

## Interprofessional learning in an undergraduate Dentistry course in the pandemic context of remote teaching

Aprendizado interprofissional na graduação em Odontologia no contexto pandêmico de ensino remoto (resumo: p. 19)

Aprendizaje interprofesional en la graduación en Odontología en el contexto pandémico de enseñanza remota (resumen: p. 19)

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This article aims to understand undergraduate dental students' perception of the motivations and meanings of interprofessional learning in the pandemic period of remote teaching at a public university in the South of Brazil. This qualitative research used the theoretical-methodological perspective of phenomenology of perception. The researchers conducted interviews and a documentary analysis of the portfolios of students who attended a teaching activity with a focus on remote interprofessional education (IPE) in the pandemic period. The experience was marked by interactions between students-teachers-professionals mediated by the use of digital platforms, and provided opportunities of development of collaborative skills. Inequalities in access to internet services and to devices suitable for remote teaching, personal-familial situations related to experiencing a pandemic, and difficulties in creating bonds were the reported barriers. IPE in settings of the Brazilian National Health System was perceived by students as essential for the training of health professionals.

**Keywords:** Education, Dental. Interprofessional Education. Interdisciplinary Placement. Education, Distance. Covid-19.



## Introduction

The pandemic caused by the novel coronavirus SARS-COV-2, the causative agent of Covid-19, affected the curricular activities of undergraduate dental programs. In most of them, in-person activities were totally suspended, emergency services were maintained, and theoretical activities were migrated to virtual environments<sup>1-4</sup>.

In the pandemic context, remote teaching enabled the continuity of classes, and teachers accepted and mastered the use of online learning tools. However, some barriers were identified. Students' difficulty in establishing a routine of studies while dealing with procrastination and mental healthcare, teachers' and students' organization of the time they had to dedicate to virtual activities, and access to electronic devices/high-quality internet service reduced learning and made students feel anxious and insecure<sup>1,5,6</sup>.

In the perspective of interprofessional education (IPE) – an educational opportunity in which students/workers from two or more professions learn together, in an interactive way, with the explicit purpose of improving collaboration and the quality of care provided for users-families-communities<sup>7</sup> –, initiatives carried out in practice settings of the Brazilian National Health System (SUS) are reported by the literature<sup>8-10</sup> and meet the social responsibility of education<sup>11</sup>. The pandemic brought the challenge of interaction to such initiatives, without the possibility of practice in the services. There was an adaptation to remote activities, using virtual learning environments. The continuity of teaching-service-community integration activities with an interprofessional focus allowed to put undergraduate students in contact with health teams, aiming to minimize physical distance, facilitate the understanding of the reality of the services, and create possibilities for a joint planning of health practices in the new format of interaction<sup>6,12</sup>.

This study aimed to understand dental students' perception of motivations and meanings regarding interprofessional learning in the period of Emergency Remote Teaching (ERT), during the Covid-19 pandemic, at a public university located in the South region of Brazil. Motivation is understood here as a preparatory psychological process of activation and orientation of human action. It involves cognition, but it also includes an important affective-emotional component<sup>13</sup>.

## Methodology

This qualitative research<sup>14</sup> used the theoretical-methodological perspective of phenomenology of perception.<sup>15</sup>

## Studied phenomenon

The studied phenomenon was the experience embodied in the teaching activity (discipline) with a focus on IPE, offered by a public university located in the South of Brazil, and carried out in Primary Health Care (PHC) practice settings. It brings the 'absolute source' perception of those who experience the phenomenon<sup>15</sup>: dental students.



The activity has been offered since 2012 and is characterized as an elective curricular component of the Dentistry course. The total number of hours is 60 (4 hours per week). Every semester, each course offers four seats to its students. For the seats to be offered, a teacher from the course must be part of the activity's group of teachers. It is organized in activities performed in tutorship groups (2 to 3 teachers-tutors and 8 to 10 students from different courses) and theoretical activities (tutorship groups together)<sup>16-18</sup>. The theoretical-methodological framework is that of problematization and assessment of the process-product of the experience<sup>19</sup> with a focus on IPE. Three thematic axes (contents) are studied: 1. Territory/territorialization, environment and health; 2. Education and collaborative work in the health area/collaborative competencies/teamwork process in PHC; 3. Healthcare centered on people-families-community. The National Primary Care Policy is a content that is present in the three axes<sup>16-18</sup>.

