

INTERPROFESSIONALITY, TEACHING AND HEALTH CARE IN THE COVID-19 PANDEMIC: TIME LOST OR LEARNING?

INTERPROFESIONALIDAD, DOCENCIA Y SALUD EN LA PANDEMIA DEL COVID-19:
¿TIEMPO PERDIDO O APRENDIZAJE?

INTERPROFISSIONALIDADE, ENSINO E ASSISTÊNCIA EM SAÚDE NA PANDEMIA DE
COVID-19: TEMPO PERDIDO OU DE APRENDIZADO?

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Abstract

The covid-19 pandemic provoked the biggest public health emergency of the century, changing actions in health care and health education. Thus, this study aims to locate and analyze information related to collective practices and cooperative behavior in health work in health care and teaching activities in the context of the covid-19 pandemic and in its confrontation. The methodology used was an integrative review, guided by the following guiding question: how did collaborative practices and interprofessionality permeate health care and teaching activities, in the context of the COVID-19 pandemic? The research was carried out in the LILACS, SCIELO and PUBMED databases in September 2021, limited to a time frame of 21 months of the pandemic. The intersections of the following descriptors (and their corresponding ones in English), duly validated in the Medical Subject Heading Terms, combined with the Boolean AND: interprofessional relations, interdisciplinary practices, interprofessional education and cooperative behavior were used. A total of 586 abstracts were found, 565 of which were deleted, according to the exclusion criteria, thus composing the integrative review of 21 articles. With this study, new teaching methodologies on interprofessional education and collaborative networks at work were identified, giving visibility to actions related to collaborative practices and interprofessionality in health care and teaching activities in the context of the covid-19 pandemic.

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Keywords: Interprofessional Relations; Interdisciplinary Placement; Covid-19; Public Health.

Resumen

La pandemia de covid-19 provocó la mayor emergencia de salud pública del siglo, modificando las acciones de atención y educación en salud. Así, este estudio tiene como objetivo localizar y analizar información relacionada con las prácticas colectivas y el comportamiento cooperativo en el trabajo de salud en las actividades asistenciales y docentes en el contexto de la pandemia de covid-19 y en su enfrentamiento. La metodología utilizada fue una revisión integradora, guiada por la siguiente pregunta orientadora: ¿cómo permearon las prácticas colaborativas y la interprofesionalidad en las actividades asistenciales y docentes, en el contexto de la pandemia de la COVID-19? La investigación se realizó en las bases de datos LILACS, SCIELO y PUBMED en septiembre de 2021, limitada a un marco temporal de 21 meses de pandemia. Se utilizaron las intersecciones de los siguientes descriptores (y sus correspondientes en inglés), debidamente validados en el Medical Subject Heading Terms, combinados con el booleano AND: relaciones interprofesionales, prácticas interdisciplinarias, educación interprofesional y comportamiento cooperativo. Fueron encontrados un total de 586 resúmenes, de los cuales 565 fueron eliminados, de acuerdo con los criterios de exclusión, componiendo así la revisión integradora de 21 artículos. Con este estudio se identificaron nuevas metodologías de enseñanza sobre educación interprofesional y redes colaborativas en el trabajo, dando visibilidad a acciones relacionadas con prácticas colaborativas e interprofesionalidad en la actividad asistencial y docente en salud en el contexto de la pandemia del covid-19.

Palabras clave: Relaciones interprofesionales; Prácticas interdisciplinarias; Covid-19; Salud Pública.

Resumo

A pandemia de covid-19 provocou a maior emergência de saúde pública do século, modificando fazeres na assistência à saúde e no ensino na saúde. Assim, este estudo tem o objetivo de localizar e analisar as informações relacionadas às práticas coletivas e comportamento cooperativo no trabalho em saúde nas atividades assistenciais e de ensino na saúde no contexto da pandemia de covid-19 e no seu enfrentamento. A metodologia utilizada foi uma revisão integrativa, orientada pela seguinte questão norteadora: de que forma as práticas colaborativas e a interprofissionalidade permearam as atividades assistenciais e de ensino na saúde, no contexto da pandemia de COVID-19? A pesquisa foi realizada nas bases de dados LILACS, SCIELO E PUBMED em setembro de 2021, limitando-se a um recorte temporal de 21 meses de pandemia. Foram utilizados os cruzamentos dos seguintes descritores (e seus correspondentes em inglês), devidamente validados no *Medical Subject Heading Terms*, combinados com o booleano AND: relações interprofissionais, práticas interdisciplinares, educação interprofissional e comportamento cooperativo. Foram encontrados 586 resumos, suprimidos destes 565, mediante os critérios de exclusão, assim compondo a revisão integrativa 21 artigos. Com esse estudo, foram identificadas novas metodologias de ensino sobre educação interprofissional e redes colaborativas no trabalho, dando visibilidade as ações relacionadas às práticas colaborativas e à interprofissionalidade nas atividades assistenciais e de ensino na saúde no contexto da pandemia de covid-19.

