

Collaborative learning process between residents and undergraduate Dentistry students at a university hospital in Curitiba


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Abstract With the recognition of the Hospital Dentistry practice, its approval as a new specialty by the Federal Dental Council in 2023 and validation of the new National Curricular Guidelines for the Dentistry Course approved in 2021, undergraduate Dentistry courses in Brazil tend to qualify future professionals in training to work in a hospital environment, in a systematic manner. This aims to provide students with an interprofessional experience inherent to hospitals, favoring the positive interaction between various health specialties. This descriptive study reports the experience in the collaborative learning process between health professionals residents of the Multiprofessional Residency Program in Elderly Health in the professional area of Dentistry at a University Hospital in Curitiba, and undergraduate Dentistry students from a higher education institution in Curitiba. During the development of different academic activities, it was observed that the use of this teaching-learning methodology was characterized as an important tool, seeking to strengthen the exchange of practical experiences, promoting discussions between students and resident professionals, by the mediation of professors, who always encourage the construction of critical reflective knowledge, providing an expanded interprofessional student training experience.

Descriptors: Dental Staff, Hospital. Interprofessional Education. Interdisciplinary Placement.

Proceso de aprendizaje colaborativo entre residentes y estudiantes de grado de Odontología en un hospital universitario de Curitiba

Resumen Con el reconocimiento de la práctica de la Odontología Hospitalaria y su aprobación como nueva especialidad por el Consejo Federal de Odontología en 2023, y la validación de las nuevas Directrices Curriculares Nacionales para la Carrera de Odontología aprobadas en 2021, las carreras de pregrado en Odontología en Brasil tienden a capacitar a los futuros profesionales en formación para trabajar en el entorno hospitalario, de forma sistemática. Se pretende proporcionar a los estudiantes una experiencia interprofesional inherente a los hospitales, favoreciendo la interacción positiva entre las diversas áreas de la salud. Este estudio descriptivo tiene como objetivo relatar la experiencia en el proceso de aprendizaje colaborativo entre profesionales de la salud residentes en el Programa de Residencia Multidisciplinaria en Salud del Adulto Mayor, en el área profesional de Odontología, en un Hospital Universitario de Curitiba y estudiantes de pregrado de la carrera de Odontología en Curitiba de una institución de educación superior. Durante el desarrollo de diferentes actividades académicas, se observó que el uso de esta metodología de enseñanza-aprendizaje se caracterizó como una herramienta importante, buscando fortalecer el intercambio de experiencias prácticas, promoviendo el debate entre estudiantes y profesionales residentes, a través de la mediación de los docentes. que siempre buscó incentivar la construcción de conocimientos reflexivos críticos, brindando una experiencia ampliada de formación interprofesional de los estudiantes.

Descriptor: Personal de Odontología en Hospital. Educación Interprofesional. Prácticas Interdisciplinarias.

Processo de aprendizagem colaborativa entre residentes e estudantes de graduação em Odontologia em um hospital universitário de Curitiba

Resumo Com o reconhecimento do exercício da Odontologia Hospitalar e sua aprovação como uma nova especialidade pelo Conselho Federal de Odontologia em 2023, e validação das novas Diretrizes Curriculares Nacionais para o Curso de

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Odontologia homologadas em 2021, os cursos de graduação em Odontologia no Brasil tendem a qualificar futuros profissionais em formação para atuar em ambiente hospitalar, de forma sistematizada. Isso visa propiciar aos estudantes uma vivência interprofissional inerente aos hospitais, favorecendo a interação positiva entre várias áreas da saúde. Este estudo descritivo tem como objetivo relatar a experiência no processo de aprendizagem colaborativa entre profissionais de saúde residentes do Programa de Residência Multiprofissional em Saúde do Idoso, na área profissional de Odontologia, de um Hospital Universitário de Curitiba e estudantes de graduação do curso de Odontologia de uma instituição de ensino superior. Durante o desenvolvimento de diferentes atividades acadêmicas, observou-se que a utilização desta metodologia de ensino-aprendizagem caracterizou-se como uma ferramenta importante, buscando fortalecer as trocas de vivências práticas, propiciando discussões entre estudantes e profissionais residentes, por meio da mediação dos docentes, os quais buscavam sempre incentivar a construção do conhecimento crítico reflexivo, oportunizando uma experiência de formação discente interprofissional ampliada.

