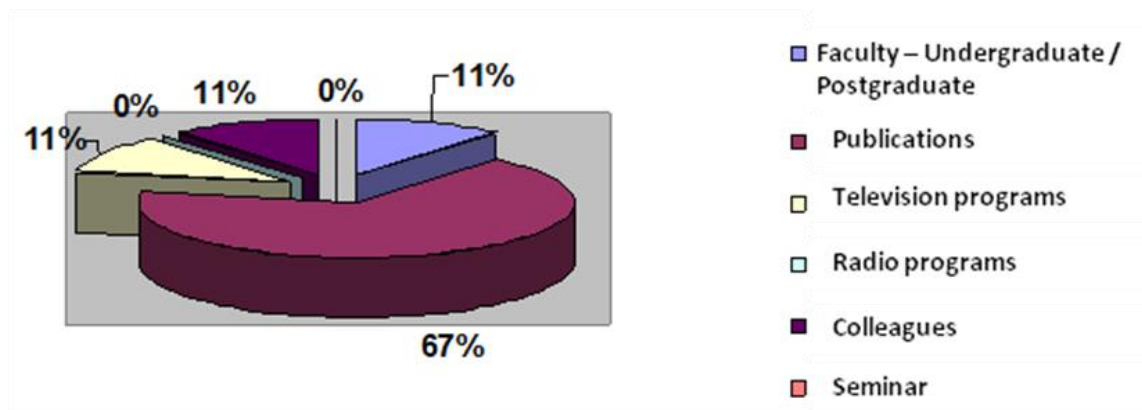
**Figure 2.** Question: Teaching time at the university under study.

Figure 03 show the percentage of teachers who have knowledge in the area of sports dentistry. The results showed that 69% of the sample (9 participants) indicated that they had heard of or had some knowledge about the subject. Four participants (31% of the sample) said they had never heard of the term or had no knowledge at all about the proposed theme (Figure 3). Regarding this question, only the teachers who answered "affirmatively" to question "3" had their answers considered, totaling 63% of the sample.

A total of 9 answers regarding how the teacher learned about the subject were analyzed. Six participants (67%) of the sample reported having learned about it only through publications. The other participants, totaling three teachers, reported having had contact with the subject in different ways: 01 participant through publications and television programs (11%); 01 participant through the College and colleagues (11%) and 01 teacher (11%) reported having had contact with the subject only at the College (Figure 4).



**Figure 3.** Question: Teachers who have knowledge in the field of Sports Dentistry.



**Figure 4.** Question: Communication instrument that the teacher acquired knowledge.

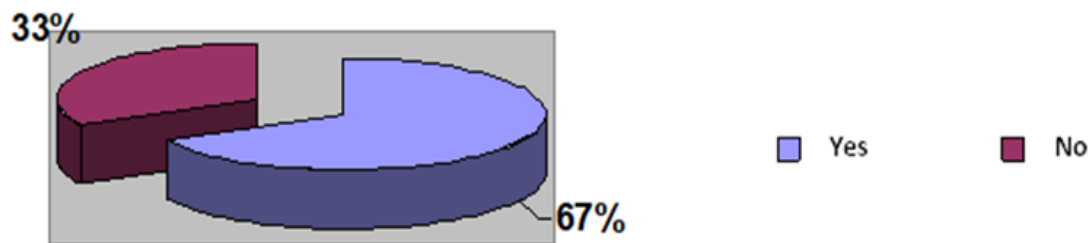
Figure 5 refers to the questioning about the practice of physical activities during the anamnesis. The results showed that 67% of the sample (6 participants) answered affirmatively, while the remaining 33%, a total of 3 teachers, did not include this question in the initial interview (Figure 5).

Figure 6 represents the percentage of teachers who have knowledge about the importance of

knowing safely the type of drug that should be prescribed during dental treatment, as well as the correct filling of the Therapeutic Use Information. This factor is a way to assure the athlete of not being penalized in the anti-doping exam.