Palavras-chave: Relações interprofissionais; Práticas Interdisciplinares; Covid-19; Saúde Pública.

Introduction

This study reports experiences regarding reinvention in the way of teaching, working and sharing during the difficult days of the covid-19 pandemic (Corona Virus Disease). Some worries turned into doubts: did the invisible enemy distance us? How do we promote collaborative practices? Were we prepared for a pandemic? What resources were used in this reinvention of models? Which paradigms were broken? The experiences and learning resulting from these questions will be presented and discussed in order to promote new technologies in teaching and work in health.

So, what resources were used in this reinvention of models? Which paradigms were broken? The experiences and lessons learned resulting from this research will be presented and discussed in order to promote new technologies in teaching and work in health.

We were not prepared for a pandemic like COVID-19. The fear of dying was real and transformed our days and time. The fear of dying, inherent to our existence, became real and present, transforming our days, transforming our time. The “storm” loomed over us and the choice was to reinvent ourselves and move on, as time became a great uncertainty.

Amidst the chaotic turmoil, with increased pressure on the health system and the sharp rise in the number of hospitalizations and deaths, contingency measures were implemented in order to promote social distancing and mitigate the number of deaths and hospitalizations. Health professionals, in all areas of complexity, were strongly challenged to change their work routines, reinvent their processes and seek new ways for communication, collaboration and teaching. In that context, health professionals sought to understand how to promote team cohesion, how to assist users at a distance and how to teach health at a distance. These questions remain to this day.

The days of the pandemic brought the need to promote interprofessionalism and collaborative practices in teaching and health services in the pandemic context. This was thought in contrast to the required social distance and burnout of work teams due to the increase in workload and demands. According to the framework for

Action in Interprofessional Education, collaborative practice is when two or more professionals work in collaboration of skills, with different professional experiences, to offer quality care. It allows health professionals to include any individual whose skills can support the achievement of local health goals (WHO, 2010).

Interprofessional health care teams understand how to leverage their member's skills, share case management, and provide better quality health services to patients and the community. In this way, they strengthen health systems and lead to better health outcomes (WHO, 2010).

Interprofessional Education (IPE) and Collaborative Practice (CP) are emerging themes in the field of health at a global level, with the team as a fundamental component of the reform of the model of professional training and health care (WHO, 2010). In its definition, in the IPE, professions simultaneously learn about collective work and the particularities of each professional area, oriented, towards collaborative work in an interprofessional team to provide quality health care.

Catão, Cronemberger and Cappanari (2014) point out that within interprofessionality there is a promising scenario for collaborative practices, in which professionals decide and act together on behalf of patients. These health workers carry out a process of conversations and exchanges, in which each one has a voice. Together, through time for individual reflections, they discover common meanings and paths for changes in the conduct of treatment.

It is important to highlight the distinction between multidisciplinary and interprofessional. Being multidisciplinary means sharing a work environment among professionals from different areas of health who are part of it, approaching the same patient from different perspectives. The interprofessional model, on the other hand, is the construction of care collaboration, complementary and coordinated among the members, in line with the process of professional specialization that currently takes place. This second model works in a fragmented way. Contact with other areas is limited to referrals, with no joint construction of evaluation and development of activities. In this way, the process that guarantees the exchange of knowledge between the multidisciplinary team is characterized by the interprofessional relationship (PEDUZZI, 2016).

The main objective of this study is to analyze the bibliographic products through an integrative literature review. We chose articles related to collaborative practices and interprofessionality in health care and teaching activities in the context of the Covid-19 pandemic. Associated with this main objective, we propose a qualification in the care work and health teaching process, encouraging the use of collaborative practices and interprofessionality in user assistance, under the bias of the practices and models used in the context of the covid-19 pandemic, as indicated by the integrative literature review.

The second secondary objective is to synthesize, through an integrative review, the main bibliographic products that portray actions regarding the use of collaborative practices and interprofessionality in the scenario of the 21 months of the covid-19 pandemic, linked to health care teaching practices. With this study, we hope to identify new teaching methodologies regarding interprofessional education and collaborative networks at work, giving visibility to actions related to collaborative practices and interprofessionality in health care and teaching practices in the context of the covid-19 pandemic.

Methodology

The methodological itinerary covered by the present study was outlined from the context of its scenario, intertwined with an active search study in the literature, in the light of the integrative review methodology. From the product of the analysis of the studies obtained from the review, a discussion emerged organized into two categories. The weaving of the study has as its starting point the integrative review, a method that provides the synthesis of knowledge and the incorporation of the applicability of results of significant studies in practice (COOPER, 1984). The possibility of synthesizing studies already developed on a given subject, combined with pointing out gaps in knowledge, makes the integrative review an important tool to provide support in decision-making and in the improvement of clinical practice, in addition to enabling more purpose of new research (MENDES; SILVEIRA; GALVÃO, 2008).