Descritores: Equipe Hospitalar de Odontologia. Educação Interprofissional. Práticas Interdisciplinares.

INTRODUCTION

Hospital Dentistry (OH) has become one of the fields of activity of dental professionals and aim at the interdisciplinary practice, committed to improve the care of hospitalized patients, ensuring a comprehensive approach, considering the large association between oral and systemic health¹⁻³.

Dental care in a hospital environment aims to address the oral disorders, which require the accomplishment of preventive, educational, diagnostic, therapeutic and palliative actions, improving the general health of hospitalized patients and contributing to their recovery⁴. Hospitalization may be associated with functional decline, thus corroborating the increased dependence, since it can affect basic daily life activities, such as body hygiene and oral hygiene⁵. Consequently, the oral cavity of these patients progressively becomes a reservoir of microorganisms, which may worsen their condition during hospitalization. Therefore, it is inferred that oral hygiene reduces the risk of damage, especially in the development of diseases such as ventilator-associated pneumonia (VAP). Therefore, the role of dental professionals in the hospital environment favors the early diagnosis of oral lesions and contributes to reduce the incidence of respiratory and fungal infections⁶.

In this sense, in 2015, the Federal Dental Council (CFO) regulated hospital operations by resolutions concerning the necessary training to enable professionals to work safely in hospital environments, due to their specific nature^{7,8}. However, Hospital Dentistry was unanimously approved and recognized by the CFO as a new specialty only in August 2023⁹.

Also aiming at the inclusion of dental professionals in the work of multidisciplinary hospital teams, the proposal for the new National Curricular Guidelines (DCN) for the Dentistry Course leads to the improvement of training in the hospital environment, requiring graduates of Dentistry to be prepared to provide dental care for individuals in health institutions, including hospital environments¹⁰.

The practice spaces for undergraduate students include the university hospitals (HU), which also become training centers for resident health professionals, students of uniprofessional and multiprofessional residency programs. These scenarios favor collaborative practice, an action between health professionals from different areas working in a shared manner focusing on the needs of users, families and the community, aiming to improve the quality of health care¹¹.

Understanding the importance of the collaborative learning process, this paper reports the experience in developing joint activities between health professionals residents of the Multidisciplinary Residency Program in Elderly Health in the

professional field of Dentistry at a University Hospital in Curitiba and undergraduate Dentistry students at a higher education institution.

EXPERIENCE REPORT

This experience report is based on information recorded in the logbook of responsible professors, which includes their reflections on the activities performed among health professionals residents of the field of Dentistry of the Multidisciplinary Residency Program in Elderly Health of the Pontifical Catholic University of Paraná and Cajuru University Hospital (PUCPR/HUC), in the city of Curitiba, and students of the Undergraduate Dentistry Course at the School of Medicine and Life Sciences of the Pontifical Catholic University of Paraná, Curitiba Campus.

Additionally, the reflections considered the analysis of institutional documents, such as the teaching plan of disciplines, the selected collaborative learning tool (Padlet platform) and the formative and summative evaluation processes proposed by the professors.

Characterization of undergraduate disciplines and the Multiprofessional Residency Program

The report of experiences was based on observation, by the responsible professors, of collaborative activities developed by undergraduate students in the disciplines of Hospital Dentistry and Practical Hospital Dentistry, which are curricular components of the Undergraduate Dentistry Course, as demonstrated in Figure 1.

