

## Construction and validation of a podcast for dental surgeons: timely conduction after tooth avulsion

Construção e validação de um podcast para cirurgiões dentistas: condução oportuna após avulsão dentária

Construcción y validación de un podcast para cirujanos dentales: conducción oportuna después de la avulsión de diente

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### Abstract

**Objective:** Create and validate a podcast for dental surgeons as a guide after a dental avulsion. The validation was done through Google forms. Nine expert judges participated, following four aspects: characterization of the judges, content, functionality and appearance. The quantitative analysis was performed with Excel software to calculate the content validity index. **Method:** Methodological study with a quantitative and validation approach, carried out in three stages: integrative review of the literature; technology construction; validation of a post-avulsion podcast presented to nine expert judges. A Likert scale was used for data collection. For the analysis, a content validity index  $\geq 0.75$  was adopted. **Results:** The Content Validity Index presented values of 0.84% in its structure and presentation, 099% of high relevance for expert judges. **Conclusion:** The “Al Dente” podcast contains important information on dental reimplantation after an avulsion, resulting in preventive measures that directly influence health services.

**Keywords:** Tooth avulsion; Tooth replantation; Educational technology; Dentistry.

### Resumo

**Objetivo:** Construir e validar um *podcast* para cirurgiões-dentistas para orientações após uma avulsão dentária. A validação ocorreu via *Google Forms*. Participaram nove juízes especialistas, seguindo quatro aspectos: caracterização dos juízes, conteúdo, funcionalidade e aparência. A análise quantitativa foi realizada no software Excel para calcular Índice de Validez de Conteúdo. **Método:** Estudo metodológico com abordagem quantitativa e de validação, realizado em três etapas: revisão integrativa da literatura; construção da tecnologia; validação de um podcast pós avulsão dentária submetido à apreciação de nove juízes especialistas. Na coleta de dados utilizou-se uma escala de Likert. Para análise, adotaram-se Índice de Validez de Conteúdo  $\geq 0,75$ . **Resultados:** O Índice de Validez de Conteúdo apresentou valores de 0,84% na sua estrutura e apresentação, 099% de alta relevância para os juízes especialistas. **Conclusão:** o podcast “*Al Dente*” tem informações importantes sobre reimplantar dentário após uma avulsão, resultando em medidas preventivas que influenciam diretamente nos serviços de saúde.

**Palavras-chave:** Avulsão dentária; Reimplante dentário; Tecnologia educacional; Odontologia.

### Resumen

**Objetivo:** Crear y validar un podcast para cirujanos dentales como guía después de una avulsión dental. La validación se realizó a través de formularios de Google. Participaron nueve jueces expertos, siguiendo cuatro aspectos: caracterización de los jueces, contenido, función y apariencia. El análisis cuantitativo se realizó con el software Excel para calcular el índice de validez del contenido. **Método:** Estudio metodológico con enfoque cuantitativo y de

validación, realizado en tres etapas: revisión integradora de la literatura; construcción de tecnología; validación de un podcast posterior a la avulsión dental presentado a nueve jueces expertos. Para la recolección de datos se utilizó una escala Likert. Para el análisis, se adoptó un índice de validez de contenido  $\geq 0,75$ . Resultados: El Índice de Validez de Contenido presentó valores de 0.84% en su estructura y presentación, 099% de alta relevancia para jueces expertos. Conclusión: el podcast “Al Dente” contiene información importante sobre la reimplantación dental después de una avulsión, lo que resulta en medidas preventivas que influyen directamente en los servicios de salud.

**Palabras clave:** Avulsión de diente; Reimplante dental; Tecnología educacional; Odontología.

## 1. Introduction

Dental traumas are emergency situations, which often occur in dental clinics and hospitals. Dental surgeons, as well as health professionals, should be familiar and prepared with different factors that can influence the correct prognosis of dental reimplantation (Andreasen, 2018; Jain et al. 2017).