Assessment is continuous and formative. The individual portfolio<sup>20</sup>, with partial and final deliveries - which can be in the physical or virtual format, posted on the Moodle virtual learning environment (VLE) -, is the instrument used to monitor students' knowledge construction process, learning, and challenges. The tutor is responsible for monitoring the student during the teaching activity. They should stimulate dialog and interaction in the group and promote the problematization of experiences; in addition, they must read and provide feedback on the portfolio<sup>16-18</sup>. Instructions for the construction of the portfolio include aspects related to text structure (adequate language, synthesis skills, ethical-critical argumentation, organization of experiences, presentation of the theoretical framework with quotes and References) and to the selection, register, and analysis (theory-practice relationship) of the most significant productions, challenges related to the object of study, and ways to overcome them. Students are expected to connect such aspects with knowledge deriving from their profession and from the other professions<sup>20</sup>.

Up to 2019, the period before the pandemic, tutoring activities composed 80% of the number of hours and were practices conducted in the PHC services of SUS. Interaction with the team and with people-families from the territories were present. In March 2020, with the suspension of in-person activities and the regulation of ERT in the University<sup>21</sup>, the IPE activity was suspended and underwent a process of pedagogical restructuring so that it could be offered, in 2021, in the remote modality. In this period, the University offered to the faculty a set of qualification activities targeted at the utilization of virtual pedagogical resources for ERT, which supported the development of the teaching plan. The activities were organized as synchronous (virtual platforms provided by the University: Teams, Meet, Mconf - 70% of the number of hours) and asynchronous (readings/tasks available in the Moodle VLE - 30% of the number of hours). Synchronous tutorship moments were maintained, preserving the logic of conversation circles for discussion and exchange of experiences, perceptions and knowledge by the professions<sup>22</sup>. Theoretical meetings (synchronous) included contents on 'Telehealth in PHC' and 'Interprofessionality and collaborative work in situations of global disasters'. Some of the synchronous meetings had the participation of management professionals (Coordinators of the Teaching-Assistance District Management - GDDA) and PHC teams (community health workers, nurses, dentists, and Collective Health residents).



These workers participated in the planning and development of synchronous activities to present GDDA and the working process in PHC (territory, team, work context in the pandemic, SUS network).

During the ERT, students from 15 undergraduate programs participated in the teaching activity. The courses of Biomedicine, Physical Education, Medicine, and Public Policies could offer seats without the presence of the course teacher<sup>22</sup>. Frame 1 presents the constitution of the tutorship groups by profession.

**Frame 1.** Composition of the tutorship groups in ERT by professions.

Tutorship groups	Professions
Group 1	Biological Sciences, Physiotherapy, Speech-Language Pathology and Audiology, Dentistry, Psychology, Collective Health, Social Work
Group 2	Biomedicine, Nursing, Physical Education, Pharmacology, Physiotherapy, Veterinary Medicine, Nutrition, Dentistry, Psychology, Public Policies, Collective Health, Social Work
Group 3	Biological Sciences, Physical Education, Nursing, Pharmacology, Physiotherapy, Speech-Language Pathology and Audiology, Veterinary Medicine, Nutrition, Dentistry, Psychology, Collective Health
Group 4	Biomedicine, Physical Education, Nursing, Pharmacology, Physiotherapy, Speech-Language Pathology and Audiology, Nutrition, Dentistry, Medicine, Veterinary Medicine

Source: The authors.

## Participants

All the dental students who completed the IPE teaching activity in 2021, in the ERT period, were invited to participate in the study (n = 5). Three students were in different tutorship groups, and two belonged to the same group. If any of the students were on leave, had suspended their enrolment, or had dropped out of the course, they would have been excluded.