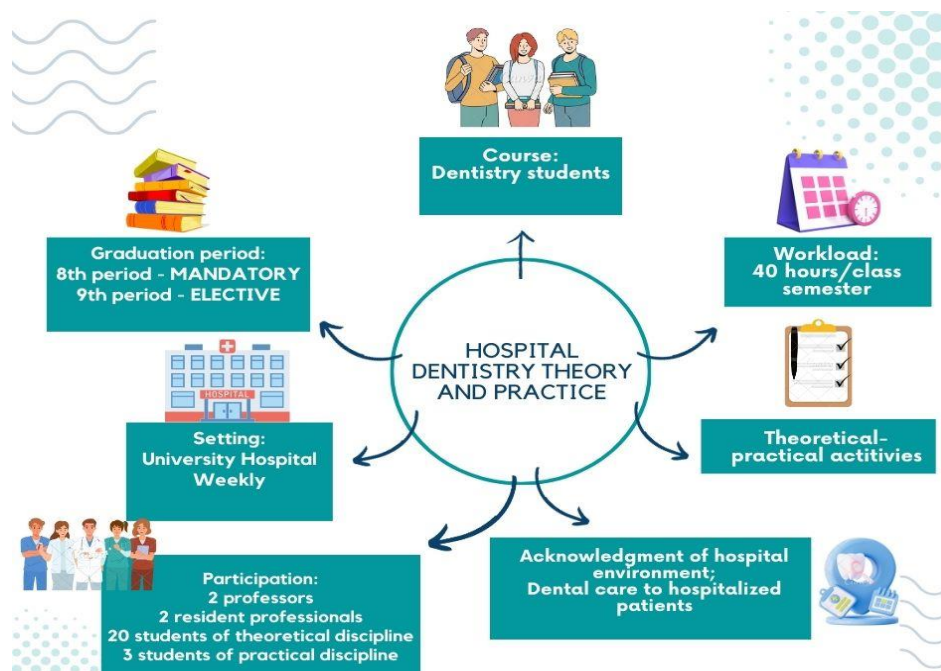


Figure 1. Curricular Components of the Theoretical and Practical Hospital Dentistry disciplines of the Undergraduate Dentistry Course at PUCPR, Curitiba/PR, 2023.

The activities proposed in the teaching plans include field practice activities, which consist of both recognizing the hospital environment and providing dental care to patients admitted to the wards. In these activities, undergraduate students were accompanied by resident health professionals and professors, developing practices that aimed to enable students to identify the main aspects related to the care of hospitalized patients, in an ethically appropriate, responsible and humanized manner. The study topics covered in the two undergraduate disciplines are shown in Figure 2.

TOPICS COVERED IN THEORETICAL AND PRACTICAL HOSPITAL DENTISTRY DISCIPLINES

1. History of Hospital Dentistry
2. Professional attitude of the dental professional in hospitals: Multiprofessional and interprofessional action with HUC Dentistry residents
3. Analysis of hospital records (Base illness/Reason for hospitalization; Complementary exams; Diagnostic procedures; Hospital prescription; Urgency/emergency care - General Ward/ICU)
4. Clinical examination of the hospitalized patient
5. Relationship between systemic factors and oral health in hospitalized patients
6. Guidelines for clinical treatment
7. Palliative care in Dentistry
8. Evolution and monitoring
9. Discussion of multidisciplinary clinical cases highlighting the importance of Dentistry in the hospital environment
10. Code of Ethics and current legislation for training and practicing Hospital Dentistry.

Figure 2. Topics covered in the disciplines of Theoretical and Practical Hospital Dentistry of the Undergraduate Dentistry Course at PUCPR, Curitiba/PR, 2023.

For the development of integrated activities, the curricular components of the Multiprofessional Residency Program in Elderly Health PUCPR/HUC were also considered, which lasts 2 years with a workload of 60 hours per week. This training period covers a total of 5,760 hours, which, by training axes, are divided into theoretical, theoretical-practical and practical activities. For this experience report, the activities of the latter two axes were considered (Figure 3). Considering that both the specific theoretical-practical content and the practice are structuring in the learning process during the Multiprofessional Residency, resident professionals are inserted into the context of activities of undergraduate students, to share the experiences lived daily, seeking the integration between them.

This professional meeting was held weekly by integrated activities, which included studies and presentations of multidisciplinary clinical cases, based on experiences mainly during dental care provided by undergraduate students and supervised and encouraged by residents and professors.

Integrated activities developed

Initially, the first visits to the university hospital were performed by undergraduate students to recognize the field of practice and the team of health professionals, residents of the field of Dentistry. Firstly, the activities developed included a theoretical basis regarding the performance of Dentistry in a hospital environment to prepare undergraduate students for subsequent field activities. These included guided visits in hospital wards, aiming at identifying the environment, patient profile, the most prevalent pathologies/conditions in the elderly population, to place the student in contact with the reality of a university hospital that assists patients from the Unified Health System (SUS). Therefore, by these first activities developed at completion of each class, in discussion circles, students reflected on the different aspects observed, focusing not only on patient care, but also on the difficulties inherent to the practice of different professional areas in a hospital environment, understanding more about the universe of SUS at the tertiary care level. These discussions were mediated by professors, with participation of two residents, always considering relevant scientific, ethical and humanistic criteria. At completion of discussions, students were instructed to perform a complementary study on the main health repercussions found and different aspects discussed. For that purpose, professors, residents and students entered data on the Padlet digital platform with opinions, reports, articles and supporting materials relating to the topics covered.