Regarding the use of the "IUT" Guide, eight of the nine participating teachers were unaware of its use, totaling 89% of the sample. Only one

interviewed teacher was able to inform it out (11% of the sample). when it is indicated and necessary to fill



**Figure 5.** Question: Communication instrument that the teacher acquired the knowledge.

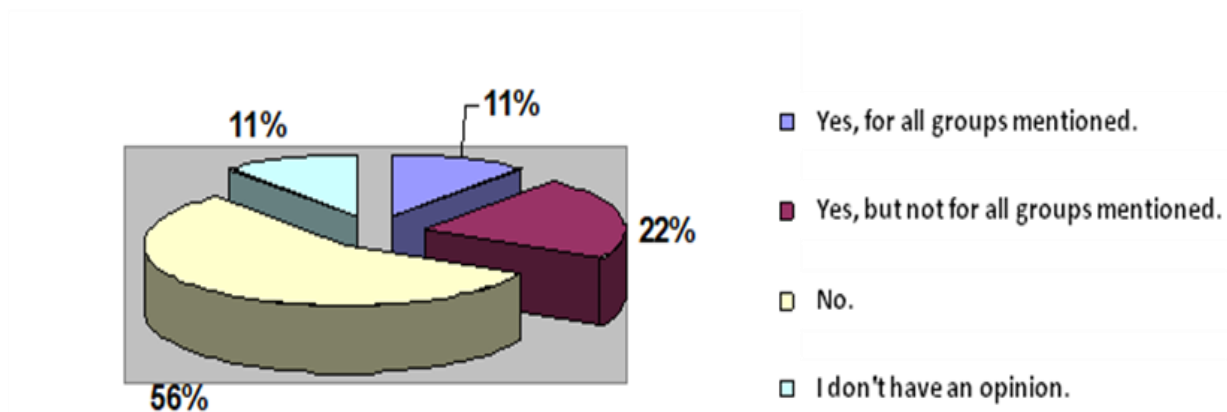


**Figure 6.** Question: Are you aware of the importance of filling out the ITU and the type of medication to be described to the athlete patient?.

Figure 07 shows the percentage of teachers who are confident in prescribing any of the groups of antibiotics listed in the questionnaire for the treatment or prevention of common infections in dentistry. Penicillin, erythromycin, and tetracycline were listed.

It was found that six participants (56% of respondents) responded that they were not confident in prescribing. Two participants (22%) stated that they had prescription safety, but not for all the groups indicated. Only one participant (11%) declared "yes" for all groups. Still, one interviewee reported

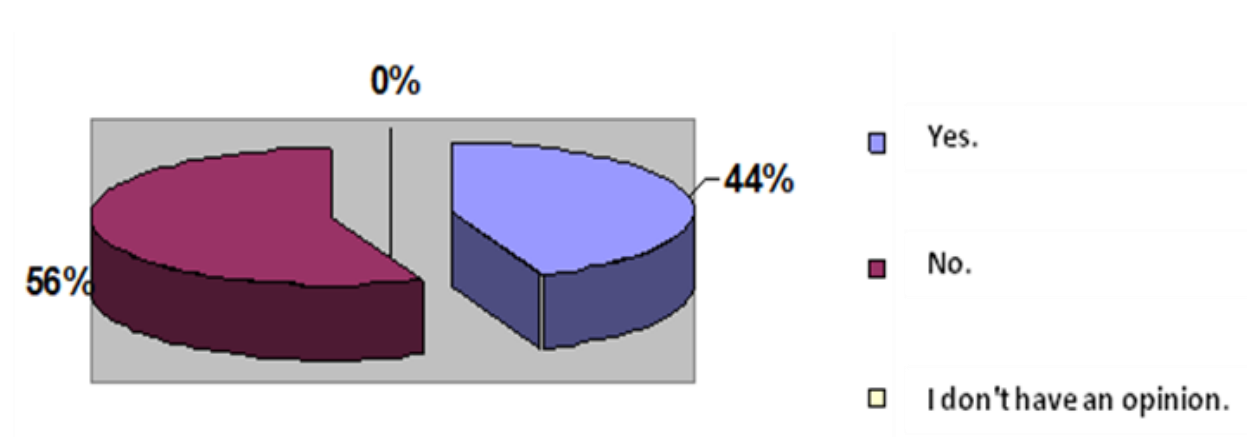
having no opinion about this, representing 11% of the sample.