This integrative review consisted of five stages: formulation of the problem, data collection, evaluation of the collected data, analysis and interpretation of the data, and presentation of the results (COOPER, 1984).

The formulation of the problem was characterized by the theoretical study of the problem to be researched by answering a proposed question. This question defined the most important variables and delimited the research question (COOPER, 1984). The study was guided by the following question: how did collaborative practices and interprofessional permeate health care and teaching activities, in the context of the covid-19 pandemic?

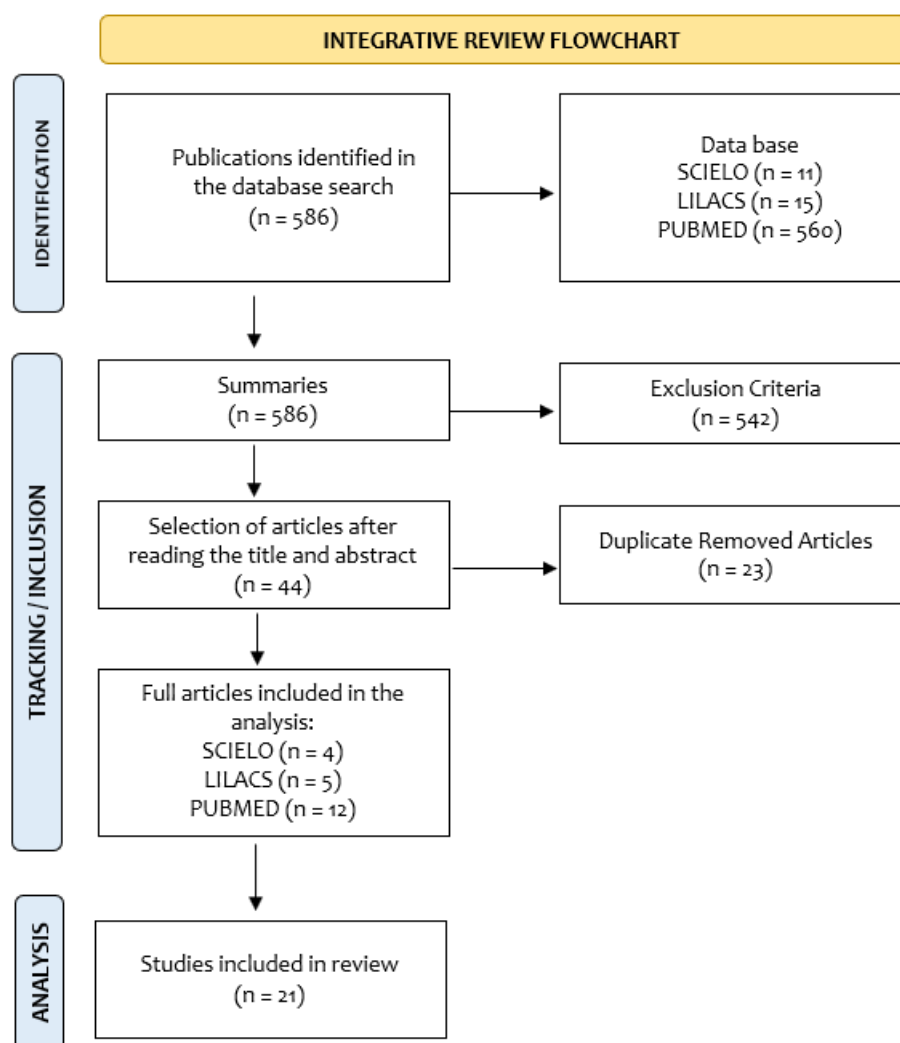
- Data collect

The data search was carried out in September 2021. We used three databases: Scientific Electronic Library Online (SCIELO), Latin American and Caribbean Health Sciences Literature (LILACS) and Medical Literature Analysis and Retrieval System Online (PUBMED/MEDLINE). To ensure vocabular control and identification of corresponding words, we used Medical Subject Heading Terms (Mesh Terms). These databases were chosen because their collection is regularly updated. They provide researchers with efficient access to knowledge produced in the area of health and health education. We used the boolean AND marker in each intersection.

The following associations of descriptors were used in English and Portuguese languages: “interprofessional relations and covid-19 and coronavirus infections”, “interdisciplinary placement and covid-19 and coronavirus infections”, “interprofessional education and covid-19 and coronavirus infections”, “cooperative behavior and covid-19 and coronavirus infections”, “*relações interprofissionais and covid-19 and infecções por coronavírus*”, “*práticas interdisciplinares and covid-19 and infecções por coronavírus*”, “*educação interprofissional and covid-19 and infecções por coronavírus*”, “*comportamento cooperativo and covid-19 and infecções por coronavírus*”.