TRAINING AXIS OF THE MULTIPROFESSIONAL RESIDENCY PROGRAM IN ELDERLY HEALTH IN THE FIELD OF DENTISTRY			
DISCIPLINES	WORKLOAD	COURSE SYLLABUS	YEAR
Multidisciplinary Care Internship - Cajuru University Hospital	4,368 hours	Dentistry residents perform care activities for hospitalized patients in general wards and intensive care units under the supervision of program preceptors and participate in clinical meetings with the multidisciplinary health team. Case studies are also conducted, providing opportunities for the discussion of scientific topics related to oral health in elderly patients, to provide constant improvement both in the care provided to the patient and in the training of human resources for the Brazilian Unified Health System.	1 st and 2 nd
Specific axis of the professional area: Dentistry	461 hours	Dentistry will provide opportunities for the discussion of scientific topics related to oral health in elderly patients, by updated scientific literature, to facilitate the construction of knowledge by the resident. Also, it will enable the patient to receive dental care in the hospital beds of general wards and ICUs of HUC and, when indicated, with previous authorization by the medical team, the care will be performed in the Dentistry Service office of the aforementioned Hospital. In Basic Health Units, dental residents will assist patients in primary care, besides participating in multiprofessional actions for oral health promotion. When needed, patients from the Health Units will be referred to the HUC and PUC Dentistry Clinics. Also, patients admitted to HUC may be referred to the PUC Dentistry Clinic according to their needs.	1 st and 2 nd

Figure 3. Training axes of the Multiprofessional Residency Program in Elderly Health in the field of Dentistry at PUCPR/HUC, with distribution of workload, syllabus and period of development, Curitiba/PR, 2023.

The Padlet platform is a free online interactive virtual mural that has been used to promote collaborative learning. This pedagogical strategy allows users to “like”, comment and evaluate the different materials posted¹². Excerpt taken from the logbook of professor 1, from the two disciplines covered in this experience report, about the platform: “the use of this learning tool was perceived by professors as one of the most striking points of collaborative learning, since this was one of the moments in which students shared their knowledge, opinions, reflections, besides being able to support different study themes by shared materials and also being closer to professors, allowing reflections on their learning, difficulties and the humanized service context”.

After developing the initial activities to raise awareness on the importance of disciplines presented in this report, the students experienced the reality of this field of Dentistry integrated with other professional areas. This was followed by the other activities proposed in the disciplines, which consisted of four distinct moments on each class day (Figure 4).

With this design, professors were mediators in the activities developed, mainly aiming at making the students and residents co-responsible for their learning process, contributing to their self-regulation. In this context, Shahzad et al. (2017)¹³ highlighted that the reproduction of content and knowledge should no longer be performed currently, since it does not show significant and lasting results. However, it must be supported by more dynamic learning, placing the student at the center of the teaching and learning process, thus playing the role of protagonist. For that purpose, it is recommended to use different methodologies to promote effective and meaningful learning for the students.

The sequence that makes up hospital dental care (steps 2 and 3 in Figure 4) was presented in the mental map of disciplines, created by professors to facilitate the counseling and visualization of the most important points to be studied (Figure 5).

LEARNING PROCESS



Figure 4. Sequence of activities involved in the learning process of Theoretical and Practical Hospital Dentistry disciplines of the Dentistry Course at PUCPR, Curitiba/PR, 2023.