Dental students' participation in the study is justified by the following facts: it is one of the professions that make up the PHC teams, the dental course has been present in the activity investigated here since 2012, and the revised text of the Dentistry Curricular Guidelines<sup>23</sup> recommends that the dentist must be a professional who is able to work in teams, in an interprofessional way.

## Data collection and analysis

Data collection was performed between July and December 2021, when the students had already completed the remote IPE activity.

The corpus of analysis was composed of online semi-structured interviews and the students' portfolios. The interviews were scheduled according to the students' availability and conducted on the University's Mconf platform. They lasted 45 to 55 minutes, were



conducted by a single researcher with experience in qualitative research, recorded and subsequently transcribed. The interviews' script had been previously evaluated by the research team when they interviewed a student who had completed the teaching activity. This student was not part of the study's sample (Frame 2). The transcriptions were sent to the students for approval and complementation of ideas. The research team discussed whether the textual material that was produced was sufficiently dense to fulfil the research objective and, upon confirmation, finalized the data collection stage.

The material was interpreted through content analysis<sup>24</sup>. In the pre-analysis stage (organization), the free-floating reading - inductive and open - enabled the research team to have the first contact with the data. Then, the material was classified and coded as emerging themes (units of registration). Similar themes or themes that complemented one another were gathered and generated categories of analysis<sup>24</sup>. To protect the secrecy of information about the research participants, a sequential order was coded for interviews (E1 to E3) and portfolios (P1 to P5).

**Frame 2.** Guiding questions in the interview script.

Thematic axis	Information
Attending the IPE activity in the ERT period	Interest/motivation/expectations regarding the IPE activity
IPE activity in ERT	Studied contents Pedagogical strategies Experiences
Strengths of and barriers to IPE in ERT	Meanings/learnings for dentists' education Barriers to IPE in ERT

Source: The authors.

### Ethical considerations

The research was approved by the Research Ethics Committee of the University that participated in the study (Opinion #3.585.711).

### Results

Three students were interviewed and five portfolios were analyzed. Two students decided not to participate in the interviews.

Three categories emerged from the analysis of the interviews and portfolios, with a focus on the dental students' understanding of motivations and meanings regarding interprofessional learning in the ERT pandemic period.



## **Waking to IPE: Interest in interaction and learning between professions based on the mobilization of knowledge about teamwork and comprehensive care**

The students' interest in participating in the IPE activity was influenced by the recommendation of classmates from the Dentistry course, family members who were attending another undergraduate course, and course teachers.

A classmate who had attended it posted on the class group that she recommended it, as the experience was good. That got everyone in the mood to attend it. [...] my nephew had already attended it too, in the Veterinary Medicine course. (E1)

[...] my classmates who'd already attended it told me about it. The Dentistry teacher also recommended it. Many people from all courses want to attend the discipline, including me. (E3)

Such recommendation brought positive perceptions of practices performed in PHC services that the students considered motivational, despite being aware of the limitation imposed on such practices during ERT.

[...] I heard many classmates praising the functioning of the discipline, everything the discipline taught, the learning that they put into practice. So, I decided to attend it, even though it was offered in the ERT format and I knew it wouldn't offer the same practical activities that it used to. (E2)

The proposal of students, teachers and professionals interacting and learning together, and the mobilized themes about teamwork and comprehensive care aroused the students' interest, as they understand the importance of IPE activities in the undergraduate course.

I've always thought that the interdisciplinary-interprofessional-multiprofessional part, the intertwining between areas, is very important for our education. The learning provided by the IPE activity related to the comprehensive view of health - that's what motivated me. We must know how to work with other professionals. (E1)

What motivated me was the teamwork. All of us, health students, working together with professionals. (E3)

Health professionals should have practices in the services since the first semester, to experience the daily routine, feel confident, and master the knowledge and skills to become an experienced professional. (P5)



When the students talked about the Dentistry curriculum, they expressed their perception of the distance between health courses, in view of the diversity of professions represented in the interprofessional teaching activity.