A tooth avulsion is a type of serious injury that causes damage to tooth structures that can be irreversible. It is defined as a total displacement of the tooth out of its alveolus, where it compromises cement, periodontal ligament, alveolar bone, gum and pulp. Disfavoring the masticatory, phonetic, aesthetic functions, occlusion, loss of space in the dental arch, as well as psychological (Andreasen, 2018).

Different causes can generate a dental trauma: road accidents, contact sports, aggression, falls, collisions (Mesquita; Silva, 2017), emergency intubation practiced in hospitals (Galvão et al. 2020).

The public in which these traumas occur the most, are young male patients, mainly reaching the upper central incisors (Andreasen, 2018; Jain et al. 2017; Mesquita et al. 2017).

The main factors that can change the prognosis are: the time outside of the alveolus, the ways of conservation of the dental element and the stage of root development (Andreasen, 2018). Knowledge about trauma by numerous health professionals is essential, since the success in the immediate reimplantation procedure will contribute considerably to the maintenance of the dental element in its own place (Andreasen, 2018; Galvão et al. 2020).

Public and educational policies should be implemented in order to provide information about dental reimplantation. It is expected that the combination of preventive and educational actions will decrease the rates of avulsion accidents and improve the prognosis in long terms of reimplanted teeth (Mesquita et al. 2017).

A validated study using Information and Communication Technologies (ICTs) in education has proved to be something indispensable in the teaching and learning process. The podcast is a tool with considerable capacity and potential to be used in teaching and promoting information (Vianna et al. 2018).

According to the State of the Podcast Universe report in June 2020, published by Voxnest, an American company focused on data studies involving the creation and distribution of podcasts, Brazil leads the ranking of countries where the production of content of the genre has grown the most since the beginning of 2020, behind of Turkey, India, Colombia and Argentina.

Given the great importance of this topic, dental surgeons should be aware of their role in preventing and assisting in cases of dental avulsion, since the prompt care and the indication of an appropriate treatment directly influence the success of the reimplantation. Thus, it was defined as the objective of the study to build and validate a podcast for dental surgeons with guidance after a Tooth avulsion.

## 2 Method

Methodological study with quantitative and validation approach. This type of research seeks the development, evaluation and improvement of methodological instruments and strategies (Polit & Beck, 2011). The technology was the

product of the project developed by the Program of Technology and innovation in health of the State University of Amazonas, developed under the Laboratory of Technology in health and education-LABTECS, held in the period from August 2020 to March 2021, with the participation of four health professionals with university degree.

The study was conducted in three phases: integrative literature review, technology construction, and content validation.

### **Step 1-Integrative literature review**

An integrative literature review was carried out, which began with the definition of a problem and the formulation of the research question using for the elaboration of the problem/question the PICo strategy, acronym for Population, Interest, Context.