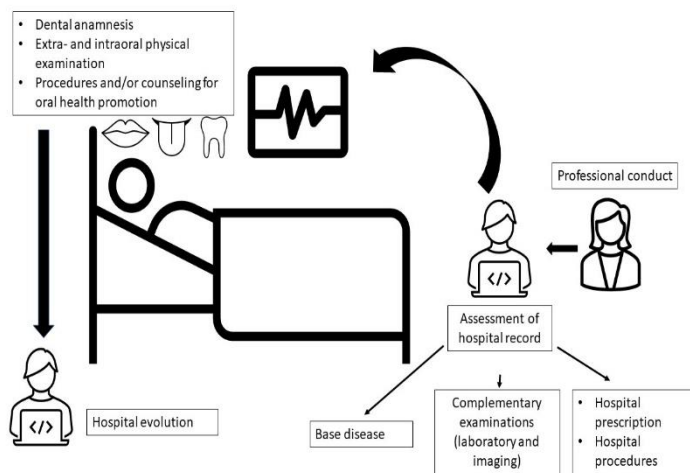


Figure 5. Mental map of the Hospital Dentistry and Practical Hospital Dentistry disciplines, from the Dentistry Course at PUCPR, Curitiba/PR, 2023.

Stage 4 of Figure 4 aimed to encourage collaborative learning between students, residents and professors, since at this time the students and residents mentioned the main aspects inherent to care and discussed the possibilities for diagnosis and establishment of clinical and/or surgical procedures, supported by the interactions of mediating professors, who encouraged students and residents to reflect on the different aspects covered.

Assessment processes for undergraduate disciplines

The methodology for evaluating the activities described in this report was regularly performed throughout the semester, consisting of both formative assessments with immediate and summative feedback (Figure 6). For that purpose, resources as the Padlet Platform were explored aiming at collaborative learning

Considering the different stages for the development of the student's self-regulatory process, namely: planning, execution and evaluation, it is important to use different strategies to assist them. In this sense, the student should engage in activities proposed throughout the disciplines, showing critical sense in their development, besides monitoring and reflecting on their learning process, making them the main actor in the development of this process. It should be noted that all this occurs regularly, to avoid generating anxiety and overload for the students, but rather leading them to reflect and value each of their achievements by constant and individualized feedback, favoring the development of the necessary skills (Figure 7).

LEARNING OUTCOMES	PERFORMANCE INDICATORS	EVALUATION PROCESSES	METHODS USED
RA 1. To indicate the scope of Dentistry activities conducted in hospital environments, by consultation of current legislation and discussion of simulated clinical cases.	ID 1.1 Analyzes the scope and importance of the dentist's role in a hospital environment; ID 1.2 Demonstrates knowledge of current legislation for dental professionals to work in hospital environments; ID 1.3 Discusses simulated clinical cases with critical sense.	Evaluation of products developed in team activities and discussion of clinical-training cases with immediate feedback. Formative and summative assessment of clinical cases with selected study topics, individually and in teams, with immediate feedback, at completion, in the large group. Formative assessment during patient care (conducted by professors, residents and students), providing immediate feedback to students. Effective Student Work (TDE) - formative assessment (delivery of material by CANVAS).	Dialogued expository class interspersed with reflective group questions. Team-based learning (TBL): simple multiple choice or decision-making scenario Practice-based learning (hospital care with supervision and participation in multidisciplinary clinical discussions). Means of interaction - Padlet (discussion group tools).
RA 2. To recognize the role of dental professionals when working with multidisciplinary teams in hospital environments in an integrated, innovative and humanized manner.	ID 2.1 Discusses interprofessional clinical cases with critical thinking; ID 2.2 Recognizes the work interface between different professional areas; ID 2.3 Analyzes clinical cases with a critical sense to work with the multidisciplinary team, developing technical communication.		
RA 3. To develop dental care flows in a hospital environment, analyzing the impact of diseases and/or systemic changes, as well as the etiology of oral changes in hospitalized patients, by simulated activities.	ID 3.1 Develops dental care flows in a hospital environment by simulated activities; ID 3.2 Analyzes the impact of diseases and/or systemic changes, social and psychological factors on oral health; ID 3.3 Analyzes etiological possibilities for the identified oral changes, relating factors from the patient's social, psychological and health context.		

Figure 6. Methodology and Assessment of disciplines of Hospital Dentistry and Practical Hospital Dentistry of the Dentistry Course at PUCPR, Curitiba/PR, 2023.