The inclusion criteria used were national and international publications, in English, Spanish and Portuguese, from 2020 to 2021, resulting from qualitative, quantitative, quantitative and qualitative research, experience reports and theoretical reflections, available online in full. We also used other types of scientific communication, such as letter to the reader and editorial communication. This precedente was due to the fact that the pandemic is na emerging topic, with the need for fast recognition of updates. Exclusion criteria were government dissertations and texts or documents that did not allow access to the full text.

Figure 1 – Flowchart of the selection process of articles for the integrative review, Porto Alegre\RS, Brazil (2021)



Source: Authors (2021).

The search in the databases was carried out in September 2021, 21 months into the covid-19 pandemic. Each reference was imported into the *Mendeley* software, though which repetitions between databases were excluded. 586 abstracts were found; removed from these 565, through the criteria of exclusion and duplicity, thus composing the integrative review 21 articles. Figure 1 illustrates the results obtained in the association of descriptors in the search tools and a conceptual map (diagram) of the selection process of the articles for the integrative review.

- Evaluation of the collected data

At this stage, we evaluated the quality and relevance of the data obtained for the research. We recorded the information in an instrument that was created containing the following data: identification of the article (title, author, year of publication, descriptors); goal; methodology; type of study and ethical aspects; results; limitations and recommendations.

- Data analysis and interpretation

At this stage, the initial evaluation of the selected articles took place, with the establishment of converging points, seeking to dialogue with similarities and signal the differences. The content analysis methodology, described by Minayo (2014), concerns research techniques that make it possible to make inferences about data from a given context replicable and legitimate through specialized and scientific processes.

Among the modalities of content analysis, we find thematic analysis, which operationally unfold in three stages (MINAYO, 2014). The first one is pre-analysis. It consists of organizing the research material and floating Reading of the notes to be analyzed, guided by the objectives and theoretical framework. The second is the exploration of the material, carried out through the classification operation process in search of categories, which are significant expressions and terms in which the content of the speeches will be organized. The third one is the treatment of the

obtained results and interpretation, in which the research results are exposed based on the purpose of the study, and the researcher makes inferences and performs interpretations, interrelating with the theoretical framework (MINAYO, 2014). Afterwards, the data obtained were recorded in the form of a synoptic table, which allowed a more synthesized and comparative interpretation of the data found.

This study took into account the ethical aspects, maintaining the authenticity of the ideas, concepts and definitions of the researched authors and the due citations and references, in accordance with the norms of the Technical Brazilian Norms Association (ABNT).

Results and discussion

This literature review consists of 21 articles, divided into two categories, called “care activities” and “teaching activities”. This categorization aims to encourage discussion and analysis under the bias of sharing scenarios and similar subjects. Dialogy took place in the categories and between them, without being paralyzed that would limit the problematization of the subjects and enhancing good reflections. Chart 1 presents the selected articles that make up the present review, according to the criteria set out in the methodological trajectory, organized by authors, year of publication, place of study, title, objectives, type of study and the category assigned to it. Figure 2 explains in a flowchart format the process of categorizations of articles selected in the integrative reviews.

Chart 1 – Synopsis of the articles in the integrative review

Article Number	Author, year of publication, study location and category (activity)	Title	Aim	Study design
A1	Caneppele et al. (2020), Brazil, Assistanse	Interprofessional collaboration in urgency and emergency network team's in the Covid-19 pandemic,	The aim of the article is to comparatively analyze interprofessional collaboration in urgency and emergency teams before and after the first death from covid-19 in Brazil.	Cross-sectional study

A2	Girundi, Aveiro e Uchôa-Figueiredo (2021), Brazil, Teaching	Education for interprofessional care: redefining health practices in pandemic times.	The article reports the experience of a class from the Integrated Clinic module: care production, from the guide Work on Health, from the Federal University of São Paulo – Baixada Santista Campus, in the format of special home activities, highlighting how interprofessional skills were developed in this new perspective.	Experience report
A3	Castro et al. (2020), Brazil, Assistance.	Teleconsultation in the context of the Covid-19: experience of the palliative care team.	The Palliative Care Center team at the Pedro Ernesto University Hospital organized the patient care flow by adding teleconsultation modalities to face-to-face care. This expansion generated an increase in communication between the patient and his family and the health team, thus preserving a therapeutic plan based on care, acceptance and respect.	Experience report
A4	Belarmino et al. (2020), Brazil, Assistance	Collaborative practices from health care teams to face the covid-19 pandemic.	The article reports the experience of collaborative practices in coping with the covid-19 pandemic.	Experience report
A5	Esperto et al. (2020),	Implementation and strategies to ensure adequate coordination within a Urology Department during the covid-19 pandemic.	The article updates the management of the Urology Service during the covid-19 outbreak, suggesting strategies to optimize patient care, implement telemedicine and triage protocols, define hospital access routes, reduce the risk of contagion within the hospital and to determine the role of residents during the pandemic.	Literature review
A6	Silva et al. (2020), Brazil, Assistance.	Interdisciplinary practices in coping with covid-19 in the Family health strategy.	This article describes the experiences of multiprofessional residents in the Family Health Strategy regarding the application of interdisciplinary actions in coping with the new Coronavirus.	Experience report
A7	Fumagalli, Sudré e Matumoto (2020), Brazil, Teaching.	Vaccination against influenza in times of covid-19 pandemic: report of an experience and reflections.	This article reports the experience of graduate students in the vaccination campaign against Influenza and reflect on the aspects related to learning that resulted from this process.	Experience report