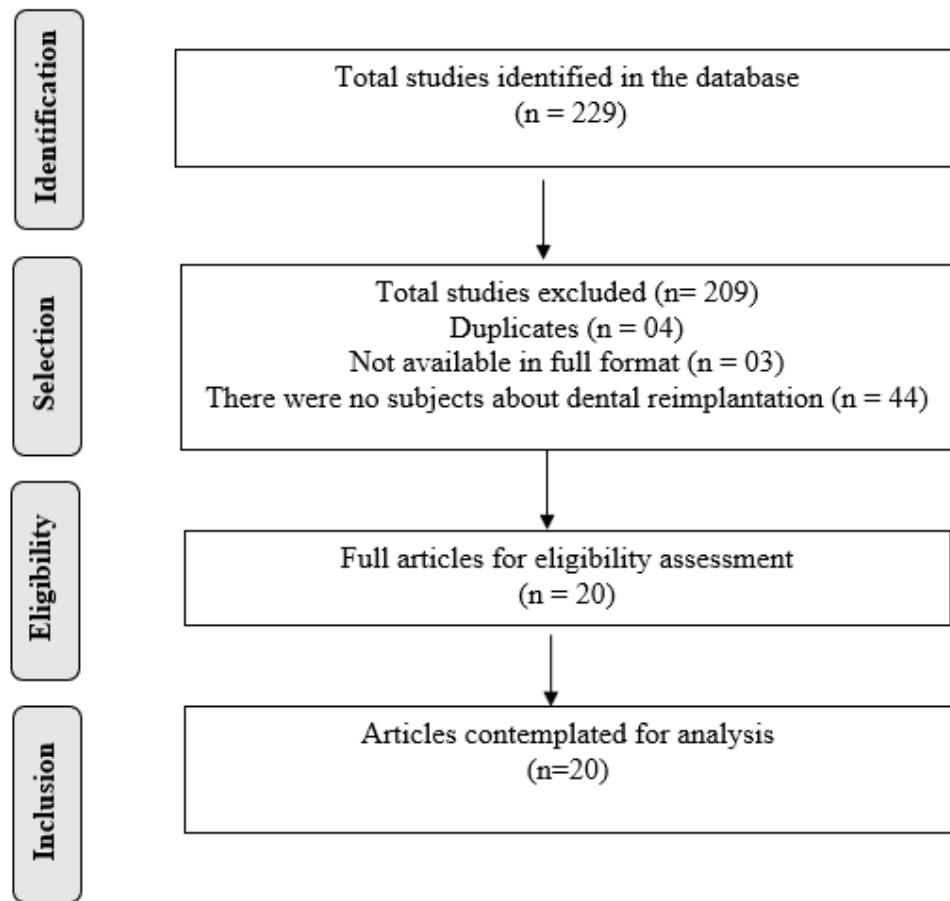
Thus, the question is: What level of knowledge that the Thus, the question is: What is the level of knowledge that dental surgeons have about dental replantation after tooth avulsion? have about dental reimplantation after a dental avulsion?

To answer the guiding question of the review, a search was performed through the Virtual Health Library (VHL), in the databases Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature in Health Sciences (LILACS) and National Library of Medicine (PubMed) by crossing the following controlled descriptors: (MESH) [Tooth Avulsion] and [Tooth Replantation].

Through these descriptors, we proceeded to analyze the studies, excluding those not consistent with the criteria and the proposal of the research, as well as repeated articles. The inclusion criteria were studies that suited articles with full text, articles that deal with the topic and published in the last 5 years (2016 to 2020).

After the process of filtering the studies, the analysis was used through the phases of research such as database survey, exploration of the material, selective reading verifying the adequacy of the article with the study theme. The selection of the articles was conducted in flowchart format with details according to the Preferref reporting Items for Systematic Review and Meta-Analyses (PRISMA) methodology. In this step, 229 publications were found for analysis, of which, after reading the abstracts, 20 articles were selected for reading in full. (Figure 1) presents the synthesis of the results obtained in each step:

**Figure 1:** Flowchart of the selection of articles for the study of Integrative review by PRISMA. Manaus-AM, 2021.



Source: Authors.

### Step 2 - Technology Development, editing and diagramming

Based on the exhaustive reading, the generating themes directly related to dental avulsion were listed, they were organized according to the frequency of citation in the articles and it was found that it was convergent with the themes that emerged in the first phase. The themes were developed and organized to select illustrations for each of the themes that helped in the construction of the podcast according to the guidelines of the International Association of Dental Traumatology (IADT) (2020). It was then built a Podcast called "*Al Dente*", developed in the myriad of audio recording and editing software, specifically in *Adobe Premiere®Pro CC 2020* version 2020, a microphone model *XO-MKF 03* with 11 minutes of duration.