The Dentistry course does not promote many exchanges. It has its own building and academic week; there is no exchange with other courses, not even in the corridors. The diversity presented by the IPE discipline is not only important; it is something new in my education process. (P1)

The offer of this teaching activity in the ERT format also enabled working students, whose availability to in-person activities at PHC Units is limited, to attend it. It became a facilitator for these students.

I wanted to attend the discipline before the pandemic/ERT, but I didn't because I knew I'd have to be available to this in-person activity every week. [...] remote teaching influenced me. I waited to attend it in a period when I could reconcile the course with my work. (E1)

### **IPE mediated by information and communications technologies (ICTs): A 'teaching while learning' construction through collaboration**

According to the dental students, participating in the IPE activity in the remote format, with interaction between different actors in the synchronous moments - connecting University and health services - and theoretical support from the recommended readings and virtual forums in the asynchronous moments (Moodle activities), stimulated the development of concepts.

In the online meeting with the district manager and residents, they presented the characteristics of the territory - population and its peculiarities, services, Health Units, the primary care network of the management, mortality rate and diseases, management's situation in facing the Covid-19 pandemic. [...] It was an important activity in which we learned about the reach of the SUS network. (P1)

The teachers brought a case for us to discuss the concept of territory. [...] I found it very interesting and interactive; it made me experience the situation. Together with the reading of articles, it generated many discussions about the definition of territory and its importance for the individual, as it is much more than merely a physical place. (P2)

New learnings emerged from the data concerning "territory/territorialization" (E1, E2, P1, P2), "care network in the SUS" (E1, P1), "multiprofessionality and interprofessionality" (E1, E2, P1, P2, P4), functioning dynamics of the Health Unit (E1, E3, P5), "catastrophes/disasters" (E1, E2, E3, P1, P2), and "telehealth/teleservice" (E1, E3, P1, P2).



[...] we developed concepts and learned more about the definition of territory and its importance. [...] We learned about teleservice and disasters, where each profession plays an important role: physicians, psychologists, physiotherapists, dentists, nutritionists. (P1)

[...] to me, the concepts of multiprofessionality and interprofessionality were the most important ideas in this discipline. Telehealth and remote consultations opened up a wide range of opportunities that were not possible before. (P2)

To the students who were attending the final year of the course and carrying out curricular internships in the SUS, this knowledge enhanced learning.

I was attending the curricular internships in ERT and their contents followed basically the same paths and dynamics of the IPE activity, which was very good. [...] contents about SUS, the routine of a Health Unit, teamwork, territorialization, interdisciplinarity, accidents and what each area does when emergencies like the pandemic happen. [...] I used these activities and contents in the internship. (E1)

Students' participation and dialog with Teaching-Assistance District Managers, PHC residents and professionals in synchronous moments enabled them to learn about teamwork functioning/routine in PHC. The students were touched by these professionals' reports on their experiences during the Covid-19 pandemic.

[...] learning about the Health Unit involved with the Covid cases was interesting, as well as hearing their reports on the loss of people from the team itself. They were all very emotional. I was really touched when I heard their reports on how vaccination was being conducted and on changes in the way of hiring PHC professionals. (E1)

It shows PHC to the undergraduate student, as well as its functioning and teamwork. Things that we don't experience in our courses, mainly in Dentistry, which works alone most of the time. Even in the internships, we wouldn't have the interprofessionality that the discipline offers. (E2)

[...] the virtual meetings made me understand, in a very motivating way, the daily routine of the Health Unit and the importance of this place for the entire community. (P2)





[...] with the pandemic, we saw changes in concepts, strategies, (new) protocols and number of hours, as well as the overload of all the professionals involved, not only those in PHC. [...] The changes encompassed the control of their emotions, modifications in the routine, the need to adapt to new strategies, accumulation of functions, and provision of assistance for an increasing number of patients. (P5)

Although face-to-face meetings and practical activities in PHC were suspended, interaction/integration relationships and collaborative teaching-learning between different professions could be constituted in the remote IPE experience.