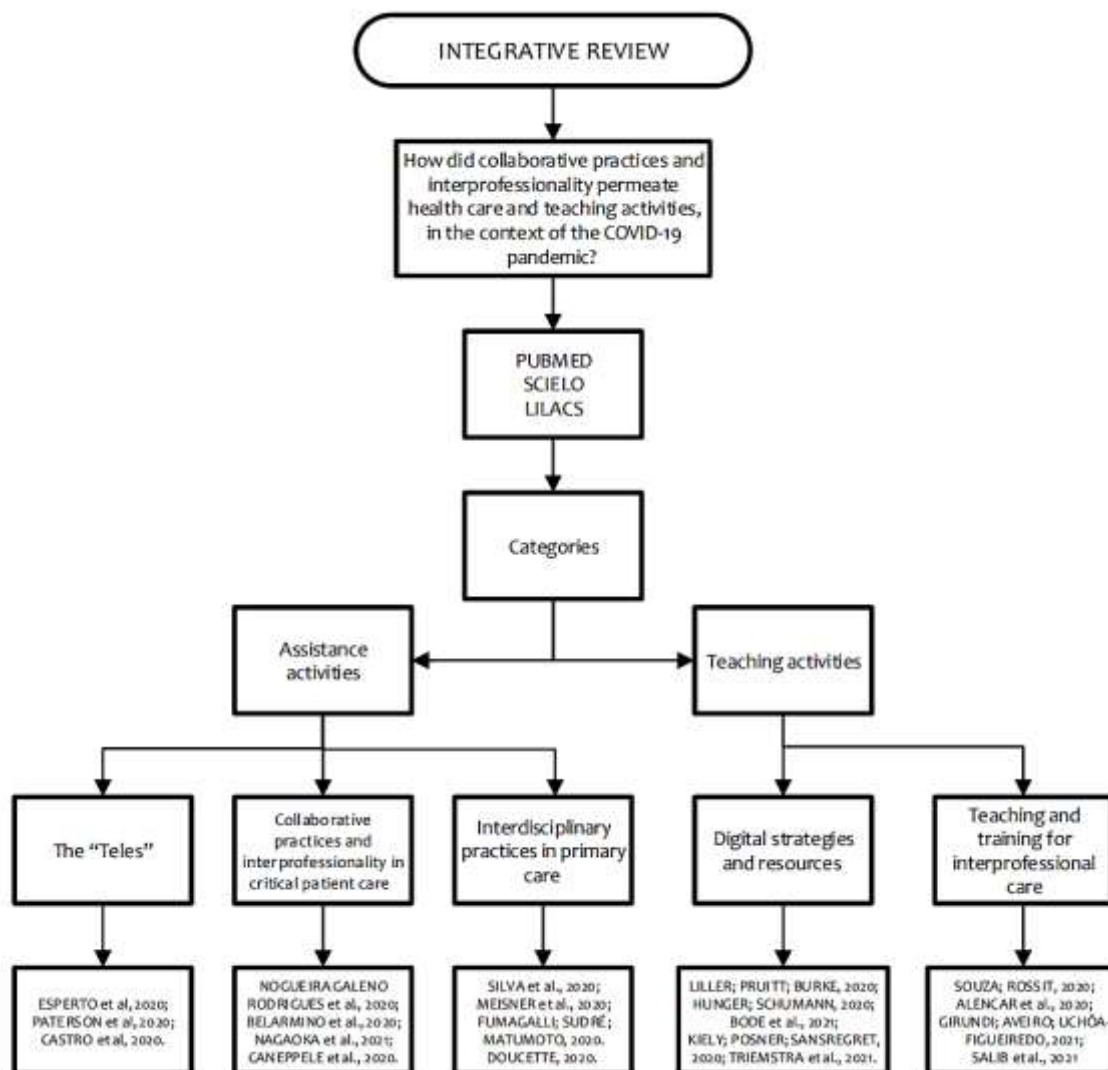
A8	Alencar et al. (2020), Brazil, Teaching.	Use of digital technologies in interprofessional education experience of PET – Health interprofessionality.	This article report the experience of using digital technologies, by a PET – Health Interprofessionality tutorial group, during the pandemic period.	Experience report
A9	Souza e Rossit (2020), Brazil, Teaching.	Dilemmas and perspectives of health human resources in the context of the pandemic.	This article reflect on the dilemmas and perspectives of human resources in health in the context of the pandemic in the light of the theoretical and conceptual framework of interprofessional education.	Critical-reflective analysis
A10	Paterson et al. (2020), Australia, Assistance	The Role of Telehealth During the covid-19 Pandemic Across the Interdisciplinary Cancer Team: Implications for Practice.	This literature review aims to explore the role of telehealth during the covid-19 pandemic in an interdisciplinary cancer care team.	Literature review
A11	Nogueira Galeno Rodrigues et al. (2020), Brazil, Assistance.	Communication in health work during the covid-19 pandemic.	This article report communication and qualified listening in nursing work in the face of the covid-19 pandemic.	Descriptive report
A12	Meisner et al. (2020), Canada, Assistance	Interdisciplinary and Collaborative Approaches Needed to Determine Impact of covid-19 on Older Adults and Aging.	The Covid-19 pandemic and subsequent state of public emergency has significantly affected seniors in Canada and around the world. It is imperative that the gerontological be efficient and effective.	Report
A13	Liller, Pruitt e Burke (2020), USA, Teaching	Interprofessional Education: Reaching Health Professionals with an Interactive Professional Virtual/Online Event on Advocacy and Policy.	This article shows what competencies in health policy must be developed by all professionals to effectively advance their professions, but also collaborate effectively in interprofessional teams to improve public health.	Report
A14	Hunger e Schumann (2020), Germany, Teaching.	How to achieve quality assurance, shared ethics and efficient teambuilding? Lessons learned from interprofessional collaboration during the covid-19 pandemic.	This article reports experiences made from teamwork with group members of different medical qualification level. The aim objective is to identify areas of shared knowledge about efficient collaboration; improve effective teamwork based on mutual respect; develop innovative teaching methods adapted to the need of interprofessional Covid-19 response teams.	Experience report