### Step 3 - Content Validation

In this step, the content validation was carried out by expert judges. They were considered judges of the area of dentistry, dental surgeons with experience and degree of knowledge in the subject. Searches were carried out on the Lattes platform of the National Council for Scientific and technological development (CNPq) to verify the adequacy of possible participants to the inclusion criteria. Of the 11 judges initially chosen, 9 composed this survey. Specialists who did not comply with the deadline for acceptance stipulated by the researchers were excluded.

Through formal contact by e-mail, it occurred through an invitation letter exposing the reason why he was chosen, the purpose of the study and how his participation would be given. Those who agreed to participate were sent the free and informed consent form (TCLE) along with the content validation form. The instruments were sent in electronic form through

the Google form<sup>®</sup> creation application, being viewed and filled out online. For this purpose, the content validity Index (CVI) was used.

The expert judges received a version of the technology and the instrument containing the content validity index (CVI) using the Likert scale. The period of Return of the material ranged from 3 to 10 days. The Content Validity Index (CVI) was used, which measures the proportion or percentage of judges who agree with certain aspects of the instrument and its items. It initially allows analyzing each item individually and then the instrument as a whole (Pasquali, 2017; Suganya et al. 2017).

The study respected the determinations of Resolution No. 466/12 of the National Health Council. The project is part of the macro-project "development and validation of interactive technologies in health and education in human care innovation" approved by the Research Ethics Committee (CEP) of the State University of Amazonas under the numberº 3.574.288 and nº 15924919.6.0000.5016.

### 3 Results

The selected publications of the 20 articles to identify the level of knowledge of health professionals about dental reimplantation after an avulsion are described in (Chart 1).

**Chart 1 - Description of publications according to year of publication, authors, objective and findings. Manaus-AM, 2021.**

Year	Author	Objective	Result
2020	Rodrigues OF, Landim, KLG, Alves RT, Machado FC, Carrada CF	Evaluate the knowledge of health graduates about avulsion of permanent teeth.	When comparing the students of the programs of Dentistry, Nursing and medicine regarding the learning about avulsion of permanent teeth, the students of Dentistry had more knowledge about the subject, but in the practical experience it was considered low.
2020	Duruk G, Erel ZB	Evaluate the knowledge of general dentists and specialists on the management of avulsified teeth.	Pediatric dentists had better knowledge about dental avulsion, compared to other specialists in the dental area.
2020	Sen Yavuz B, Sadikoglu S, Sezer B, Toumba J, Kargul B	Investigate the knowledge and attitudes of general dentists about the emergency management of avulsified teeth.	The results show that many professionals had limited experience in the treatment of avulsified teeth.
2020	Aras A, Dogan MS	Assess the attitudes of emergency technicians, doctors and paramedics towards dental trauma and their levels of knowledge about the subject.	Doctors and paramedics did not have enough and accurate information about dentin trauma. The lack of knowledge about dentin trauma prevents rapid and accurate intervention in cases.
2019	Kariya P, Singh S, Bargale S, Shah S, Kulkarni N, Dave B	Evaluate the knowledge of general dentists about the emergency management of dental trauma that leads to avulsion in children.	The Discovery justifies the need for informative educational programs to update and increase dentists knowledge regarding emergency management of avulsified teeth
2019	Calle TP, Vélez KP	Determine the degree of knowledge about the management of dental avulsion of a representative group of dentists from the city of Cuenca, Ecuador.	Most of the participating dentists have insufficient knowledge about the management of dental avulsion, unlike the dentistry specialists of the surveyed population; the latter are clearly better able to control this lesion.