**Figure 7.** Question: Are you aware of the importance of filling out the ITU and the type of medication to be described to the athlete patient?.

Figure 08 shows the percentage that corresponds to the teachers' knowledge about the doping risk when using painkillers and/or anti-inflammatory drugs by the athlete

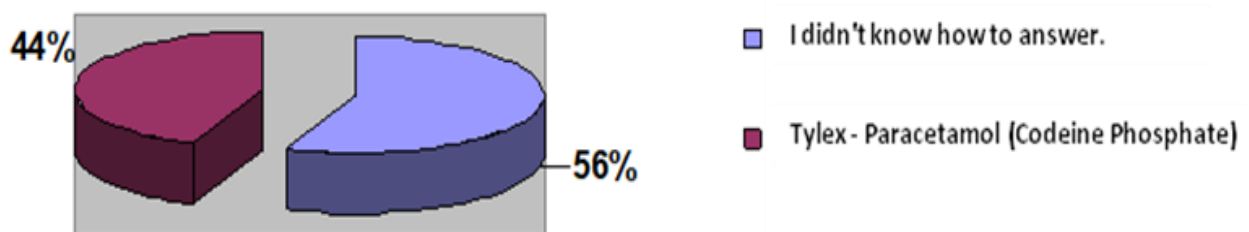
patient. The drugs listed were: Dôrico (Paracetamol), Cataflan (Diclofenac Potassium), Aspirin (Acetylsalicylic acid), Voltaren (Diclofenac Sodium), Tylex (Paracetamol/Codeine phosphate).



**Figure 8.** Question: Are you aware of the risk of doping in the use of analgesics and/or anti-inflammatory drugs by the athlete patient?.

Before the questioning we tried to clarify that after some clinical procedures, such as endodontic surgery and major surgeries, the use of analgesics and/or anti-inflammatory drugs is necessary. Thus, regarding the prescription of five analgesic and/or anti-inflammatory drugs widely used in dentistry, the results showed that five teachers (56% of the sample) recognized

a drug that would be accused in the anti-doping exam, and four of the interviewees (44% of the sample) did not identify any of the drugs mentioned as prohibited medication for athletes in competitions. Only those teachers who answered "yes" in the previous questionnaire answered question 9. Figure 9 shows the corresponding percentage.



**Figure 9.** Question: Are you aware of the risk of doping in the use of analgesics and/or anti-inflammatory drugs by the athlete patient?.

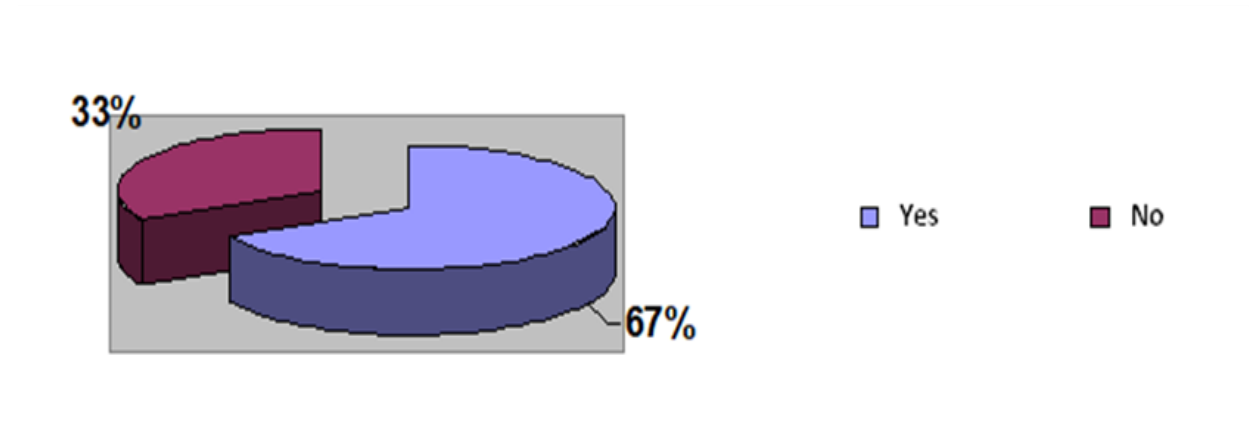
The five respondents who answered "yes" in question number "8", corresponding to 56% of the sample, were investigated regarding which of the medications mentioned in the previous question is prohibited by the IOC. The result showed that the five participants who answered "yes" to the previous question indicated the drug Tylenol-Paracetamol/Codeine Phosphate as a prohibited medication, and no other drug was mentioned as a cause of sports doping (Figure 9).