The IPE discipline brings, all the time, the need to integrate the areas that involve the patient's life: socioeconomic, psychological, physical conditions, family history. There is no better word to express the knowledge that the discipline brought than comprehensiveness. We must see the patient as a complex and unique being, and the care we provide must encompass that comprehensiveness. (P1)

Through the discussions, it was possible to learn about each profession's view and experience, which contributed to improve my understanding of interprofessionality. (P2)

Groups created in a messaging application, voice calls (WhatsApp), the collective construction of the final essay on the meanings of the teaching activity, and the synchronous tutorship meetings led by teachers-tutors who stimulated students' participation were pedagogical strategies that facilitated communication, exchanges, and learnings.

[...] we had a WhatsApp group and we talked to each other all the time. We posted there questions about the courses, the discipline, or about our day. [...] I could see how Dentistry works with other professionals and that everybody needs to be together. (E3)

[...] I managed to interact with other professions, [...] participating, speaking and opening the camera. [...] we could interact a lot [...]. (E1)

[...] there was a very good activity in the first class, in which we learned a bit about the other professions, how one complements the other, and the relationships that we could establish. [...] I found out that these areas can communicate with one another much more than I thought. Some classmates were from other courses and the exchange we had in the group was very fruitful. We didn't see the time passing. (E2)



Teaching in tutorship groups, marked by exchanges, conversations/dialogs/discussions, hearing, participation, and respect for differences caught the students' attention. They perceived it as a 'teaching while learning' methodology, different from what they experienced in the Dentistry curriculum.

I liked the format of tutorship groups and our conversations and exchanges; it was something that seemed to be informal although it was formal. My group had teachers from the areas of Physiotherapy, Nursing and Nutrition, three professions different from mine. We learned and taught without noticing it. [...] it's something that is very different from what we have in Dentistry - we go to the class, sit down and just hear the lesson. We assist the patient by ourselves and each one of us leaves at a different time. No one sits together to discuss anything. When we do, it's always something related to a seminar, 'rigid', 'inflexible'. The fact that the discipline developed more 'freely' was very cool. (E2)

[...] Even with all the difficulties related to having remote classes, we had the opportunity of learning about other kinds of knowledge, hearing the other, seeing the other, knowing more about their area of activity, being encouraged to participate in the class, being understood by the group. This was a very productive exercise of acceptance of differences and exchanges. (P3)

[...] there was the moment for group discussion, in which each student contributed the experience of their area/course. The contact with different health professionals is the main axis of the discipline, even more so to me, a Dentistry student who remained isolated inside the dental world during the whole course. (P1)

[...] we formed a complete interprofessional team, capable of interacting and hearing how one profession could collaborate with the other. (P4)

Situations of learning with classmates from other courses were the highlight of the experience.

We visited the territory through Google Maps and a classmate from the area of Biology talked about plants and gardens, and commented on the potential of each region. This caught my attention. (E1)

The relationship between IPE and care centered on the needs of people-patients was reiterated in different moments of the students' narratives, as they recognized and strengthened the value of interprofessional communication and learning with and about other professions to avoid professional stereotypes and provide comprehensive care.



I learned that we needn't and shouldn't learn by ourselves; we need to have a network of support and contacts not only within our profession of dentists. [...] The contents enabled us to learn about teamwork and the importance of the dialog with other professions, things that are not covered in our course. Sometimes, we completely ignore the other professions and how they can help us. [...] many times, we graduate thinking that we're going to care for teeth, but we won't, we're going to care for people. (E2)

Having had the opportunity to hear so many stories and debate with the group the importance of our future professions and how we can work together (or how one complements the other) opened my eyes (or my ears?) to the importance of interprofessional dialog for us to offer our best to our patients. (P4)

The IPE discipline was very rich to my education as a health professional. It brought knowledge from diverse professional areas and made me more attentive to the comprehensiveness and complexity of healthcare and to patient diversity. [...] Dentistry is still very technical [...] it seems to me that, during the clinics, we lose empathy and humanity in the assistance [...]. (P1)

The students were able to relate interprofessional learnings to their specific practices, applying them to their profession.