2019	Sari SA, Kowash M, Hussein I, Halabi MA	Evaluate the knowledge of nurses and physical education teachers about emergency management of traumatic dental injuries (TDIs) in schools and measure the impact of education on their knowledge.	There was a noticeable improvement in the general knowledge score on TDIs throughout the study, especially after the educational session. This improvement was observed and sustained.
2019	França AB, Neves ACS, Queiroz AF, Poi WR, Hidalgo MM	Evaluate the knowledge of dental surgeons from the city of Maringá, State of Paraná, Brazil, about the management of avulsified teeth.	They did not demonstrate good knowledge about the procedures to be adopted for the management of avulsified teeth. Misunderstandings regarding the appropriate method of storage and immobilization were observed.
2018	Bahammam LA	Evaluate the knowledge of emergency room doctors with different specialties, experience and hospital sectors for the management of avulsified teeth eight major hospitals in Jeddah, Saudi Arabia.	This study revealed that most emergency room doctors do not have the necessary knowledge to manage cases of dental avulsions.
2018	Zafar K, Ghafoor R, Khan FR, Hameed MH	Evaluate the knowledge of dentists in relation to the immediate management of dental avulsion.	The dentists interviewed had inadequate knowledge. Knowledge was significantly associated with the specialty and qualification of the dentist.
2018	Nagata JY, Góis VLA, Munchow EA, Albuquerque MTP	Investigate the effect of educational intervention in dental trauma among undergraduate students of a Federal University of Brazil.	The educational intervention demonstrated a significant positive impact on the knowledge of dental trauma emergency management among health students.
2018	Alaslami RA, Elshamy FMM, Maamar EM, Ghazwani YH	Assess awareness among dentists working in Jazan about their potential role in the treatment of traumatic dental avulsion injuries.	A statistically significant result was observed in relation to the best storage medium. Very important for successful reimplantation is the management of the tooth before reimplantation.
2017	Iver SS, Panigrahi A, Sharma S	Evaluate the knowledge and awareness of doctors and nurses about first aid in dental avulsion.	The results suggested a definitive inadequacy in knowledge.
2017	Mesquita GC, Soares PBF, Moura CCG, Roscoe MG, Paiva SM, Soares CG	Evaluated the epidemiological and management characteristics of cases of avulsion of permanent teeth attended in a dental trauma service from December 2005 to August 2016.	Several avulsified teeth were handled inadequately and immediate re-implantation was not frequent.
2017	Suganya M, Vikneshan M, Hiremath A	Evaluate the knowledge and awareness of active nurses and trainees regarding the emergency management of dental traumatic injuries.	The nurses evaluated have less knowledge than expected.
2017	Jokic NI, Bakarcic D, Grzic R, Majstorovic M, Sostarek M	Evaluate the knowledge of general medical students about treatment procedures in clinical cases involving dental injuries.	The study showed that medical students have very little knowledge about dental injuries. In addition, the vast majority of students were neither informed nor educated about it during their studies.
2016	Azmi M, Awooda E	Evaluate and compare the knowledge and practice of 2nd and 5th year dentistry students on the management of dental avulsion.	5th graders have knowledge considered sufficient in relation to 2nd graders.

2016	Silva BRC, Perazzo MF, Neves ETB, Firmino RT, Garcia AFG	Evaluate the effectiveness of an educational intervention in improving the level of knowledge about dental avulsion among non-dental health professionals of a medical emergency service in Brazil and the maintenance of this knowledge after a period of 6 months.	The educational intervention led to a significant increase in the number of correct answers regarding the measures to be taken in cases of dental avulsion.  The level of knowledge of professionals remained high 6 months after the lecture. However, there was a certain degree of insecurity regarding the ability to perform the reimplantation.
2016	Antunes LAA, Souza HMR, Gonçalves PHPQ, Crespo MA, Antunes LS	Evaluate the knowledge and attitudes of physical education students from public universities in the state of Rio de Janeiro, Brazil, regarding dental trauma and use of mouthguards.	Students do not receive such information during graduation, even having in their curriculum the discipline of First Aid.
2016	Baginska J, Rodakowska E, Milewski R, Borawska MW, Kierklo A	Evaluate the knowledge about first aid in avulsion of permanent teeth presented by Polish school nurses from different areas.	The evaluators lack training regarding the management of dental trauma cases. The Internet should be used to provide evidence-based knowledge to medical staff working in schools.