A15	Huang, Pulice e Sullivan (2020), USA, Teaching	Primary Care Mock Codes During a Pandemic: Interprofessional Team-Based Emergency Education While Maintaining Social Distance.	This article is an experience report on training involving simulation in the context of social isolation.	Experience report
A16	Nagaoka et al. (2021), Japan, Assistance	Efficacy of multidisciplinary team approach with extracorporeal membrane oxygenation for covid-19 in a low volume ECMO center.	In response to the rapidly increasing number of Covid-19 patients in Japan, this article shows how they have launched an ECMO support team comprised of multidisciplinary specialists including physicians, nurses, perfusionists in preparation for the threat of a pandemic.	Experience report
A17	Bode et al. (2021), Germany, Assistance	Interprofessional learning during SARS-CoV-2 (covid-19) pandemic conditions: the learning project I-reCovEr as a substitute for a rotation on an interprofessional training ward.	This report presents the Covid-19 interprofessional reposition program (I-reCovEr) as an alternative learning format for a rotation at IPAPAED at the Center for Pediatric and Adolescent Medicine. I-reCovEr provides opportunities for pediatric nursing interns (n=6) and medical students (n-9) to learn together taking into account hygiene and distancing measures.	Case study
A18	Kiely, Posner e Sansregret (2020), Canada, Teaching	Health Care Team Training and Simulation-Based Education in Obstetrics During the covid-19.	Health staff training and simulation-based education are important to prepare obstetric services to meet the challenges of the covid-19 pandemic.	Experience report
A19	Triemstra et al. (2021), USA, TEaching	Impact of the covid-19 Pandemic on the Clinical Learning Environment: Addressing Identified Gaps and Seizing Opportunities.	The clinical learning environment (CLE) encompasses the student's personal characteristics and experiences, social relationships, organizational culture, and the institution's physical and virtual infrastructure. During the Covid-19 pandemic, all four parts of the CLE experienced massive and rapid disruption.	Experience report

A20	Salib et al. (2021), USA, Teaching	Developing a Transitions of Care Elective for Medical Students during the covid-19 Pandemic and Beyond.	Health Care in the United States is expensive, fragmented, and often ineffective. Transitions of care (TOC), specially from the inpatient to the outpatient setting, is an especially tricky time and one that is potentially fraught with errors that contribute to negative outcomes.	Experience report
A21	Doucette (2020), USA, Assistance	Supporting your team during a global pandemic.	This article shows some ways to help you deal with the short-term and long-term challenges associated with the Covid-19 response.	Experience report

Fonte: Autores (2021).

Figure 2 – Flowchart of the organization of categorization of articles selected from the integrative review.



Source: Authors (2021).

Regarding the country of production of the articles selected for the integrative review, there was a predominance of Brazilian articles, with 10 (47%) articles in the sample, followed by Americans, with five (23%), and Germans, with two (9%) studies (Table 1). With Regard to the databases accessed in the integrative reviews, most of the studies come from PUBMED, with 12 articles (57%), followed by LILACS, with five articles (23%), and SCIELO, with four articles (19%) (Table 2).