[...] I assisted a 32-year-old patient, a depressed crack user who lived in a slum and had a daughter. No matter how many times I intervened [...] in the following week he returned with plaque buildup and his injuries were worse than before. To me, it was fundamental to understand that this patient had needs that were much greater than his oral health. [...] It is obvious that we cannot neglect oral health, but working together with Psychology would increase this patient's chances of adhering to the dental treatment. Integrated work was really necessary to this patient because, apart from his dental needs, there was a history of social-psychological-nutritional problems. A qualified multiprofessional team would be able to provide comprehensive care for this patient. (P2)



## Living and studying in a pandemic period of remote teaching: Virtual interaction as a challenge to IPE

The situation of living and studying in a pandemic period was frequently present in the students' reports. Aspects like "difficult moment" (E1)/"tense moment" (P4), "the stress and anxiety that many people feel after a disaster" (P2), "life that stopped", the "losses" with ERT (P1), and "having Covid" (E2) dialogued with the opportunity of "experiencing interprofessionalism" (P4) and seeking "knowledge on our own" (P1), bringing "guidance" to students (E1) and "comfort and hope that better days will come" (P4).

The pandemic also aroused, in the students, the perception that teamwork and interprofessional learning must be present in the dentist's education.

In the pandemic, teamwork was, more than ever, essential to mitigate problems deriving from this scenario. [...] strengthened the importance of interprofessional learning starting in the undergraduate course and continuing throughout the professional's entire life. I believe that this discipline seeks to transmit precisely this learning, and effectively provides the knowledge necessary for teamwork. (P2)

In spite of the recognized gains, ERT was challenging. Barriers to "access to good internet services and high-quality electronic devices (computer/mobile phone)" (E1) revealed social inequalities among students from different courses. The disease and deaths that occurred in the period also affected students' performance and learning.

[...] the camera doesn't work, there are internet shutdowns and power outages, the computer won't start, unfortunately we're all subject to these difficulties. I had Covid and one of the strongest symptoms was sleepiness. [...] I attended a class lying down on my bed because I couldn't manage to sit down, I was too tired. (E2)

[...] brings social inequalities to the surface. To many students who do not have favorable financial conditions, ERT ends up being a problem, due to issues like the need to share computers and lack of internet access. (P1)

A friend of mine and one of my neighbors died, and I was very upset. On those days, I attended the classes, but I didn't pay much attention. The classes were happening in a period that saw a peak in deaths, it was a very difficult moment for everybody. (E1)

The creation of bonds in the tutorship group was a barrier observed in the ERT period.



[...] the communication we had during classes was very good, although we couldn't create a bond, which is something that the IPE activity used to enable in the practical activities. In the remote modality, the creation of bonds was hindered. (E2)

In the end, the students recognized the importance of in-person teaching in the IPE activities, as it promotes contact with patients, experiences in healthcare spaces, and face-to-face exchanges.

I don't believe remote teaching will replace the need of in-person teaching, especially in the area of health, where contact with patients, the daily routine in care environments, and face-to-face exchanges are fundamental to the construction of the health professional. (P1)

## Discussion

Human experiences, mainly in periods of crises like the one generated by the Covid-19 pandemic, have the potential to re-signify practices, worldviews, prejudices, values, symbols, and to produce educational reflections and changes in pedagogical actions<sup>25</sup>. Without the possibility of practical activities, the remote, 'emergency' teaching imposed on this context allowed the continuity of the health education process, instigating theoretical-conceptual discussions about the theme of distance education/remote teaching, and showing the need to analyze what was experienced<sup>25,26</sup>.