Source: Authors.

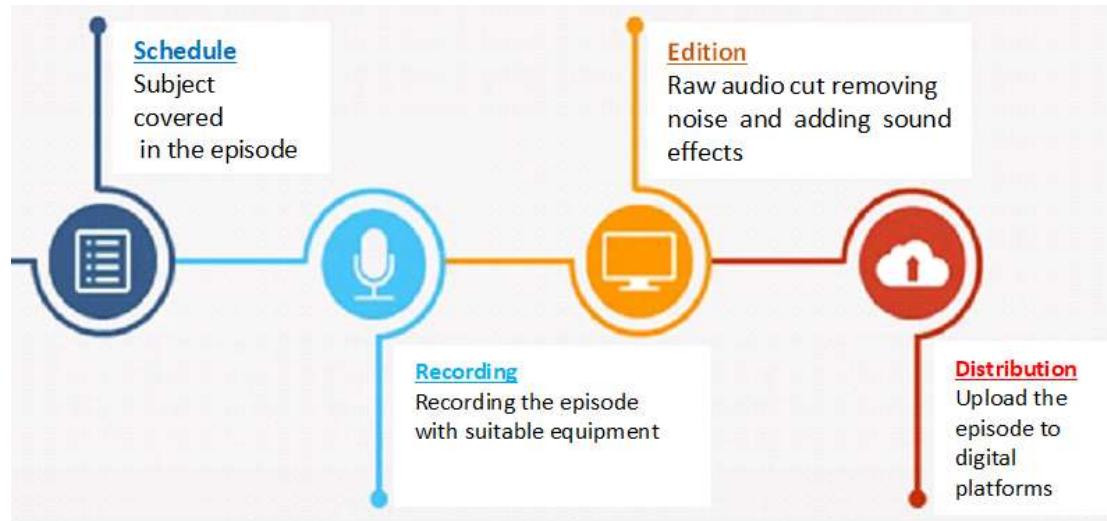
In the database researched, 229 articles were identified, of these, 20 were selected for the study, 11 (42%) involved the classes of dental surgeons (Alaslami, 2018; Azmi and Awooda, 2016; Calle and Vélez, 2019), 6 (23%) involved doctors or paramedics (Aras and Dogan 2020; Bahammam et al. 2019; Jokic et al. 2017), 7 (27%) were nurses or nursing assistants (Baginska et al. 2016; Iyer, Panigrahi and Sharma, 2017; Nagata et al. 2018) and 2 (8%) Physical Educators (Antunes et al. 2016; Sen et al. 2020). Some of them are students still in graduation.

The countries of origin of the studies were distributed as follows: 6 (30%) Brazil (Antunes et al. 2016; France et al. 2019; Mesquita et al. 2017), 3 (15%) Turkey (Aras and Dogan 2020; Duruk and Erel, 2020), 3 (15%) India (Jokic et al. 2017; Kariya et al. 2019; Suganya, Vikneshan and Hirebath 2017), 2 (10%) Saudi Arabia (Alaslami et al. 2018; Bahammam, 2018) and Croatia (Jokic et al. 2017), United Arab Emirates (Sen et al. 2020), Ecuador (Calle and Vélez, 2019), Pakistan (Viana et al. 2018), Poland (Baginska et al. 2016), Sudan (Azmi and Awooda, 2016) totaled 30% of studies with one article for each nation. All articles were published in the English language.

In relation to the year of publication, 4 articles were observed for each year of publication between 2016 and 2020.

Of these data presented, all are observational studies, with 19 cross-sectional and one retrospective studies, all aimed at investigating the knowledge about dental avulsion in first aid. Of all the articles reviewed, only three used educational intervention, showing the result of before and after the application of knowledge. About the steps to build the podcast were followed according to the phases of (Figure 2).

**Figure 2** - Characterization of the phases of the elaboration of the podcast called "Al dente". Manaus-AM, 2021



Source: Authors.