In question 10, we first tried to inform that in several European countries, as well as in the USA and Canada, sports dentistry is considered a dental specialty and is part of the curriculum of dental courses. Figure 10 shows the percentage obtained by checking whether the teacher is aware of this information.

It was found that six participants of the sample (67%) indicated having no knowledge about the fact and 3 interviewees answered affirmatively regarding the presence of the subject



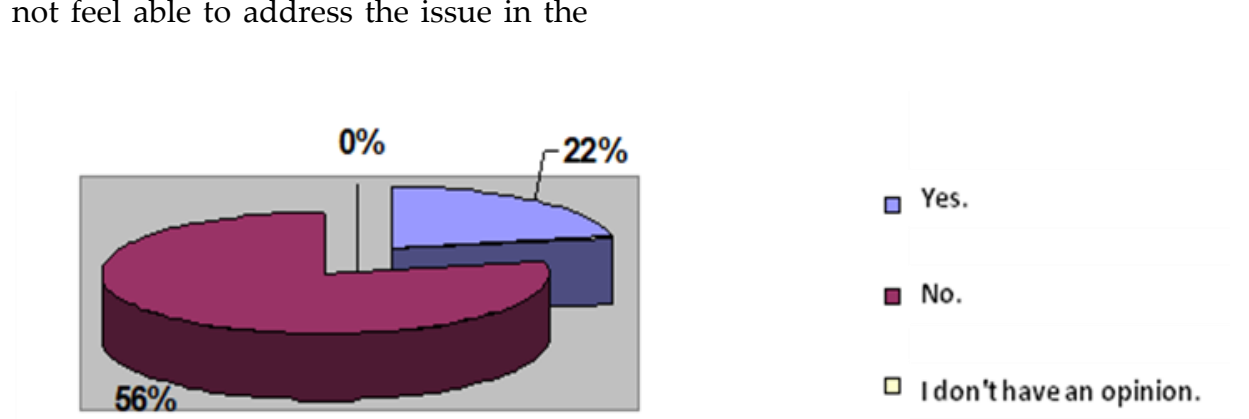
approach in the curricula, representing 33% of the sample.



**Figure 10.** Question: Percentage of professors who know that Sports Dentistry is part of the curriculum of Faculties of Dentistry in different countries.

Figure 11 shows the percentage of teachers who feel able to address this type of issue with their students. Evaluating the answers regarding the teacher's ability to address the issue with their students, 7 participants (78% of the sample) answered that they do not feel able to address the issue in the

classroom at the present moment. Two participants, representing 22% of the interviewees who have heard about or had some contact with the topic in question, said they feel partially able to explain something about the topic to their students.



**Figure 11.** Question: Teachers who feel qualified to approach this type of subject with their students.

## Discussion and Conclusion

From the analysis of the data obtained in the study, it was found that the approach to the subject of sports dentistry by the professors of the Ulbra Torres School of Dentistry still needs to be better known and studied in order to be inserted into the curriculum as part of the training of the students. However, by means of the theoretical referential used in this study, we have as an explanation for this occurrence, the fact that this area of dentistry represents a still incipient field of action in Brazil, little known and/or divulged [2].