Chart 1 – Country of selected articles production for the integrative review.

Country/Origin	Selected Articles	
	N	%
Brazil	10	47%
United States of America	5	23%
Germany	2	9%
Canada	2	9%
Australia	1	4%
Japan	1	4%
Total	21	100%

Source: Authors (2021)

Chart 2 – The articles used in the integrative review and their respective databases

Databases	Selected Articles	
	N	%
PUBMED	12	57%
LILACS	5	23%
SCIELO	4	19%
Total	21	100%

Source: Authors (2021).

- Assistance activities

The use of digital resources in patient care, at all levels of complexity of the health system, was enhanced due to the pandemic and its consequences, such as the need for social isolation to mitigate viral transmission. In this integrative reviews, the importance of “teles” was highlighted – medicine, health, education, learning. The value of collaborative practices and interprofessionality also emerged amidst the chaos established in the health system, including primary care, and in its reinventions, since the pandemic required distancing. Next, we will analyze these interweavings noted in the itinerary of the studies and their specificities.

The “Teles”

The role of telemedicine was crucial in the covid-19 pandemic by minimizing contact and the risk of patient exposure to Sars-CoV-2, reducing access to hospitals in person. According to Esperto et al (2020), telemedicine is a new way of providing health care and overcoming challenges related to physical distancing and self-isolation, inherent to the situation caused by the pandemic. The authors highlight the need to implement telemedicine protocols to enable the use of these resources and the concern about the backlog of consultations and elective surgeries, due to the delays caused by the exponential increase in cases of respiratory deterioration.

Cancer treatment was heavily impacted by the isolation measures applied in an attempt to contain the spread of the virus. Oncological care reflects a close relationship with the interdisciplinary team and all aspects involving this care. The article by Paterson *et al.* (2020) explored the use of *telehealth* by the interdisciplinary team in cancer care during the COVID-19 pandemic. As the authors explained, although the safe and effective delivery of cancer care telehealth requires education and training for health professionals and patients, this type of care provided a timely solution to the barriers caused by the covid-19 pandemic in the provision of interdisciplinary services of cancer. Telehealth reduces patient travel to appointments, offers a timely solution to discuss distressing side effects, initiates interventions, and allows for potential additions and/or changes to treatment (PATERSON *et al.*, 2020).

According to Paterson *et al.* (2020), evidence has identified that telehealth in oncology can be used with the entire interdisciplinary team to allow people to navigate the healthcare system and access routine care during an infectious outbreak. Regular use of telehealth in cancer care can lead to more effective and sustainable models of care. However, the benefits and limitations of this service delivery model need to be carefully considered; and adequate training and education provided to all healthcare professionals and patients. The article also highlights the

participation of the *Nurse Navigator* in this process, integrating the points of the care network. The *nurse navigator*, according to Lorenzoni (2019)⁴, identifies the barriers faced by the patient in accessing treatment. In this sense, resolving them reduces possible delays in accessing services, benefiting both patients in the diagnostic phase and undergoing treatment and those undergoing palliative care.

Palliative care is a right that must be ensured, even through the recommendations of social isolation in the most difficult periods of the health crisis. In this context, the Palliative Care Center team at the University Hospital organized the flow of patient care by adding teleconsultation modalities to face-to-face care. This expansion generated an increase in communication between the patient and his family and the health team, thus preserving a therapeutic plan based on care, acceptance and respect appropriate to this period of coping with the new coronavirus (CASTRO *et al.*, 2020).

Collaborative practices and interprofessionalism in critical patient care

A study carried out by nurses in a Brazilian Emergency Care Unit dealt with interprofessional communication, in the emergency sector, between residents, physicians and other members of the health team and showed barriers to achieving effective communication, such as personal factors (fear, self-confidence), clinical environment (work overload, rapid changes in health teams) and lack of training. According to Nogueira Galeno Rodrigues *et al.* (2020), the described theoretical report made it possible to visualize a cut that is under the conditions of the current situation resulting from covid-19. Communication has become an essential tool for maintaining professional relationships and culminating in team collaboration and cooperation, in order to provide a close relationship with the user and promote the quality of care and health care processes (NOGUEIRA GALENO RODRIGUES *et al.*, 2020).

⁴*Práticas colaborativas em oncologia: compreensão do processo de trabalho de uma equipe assistencial*, by Ana Maria Vieira Lorenzoni (UFRGS, 2020): unpublished monograph, given directly by the author..

Belarmino *et al.* (2020) report the experience of collaborative practices in coping with the covid-19 pandemic by an emergency care health team, also in a Brazilian Emergency Care Unit. According to the report, and corroborating Nogueira Galeno Rodrigues *et al.* (2020), collaboration, cooperation and effective communication actions between the nursing team and the medical team contribute to the management of mild and complex cases of covid-19, as well as qualifying for appropriate and necessary care and coping measures. The need for collaborative practices was evidenced to minimize negative effects on the population in the face of the new coronavirus pandemic. The conduct of health actions proved to be complex and motivated by the interconnection between care and health management, interprofessional actions in critical care and intersubjectivity in patient care (BELARMINO *et al.*, 2020).