The podcast "*Al Dente*" had the first episode recorded in January 2021, with 11 minutes in length, with the idea of making it easier for listeners to understand. The software used was Adobe Premiere® Pro CC 2020 that made the audio organized and clear, removing overlapping voices and unnecessary parts until the final product. Finally, a cover was made for the media and baptized "*Al Dente*". With the phases:

*Schedule*: Definition of the agenda for the construction of the theme/episode approach;

*Recording*: Organization and execution of the episode with the appropriate equipment;

*Edition*: Trim raw audio for noise removal and sound insertion;

*Distribution*: Upload on digital platforms;

Nine expert judges participated in the validation phase, following four aspects: characterization of the judges, content, functionality and appearance.

The expert committee composed of nine judges, had *expertise* in the area of the content addressed, there was a predominance of males (66.7%) and training in surgery and Oral-Maxillofacial Traumatology (66.7%) and training time with more than 20 years of experience (55.6%). There was a tie with respect to the academic qualifications of doctors and Post-doctors (33.3%) each, followed by Master's degree (22.2%) and a specialist. On the *expertise* with the topic, the judges (100%) had works published in journals, (66.6%) had research projects involving the topic and (66.6%) had work in Congress, symposia or seminars.

The score of the index was calculated by means of the sum of agreement of the item “strongly agree” marked by the experts and divided by its total amount of answers (Table 1).

**Table 1** - Distribution of judges 'responses content validity of items by topics and individual podcast" *Al Dente* - Manaus-AM, 2021.

<b>Objective</b>	<b>n</b>	<b>%</b>
<b>Part I</b>		
1.1 The information / content is or is consistent with the daily needs of the target audience	9	0.99
1.2 Information is important for the quality of the work of the TE target audience	9	0.99
1.3 Invites and / or instigates attitude behavior change	6	0.66
1.4 Can circulate in the scientific environment of the area	6	0.66
<b>Total</b>		<b>0.82</b>
<b>Structure and presentation</b>		
<b>Part II</b>		
2.1 The educational Podcast is appropriate for the target audience	9	0.99
2.2 The context is presented clearly and objectively	7	0.77
2.3 The information presented is scientifically correct	8	0.88
2.4 The information is appropriate to the socio-cultural level of the TE target audience	8	0.88
2.5 There is a logical sequence of information	8	0.88
2.6 The title of the podcast "Al Dente" has coherence	6	0.66
<b>Total</b>		<b>0.84</b>
<b>Relevance</b>		
<b>Part III</b>		
3.1 The podcast "Al Dente" proposes the construction of knowledge	9	0.99
3.2 The context addresses the subject necessary for the knowledge of the TE target audience	9	0.99
3.3 It is suitable to be used by any TE target audience professional	9	0.99
<b>Total</b>		<b>0.99</b>

Source: Authors.

It was found that the item that evaluated the objective presented the CVI of 0.82%, structure and presentation 0.84% and the relevance of the technology with a score 0.99% which was desirable (Pasquali, 2017; Suganya et al. 2017), characterized by the high index of "strongly agree" among the *experts*, being the podcast "Al Dente" considered validated in its content.

Regarding the broad evaluation, all the experts evaluated the technology positively, the results showed the IVC of the objectives, the structures and presentation and the relevance obtaining content validity index of 0.88%.

In this sense, we concluded the validation of content with 13 items, throughout the validation process, and presented in the view of the *expert's* congruence with the literature.

#### 4. Discussion

The present study revealed that in different parts of the world, there is a concern with health professionals about the knowledge about dental avulsion and its correct conduct for reimplantation.

A study conducted in Brazil in 2020, when comparing the knowledge about dental avulsion among students of Dentistry, Nursing and medicine, dental students presented the highest percentage in all the questions evaluated, this is due to the fact that dental students have this information in their curriculum (Polit and Beck, 2011).