Initially, seeking to assess whether all participants had any or any intimacy with the subject, they were asked "*if they had any knowledge or had heard of*" the term sports dentistry, so that a good part of the sample, 31% of the interviewees, reported not being aware of the subject. This episode may be explained by the fact that, although the teaching time of the group of teachers is wide, and they are well qualified, most of the interviewees have been teaching for over 10 years, and therefore, if we go back in time to their academic training, they also did not have these aspects worked by their masters, since sports dentistry is a new trend [6,7,8], and for some time, was treated in Brazil, as a subcategory of occupational dentistry, which was created in 2004 [9].

Next, in question "4", the nine professors who answered they had had contact with the subject (69%), were asked how they had learned about the subject" and, although they presented varied means of information, most of them, corresponding to five professors, had obtained information through publications, alone or associated with other means of information. It is important to stress that, in our study, practically all types of publications were considered: online and printed scientific publications, newspapers, magazines with themes in Dentistry or related to Sports, and different "sports sites" with "notes" on the subject, in Brazil and in the World. This procedure was adopted because, as reported by several authors, there is still a lack of scientific studies on several issues related to the dental surgeon's role in the multidisciplinary team that cares for the athlete's health [1-2].

With the purpose of investigating whether the dental surgeon really makes any differentiation regarding the necessary care for the patient/athlete, we asked the participants - members of the group that reported having some knowledge of sports dentistry - if during the medical history they asked the patient about the practice of sports activities. Among the nine professors who answered this question, six reported investigating this information

in the medical history (67%), and three professors (33%) reported that they did not. However, if we also consider the four participants who, in question "03", answered that they had no knowledge on the subject, it is plausible to think that they would not do the questioning either, increasing to seven the number of participants who would not value this premise, among the total of thirteen interviewees, making up 53% of the total sample.

The relevance of the professional knowing that the patient is an "*athlete*", and also if he or she participates in official competitions is of utmost importance for the conduct to be adopted by the dentist, both in the prevention and treatment of problems. The difficulty in recovering from muscle injuries, or their recurrence, may be associated with dental infectious foci that must be treated [10]. Malocclusion and mouth breathing problems may negatively affect up to 30% of an athlete's performance [4,11]. Metal restorations offer more risk of fracture and should be replaced [2], and mouth guards should be suggested to those patients who practice direct contact sports [1,12-14]. Furthermore, knowledge and caution when administering drugs due to the possibility of doping is part of the competencies of any healthcare

professional who treats sports people [3,10,15-16].

Following the research, the answers involving four questions related to sports doping were analyzed in front of the interviewees who answered the entire questionnaire. The first question, number "06", was related to the "IUT" (*Information for Therapeutic Use*) guide, and its objective was to evaluate if the dentist knew how to inform when it was necessary to fill out this form. The result showed that the participants did not know the need of using the "IUT", because almost 90% of the sample - totaling 8 participants - could not inform the need of its use, and only 1 participant (11%) could answer what the function of this spreadsheet is, confirming its application in the case of the need of prescribing a medication for their patient, which is forbidden by the committees [9,17]. Similarly, as previously analyzed, if we consider the same four participants who initially answered that they did not know about sports dentistry, most likely, they would not know how to fill it out either, making up 92.3% of the total sample.

The second question focused on doping and dealt with the prescription of medications. The interviewees were asked whether they would be confident in prescribing any of the three antibiotic groups mentioned (Penicillin, Erythromycin, and Tetracycline), aiming

at the treatment or prevention of common infections in Dentistry in relation to Sports Doping. The results showed that the majority demonstrated that they were not confident in indicating the groups of antibiotics - 06 participants (56%) answered that they were not confident in prescribing them, and 02 participants (22%) stated that they were confident in prescribing them, but not for all the groups indicated. Only one interviewee answered correctly in relation to the 3 groups, having safety in prescribing for all the antibiotic groups, because they are not prohibited by the IOC [9, 17].