This study contributes to the understanding of motivations and meanings, expressed by dental students, regarding the perceptual and embodied experience<sup>15</sup> of a remote IPE activity in the pandemic period. The participants had to adapt to the separation of the physical-geographical-corporal space in the meetings between people. In addition, there was an expansion of the use of ICTs in higher education, which required a speedy appropriation by teachers and students.

Although the students recognized the importance of in-person education within practice settings of SUS, they were receptive and willing to learn, which enabled them to experience<sup>27</sup> interprofessionalism during ERT. The flexibility of the teaching and learning process enabled by the remote modality<sup>4</sup> motivated the working students and allowed them to attend the IPE activity.

To students included in a curriculum whose pedagogical strategies not always enable dialectical moments, the interaction promoted in the tutorship groups, whose focus is not the content itself, but the process of collective knowledge construction<sup>20</sup>, was one of the most prominent findings. In the perspective of dialectics<sup>20</sup>, students are given the opportunity of acquiring information and developing competencies based on interaction and exchange of ideas with classmates from different courses, teachers and health professionals, considering the personal and societal context in which they live<sup>28</sup>.



Competency is understood as the students' capacity to mobilize knowledge-skills-attitudes, using the available resources, in favor of initiatives and actions expressed in performances that are able to meet the challenges of professional practice, in different contexts of health work<sup>23</sup>.

It is in this space of tutorships - marked by a diversity of professional knowledges and life histories - that students and teachers share responsibility for 'learning to learn' and develop respect for differences, autonomy in knowledge construction, and critical capacity<sup>4,29,30</sup>. The teacher, playing the role of the tutor who is responsible for facilitating learning in the virtual space, must deal with the challenges of understanding their own teaching process and learning to dialog and interact in the ERT context mediated by ICTs. Therefore, the tutorships promote learning situations in which students and teachers are involved in the learning process<sup>20,31</sup>.

The development of collaborative competencies, which improve the relationships between different professional categories in the dynamics of health work - especially those related to interprofessional communication and care centered on the person-patient<sup>7,32</sup> - was one of the learnings identified in this study. Students problematized the applicability of interprofessionality to their clinical action as dentists. Thus, the IPE activity became an experience that marked them, touched them, and made sense in their education<sup>27</sup>.

The mobilized contents about territory/territorialization, care network in the SUS, multiprofessionality and interprofessionality, functioning dynamics of the Health Unit, catastrophes/disasters, and telehealth/teleservice triggered new learnings and were connected with the obligatory curricular contents of Dentistry. The presence of managers, residents, and professionals from PHC teams in pre-established synchronous moments was a strategy that facilitated the students' understanding of the reality of the services, teams, and needs of people-families-communities in the pandemic period<sup>6,12</sup>. Students attributed meanings to the activity contents, based on their articulation with previous curricular knowledge, thus establishing a meaningful learning process<sup>33</sup>.

Barriers emerged and need to be discussed. The utilization of ICTs in the investigated IPE activity was marked by inequalities concerning internet access and adequate electronic devices to remote teaching, as well as personal fragilities associated with the pandemic, which affected students' participation and learning. The limitations concerning the creation of bonds in the tutorship groups and in activities involving teams with/in the community were also barriers to the development of IPE in ERT.

The results obtained in the experience of remote interaction between professions reinforce the students' positive attitudes towards interprofessional learning<sup>8-10,34</sup>, complementing and strengthening contents of the Dentistry curriculum, especially those related to comprehensive care and care centered on the needs of people-patients<sup>7,8</sup>. Such results reveal the power of IPE initiatives that approach the role of different health professions, since the beginning of the undergraduate course, to reflect on and provide comprehensive care, and to reduce stereotyped views among health professions<sup>7,8,35</sup>.



Synchronous ERT moments preserved the possibility of learning through interaction and stimulated collaborative practices between professions, centered on patients-users-families<sup>36,37</sup>.

However, IPE is characterized by shared and interactive learning, according to its conception and definitions<sup>7</sup>. In the present study, the dental students reported learning losses due to the impossibility of interactive practices involving professionals-students-teachers-users, and IPE is not an experience characterized as distance education.