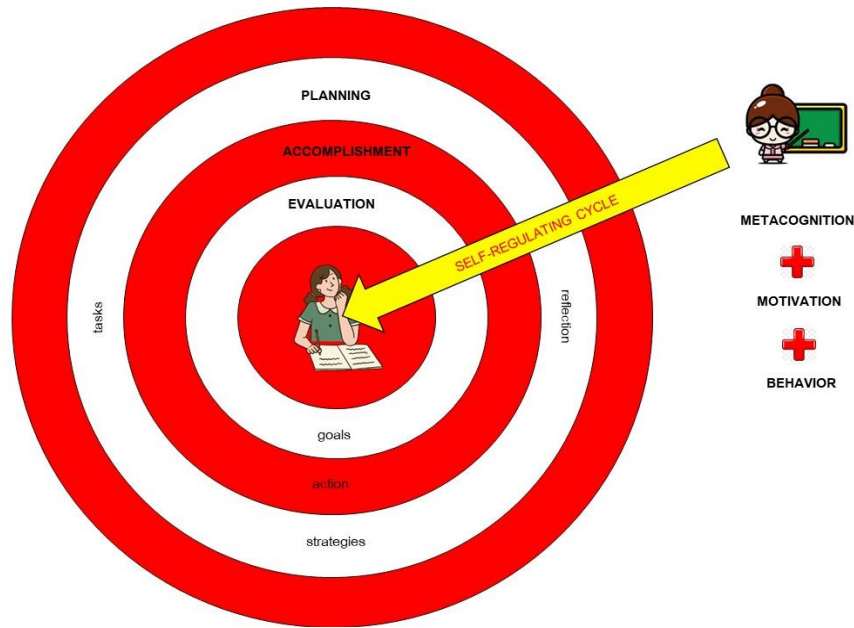


Figure 7. Mental map of the self-regulatory cycle, highlighting the student's role as the central point of the process and the role of professor as mediator.

Excerpt taken from professor 2 logbook, from the two disciplines covered in this experience report: "I try to provide my students with experiences by different technological and/or educational resources, such as the Padlet Platform, multidisciplinary clinical case discussions, among others. With the adoption of different teaching strategies, I see better and more favorable results for student learning, since they remain active and stimulated, besides making them co-responsible for their learning process".

The evaluation process of the Multiprofessional Residency Program in Elderly Health at PUCPR/HUC occurs systematically and continuously and is part of the curriculum planning, being present during all stages involving the teaching and learning of residents. An effective process requires a dynamic integration between tutors, preceptors and residents, ensuring the achievement of technical and scientific knowledge respecting the individual characteristics of each resident. Therefore, the assessment is understood as a fundamental tool for the entire teaching and learning process, immediately identifying any difficulties faced by the student, aiming at their monitoring and gradual recovery throughout the construction of knowledge.

Difficulties and limitations of activities performed

Despite the evident progress, there are also challenges and restrictions in consolidating the activities developed and in the teaching-service articulation, which should be addressed. An example of this is the academic training in Dentistry, which is still focused on practice within the university walls with emphasis on the professional technique, preparing the majority of students to work in the private sector. Another difficulty is the establishment of activities outside the university, since it depends on the participation of students as a whole, to reach the hospital and get involved in the proposed activities.

To overcome such obstacles, it is necessary to continue these extraordinary field practices, encouraging and enabling these students to become more critical and reflective professionals, not only addressing the technique in the context of oral health, but also aiming at a more comprehensive standpoint, thinking about the patient as a whole, changing the focus of the biomedical model.

FINAL CONSIDERATIONS

Considering all these aspects, the modifications incorporated into the new curriculum by the new National Curricular Guidelines in health, combined to the approval of Hospital Dentistry as a specialty, expand the approach of Dentistry in hospital care, advancing the more humanistic training of dental professionals beyond outpatient care in private clinics.

It was observed that the students' proximity to health residents working in the service strengthened collaborative learning, with the exchange of experiences, active participation, interaction and cooperation between them, aiming to meet the needs of the hospitalized elderly population, providing the hospitalized patient with comprehensive and high-quality care at a time of vulnerability. The integration was also favorable for these students to develop reflective, critical, collaborative and interdisciplinary capacities, helping them to become future professionals with the skill to appropriately care for systemically compromised patients in hospital or outpatient environments.

Also, by the use of evaluation processes and active methodologies proposed for undergraduate courses and the Residency Program, learning and knowledge retention proved to be more successful and favored the application of theory in routine practice. Therefore, the collaborative learning process developed between professors, health residents and undergraduate students was a tool that guided changes and multiplied knowledge.

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