Still, in relation to the prescription of drugs and doping, question number 8 was asked to evaluate if the participants were aware of the possibility of administering painkillers or anti-inflammatory drugs, in view of the anti-doping exam. Five medications, widely used in dentistry, were mentioned with their respective trade names and active ingredient. The results of the sample were balanced, with 5 interviewees (56%) identifying a prohibited drug, indicating "yes", and 4 participants (44%), indicating "no", not identifying one of the drugs as prohibitive. It is important to point out that the interview was conducted with professors from various areas of the course, who use some of these drugs in their daily practice. Nevertheless, once

again, it is assumed that the 4 participants who did not answer the whole questionnaire could increase the contingent of professionals who would not recognize a drug banned by the IOC and WADA [9].

The last of the four doping-related questions, question number "09", assessed within the group of 5 respondents who recognized a prohibited drug in the previous question, whether the dentist could inform which of the five drugs was part of the IOC and WADA prohibited list. In this case, all five indicated the drug Tylenol-Paracetamol/codeine phosphate as a prohibited medication, which is actually correct, according to the two entities cited [9].

As far as the presence of sports dentistry as a specialty integrated into the curriculum of dental schools in different countries is concerned, only 3 professors among the entire sample demonstrated to have this knowledge. In fact, USA, Canada and some European countries, by developing activities focused on this area, being treated as a specialty, provide opportunities for undergraduate students to acquire the skills and abilities necessary to prevent and treat their athletes. In our country, because it is a new approach within Dentistry, only this year, in Curitiba, a specialization class began to develop

these skills and competencies, but as a *Stricto-Senso* and not as an undergraduate course.

Following the approach of the theme, within the undergraduate curricula in Dentistry, the interviewees were asked what they thought about their own qualification regarding the approach of the subject with their students: *"do you think you are qualified to approach this kind of subject with your students?"*. No teacher answered that he/she feels fully qualified to develop this subject, which is perfectly understandable in view of what has been exposed so far.

From their training as undergraduate students, to their training in the *"stricto and lato sensu"* courses, these issues are little addressed and the literature is not very vast, often being repetitive - as we could see in the search for the theoretical reference to develop this study. Still, for being recent the idea in the country, allied to the need of an interaction, not only of disciplines or specialties of Dentistry - Interdisciplinarity -, but also, the interaction with other areas of health (multidisciplinarity) for the care of the athlete, it becomes urgent that, some barriers of knowledge and knowing, as well as, of doing, be surpassed and, it is in this context, that the dentist-surgeon must be attentive.

The development of this work opens paths to attention that the dentistry professional can explore in his career. Sports dentistry is an area little explored in Brazil, but it is of fundamental importance.

Health promotion in dentistry has been developing in several areas and one of them is sports dentistry, which is concerned with ensuring the oral health of athletes and avoiding injuries caused by accidents during training and competitions. Oral injuries, such as dental trauma, are very common in sports and it is therefore important to conduct studies in this area.

Taking into account the importance of preventing cases of doping in sports, there is a need for multidisciplinary teams to work so that athletes do not have their careers harmed due to the ingestion of illicit substances. In the case of sports dentistry, the dentist has an important role in this process, both in preventing the occurrence of oral lesions and mainly in the area of knowledge in dentistry as well as in physical education.

At the end of this research, it is concluded that the degree of knowledge about Sports Dentistry among the professors of the Universidade Luterana do Brasil - Torres Campus is quite varied, regarding the very existence of the area, the differentiation regarding

the necessary care in the care of the patient/athlete and sports doping.