The limitations of this study intertwine with the very characteristic of IPE in the curriculum of the Dentistry course. As it is an elective teaching activity, that is, not obligatory and with a restricted offer of seats to each course, the analysis of the IPE experience during ERT involved a small number of students. Although the number of participants can be interpreted as a limitation, the richness of the empirical material enabled us to understand the meaning that students attribute to this IPE experience. Limitations concerning the utilization of portfolios as instruments to assess the teaching activity were not observed. The pedagogical mediation of the teacher-tutor with the student, with feedback on the partial delivery of the portfolio, strengthened the assessment proposal and was another interaction device between teacher and student.

## Final remarks

The teaching activity of undergraduate health programs with a focus on IPE, carried out in the ERT period, was marked by interaction between students, teachers, and professionals from different areas, mediated by the use of digital platforms. The activity provided learning processes related to how to work in a team, and promoted the recognition of the importance of learning with/about other professions, interprofessional communication, and care centered on patients-users-families. Inequalities in access to internet services and to adequate ERT electronic devices, personal-familial situations related to experiencing a pandemic, and difficulties in creating bonds were the reported barriers. The inclusion of themes connected with the pandemic context, like telehealth/teleservice, was a gain that can/must be added to the activity upon return to the in-person modality.

Although the results showed contributions from ERT, IPE associated with in-person activities in practice scenarios of SUS was perceived by dental students as essential to health professionals' education. The face-to-face experience promotes contact with people-patients and interaction in healthcare spaces, and cannot be replaced by synchronous or distance education activities.



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### **Conflict of interest**

The authors have no conflict of interest to declare.

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Este artigo tem por objetivo compreender a percepção dos estudantes de Odontologia sobre motivações e significados do aprendizado interprofissional no período pandêmico de ensino remoto, em universidade pública do Sul do Brasil. Trata-se de pesquisa qualitativa que utilizou a perspectiva teórico-metodológica da fenomenologia da percepção. Foram realizadas entrevistas e análise documental dos portfólios dos estudantes que vivenciaram a atividade de ensino com foco na educação interprofissional (EIP) remota, no período pandêmico. A experiência foi marcada por interações mediadas pelo uso de plataformas digitais entre estudantes, professores e profissionais, oportunizando o desenvolvimento de competências colaborativas. Desigualdades no acesso à internet/equipamentos adequados ao ensino remoto, situações pessoais familiares relacionadas ao viver uma pandemia e dificuldade de criação de vínculos foram barreiras relatadas. EIP vivenciada em cenários de prática do Sistema Único de Saúde (SUS) foi percebida pelos estudantes como essencial à formação dos profissionais da saúde.

**Palavras-chave:** Educação em odontologia. Educação interprofissional. Práticas interdisciplinares. Educação a distância. Covid-19.

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El objetivo de este artículo es comprender la percepción de los estudiantes de Odontología sobre motivaciones y significados del aprendizaje interprofesional en el período pandémico de la enseñanza remota en una universidad pública del Sur de Brasil. Se trata de una investigación cualitativa que utilizó la perspectiva teórico-metodológica de la fenomenología de la percepción. Se realizaron entrevistas y análisis documental de los portafolios de los estudiantes que experimentaron la actividad de enseñanza con enfoque en la educación interprofesional (EIP) remota, en el período pandémico. La experiencia estuvo marcada por interacciones mediadas por el uso de plataformas digitales entre estudiantes-profesores-profesionales y abrió oportunidad para el desarrollo de competencias colaborativas. Las barreras relatadas fueron las desigualdades en el acceso a internet/equipos adecuados a la enseñanza remota, situaciones personales-familiares relacionadas a vivir una pandemia y la dificultad de creación de vínculos. La EIP vivida en escenarios de práctica del Sistema Único de Salud fue percibida por los estudiantes como esencial para la formación de los profesionales de la salud

**Palabras clave:** Educación en odontología. Educación interprofesional. Prácticas interdisciplinarias. Educación a distancia. Covid-19.