When analyzing the professional General Dental Surgeons in 2019 in Paraná, Brazil, they showed that they did not have good knowledge about the procedures to be adopted for the reimplantation of avulsified teeth (France et al. 2019). When comparing studies carried out in Istanbul, Turkey (Rodrigues et al. 2020), 142 dentists were evaluated and of these only 35% remember what to do in the face of a case of dental avulsion, which shows us the importance of continuing education programs.

Another evaluation with dentists carried out in Turkey, involving 400 general professionals and specialists, concluded that pediatric dentists had greater knowledge in the case, that of giving to the fact that it is the specialty that most studied cases of dental avulsion during their education in relation to other specialties (Duruk and Erel, 2020). There is a situation as in the study conducted with 143 dentists in the city of Cuenca, Ecuador in 2019, in which 42% reported having minimal knowledge about dental trauma and 74.8% of respondents are not familiar with the recommended IADT protocols for conducting dental trauma (Calle and Vélez, 2019).

Numerous articles conducted in different countries show doctors, paramedics, nurses, nursing assistants and physical educators, who do not have adequate knowledge about managing a dental avulsion emergency (Antune et al. 2016; Aras and Dogon, 2020; Baginska et al. 2016; Bahammam, 2018). Victims of oral trauma seek immediate care, at the scene of the accident or in hospitals and emergency rooms, which put these professionals in front of a line of action to provide the primary care of these cases.

Evaluating 150 doctors in different hospitals in Jeddah, Saudi Arabia, showed 79.5% of professionals, they thought it was possible to reimplant the avulsified tooth, however, 51.6% of them would not do it alone (Bahammam, 2018). This insecurity was shown in the other studies. In Turkey, 86.4% of the 389 doctors and paramedics interviewed did not receive any training on dental trauma, which corroborated that 75.6% believe that an avulsified tooth cannot be reimplanted (Aras and Dogon, 2020).

However, the research carried out involving the effect of an educational intervention on the subject, revealed a positive impact on the acquisition of knowledge about emergency procedures, especially in cases of avulsion. Educational programs should be developed for health professionals in order to encourage them to properly conduct an emergency episode of a dental trauma (Nagata et al. 2018; Sen et al. 2020; Sari et al. 2019).

In Brazil, the effectiveness of an educational intervention for doctors and nurses was also evaluated and led to a significant increase in the number of correct answers on the measures to be taken in these cases. In addition, the level of knowledge remained high six months after the lecture (Sari et al. 2019).

It is unquestionable that educational technologies should be built in order to provide information about dental reimplantation.

The content of the podcast was based on the recommended guidelines of the International Association of Dental Traumatology – IADT, which is a consensus document carried out by a group of international researchers, obeying scientific criteria, therefore guidelines with knowledge capable of subsidizing safe practices on the management of permanent avulsified teeth (Fouad et al. 2020).

As for the content validity Index (IVC), it was considered adequate by the experts without any correction, considering that they were given the right to general comments and suggestions at the end of each form. The content evaluated revealed a high CVI value, with an excellent level of agreement among experts, suggesting that the content has relevance in the subject of timely conduction after a dental avulsion in permanent teeth. The use of the CVI for *experts* in the area of the subject

addressed, has been carried out by researchers in the evaluation of technologies in several works found in other studies on educational technologies (Neto et al. 2019; Suganya, Vikneshan and Hirebath, 2017).

## 5. Conclusion

The results of the technology validated in three aspects of the objective, structure, presentation and relevance items after reaching a 99% CVI by the judges. These data show that technology with a focus on knowledge about the conduct of dental reimplantation in permanent teeth, is necessary for a successful prognosis.

Technological production can contribute to the reflection and decision making of the dental surgeon in the care practice in oral traumas.

As future perspectives, the dentist will be able to propose other technologies such as the podcast with didactic potential, facilitating and motivating learning in cases of dental traumatology.

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