## References

- [1] Costa SS. Odontologia desportiva na luta pelo reconhecimento. Revista de Odontologia da Universidade Cidade de São Paulo. 2009 mai-ago;21(2):162-8.
- [2] Moura APF. Odontologia desportiva e o desempenho dos atletas. 2004;(10). Disponível em: [http://www.hospitalar.com/opiniaopinia\\_1172.html](http://www.hospitalar.com/opiniaopinia_1172.html). Acesso em: 10 set. 2012.
- [3] Sequeira E. Odontologia Desportiva: o Esporte e a Saúde Bucal. 2005;15(2). Disponível em: <http://www.saudetotal.com.br/artigos/saudebucal/odontodesportiva.asp>. Acesso em: 10 jan. 2012.
- [4] Oliveira RS, Lemos LFC. A Influência de patologias odontológicas em atletas de canoagem e handebol. Lecturas Educacion Física y Deportes (Buenos Aires). 2007;(107).
- [5] Abreu DG. Respiração bucal e disfunção da ATM: problemas ortodônticos que podem trazer grandes prejuízos ao desempenho físico. Revista Brasileira de Ciências da Saúde. 2008;18(10-12):49-55; VI.
- [6] Dias RB, Silva CMF, Gennari MG, Coto NP. Problemas Odontológicos x Rendimento Esportivo. Revista Odontológica Universidade Santo Amaro. 2005;10(2):(7-12), 28-31.
- [7] Leite MVJ, Feitosa MG, Souza PSAF, Pedrosa PCJ, Antunes LL. Odontologia Desportiva x Performance Física. 2007;31:(5).
- [8] Lemos LFC, Oliveira RS. Odontologia Desportiva: Uma breve revisão sobre essa nova tendência no esporte. Revista Digital - Buenos Aires. 2007;12(113):10. Disponível em: <http://www.efdeportes.com/efd113/odontologia-desportiva.htm>. Acesso em: 10 jan. 2012.
- [9] Rose EH, Feder MG, Damasceno LMP, Neto FRA. Uso de Medicamento no esporte. 3 ed. Rio de Janeiro, 2003. Disponível em: [http://www.marski.org/artigos/downloads/doc\\_details/49-uso-de-medicamentos-nos-esportes-comite-olimpico-brasileiro](http://www.marski.org/artigos/downloads/doc_details/49-uso-de-medicamentos-nos-esportes-comite-olimpico-brasileiro). Acesso em: 02 set. 2012.
- [10] Costa G. Problemas odontológicos podem ser 'inimigo invisível'. 2008 (8). Disponível em: <http://www.universidadedofutebol.com.br/Artigos/2008/08/1,1778,PROBLEMAS+ODONTOLOGICOS+PODEM+SER+INIMIGO+INVISIVEL.aspx?p=3>. Acesso em: 10 set. 2012.
- [11] Abreu DG. Respiração bucal e disfunção da ATM: problemas ortodônticos que podem trazer grandes prejuízos ao desempenho físico. Revista Brasileira de Ciências da Saúde, 2008;18 (10-12):49-55;VI.
- [12] Zacca CAA. Investigação da prevalência de traumatismos dento-

faciais em praticantes de boxe e a importância dos protetores bucais nas consequências dos traumas. Dissertação (Mestrado). Belém: UFP, 2006.

[13] Megale RGT. Importância dos Protetores bucais para esportes no meio Militar Trabalho de Conclusão de Curso (especialização). Rio de Janeiro: Escola de Saúde do Exército, 2008.

[14] Cremonez J, Abreu DG. Protetores bucais e seu impacto no condicionamento físico de atletas de futebol. Revista Brasileira de Ciências da Saúde. 2009; 20(4-6):39-45.

[15] Ranalli D. Adolescent athletes: perspectives for dental practitioners. Northwest Dentistry, 2007; (9-10):15-20.

[16] Barberini AF, Aun CE, Caldeira CL. Incidência de injúrias orofaciais e utilização de protetores bucais em diversos esportes de contato. Rev. Odontol Unicid. 2002; 14 (1-4): 7-14.

[17] Mello AB, Flório FM. Odontologia do esporte: como atuar em equipe na prescrição segura de medicamentos?. Fiep Bulletin. 2010; (80), II. Disponível em:[http://clarapadilha.com.br/arquivos\\_arquivos/adeb7037dda3b2b3394fdf02582bf2.pdf](http://clarapadilha.com.br/arquivos_arquivos/adeb7037dda3b2b3394fdf02582bf2.pdf). Acesso em: 10 nov. 2012.

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