In the complexity of critical patient care, according to Chaves *et al.* (2019), *Extracorporeal Membrane Oxygenation* (ECMO) was in evidence, as it offers temporary support to pulmonary and/or cardiac function failure, refractory to conventional clinical treatment. The use of ECMO requires a specialized intensive care team, and in a pandemic context, this challenge is intensified. The use of ECMO requires a specialized intensive care team, and in a pandemic context, this challenge is intensified (URTIGA *et al.*, 2021). At this juncture, a Japanese treatment center specialized in ECMO achieved a high survival rate when using this resource during the covid-19 pandemic, attributing this success to team decision-making for the “uncertain pathology with an emerging infectious disease”. According to the study, in response to the rapid increase in the number of covid-19 patients in Japan, the creation of an ECMO support team composed of multidisciplinary specialists, including physicians, nurses, perfusionists, and bioethicists was essential in the effectiveness of the therapy used (NAGAOKA *et al.*, 2021).

From emergency care units to specific centers specializing in the use of hard and complex technologies, such as ECMO, the importance of interprofessional collaboration is evident. However, Caneppele *et al.* (2020) perform a comparative analysis through a cross-sectional study on interprofessional collaboration in urgency and emergency teams before and after the first death from covid-19 in Brazil. In this

study, data collection was conducted using the Interprofessional Team Collaboration Assessment Scale to assess three factors: partnership, cooperation and coordination. For analysis, the sample was divided into Group A (before the first death from covid-19 in Brazil) and Group B (after that date) using descriptive and comparative statistics (CANEPPELE *et al.*, 2020).

According to Caneppele *et al.* (2020) showed, through the application of a scale, and Nagaoka *et al.* (2021), Nogueira Galeno Rodrigues *et al.* (2020) and Belarmino *et al.* (2020) highlighted by observations and experience reports in complex and dynamic environments such as urgency and emergency sectors, teamwork and interprofessional collaboration are highlighted during the pandemic. Interprofessional collaboration was strengthened in the analyzed teams with a significant increase in the coordination of actions after the first death from covid-19 in Brazil (CANEPPELE *et al.*, 2020).

Interdisciplinary practices in primary care

Health promotion, prevention and recovery, integrality of preventive and curative actions, universal access and equity as a parameter for the best choices, in the light of epidemiological criteria. The SUS was the strength of the Brazilian population, which despite the obscurity of denial of science and vaccine efficacy, ensured access to the Brazilian population through its gateways to all levels of complexity of the system, according to the needs of users.

In the scenario of Primary Care, Silva *et al.* (2020) described the experiences of multidisciplinary residents in the Family Health Strategy regarding the application of interdisciplinary actions in coping with the new coronavirus. The descriptive study, in the format of an experience report, was developed in three phases, delimiting the problems faced by the team, the formulation of a local contingency plan based on interdisciplinarity and the implementation of actions. There was evidence of greater adherence by the population to the health team's recommendations, reducing viral transmission between patients and the health team, as well as reducing the permanence of users in the unit, enabling the continuity of care and the safety of all (SILVA *et al.*, 2020).

A model of primary care, and with a public health system that is similar to Brazil's, Canada is represented in the present study through the experience report of Meisner et al. (2020). In it, emphasis is placed on the importance of the collaborative and interdisciplinary approach to determine the impact of covid-19 on the elderly and aging. The authors point out that there is added value when multiple perspectives and intersections of different disciplines are realized, instead of just one discipline or worldview. It is advocated the development of multidisciplinary teams that unite and bridge the different specializations, as well as methods and experiences, to together elaborate a comprehensive and effective gerontological response (MEISNER et al., 2020).

In facing the pandemic, the biggest asset was the massive vaccination campaign. However, influenza vaccination was also essential in the context of the pandemic. Fumagalli, Sudré and Matumoto (2020) addressed the experience of graduate students in the influenza vaccination campaign and reflected on aspects related to learning that resulted from this process. As the authors inferred, the participation of graduate students in the influenza vaccination campaign, which was also established as one of the strategies for coping with the covid19 pandemic, enabled a critical-reflective look and recognition of the limits and potential of the local system of health. Actions like these are stimulating due to the diversity of practice scenarios and for providing immersion in real problem situations, a strategy that enables the consolidation of learning (FUMAGALLI; SUDRÉ; MATUMOTO, 2020).

Nurses are known for being active in promoting collaborative and interdisciplinary practices in care practices. As we have seen in previous studies, we understand the importance of teamwork to optimize coping with a global pandemic. However, how to support these teams, how to promote these essential links? The answer, according to Doucette (2020), lies in the transparency of acts with the work team. According to the author, we are all learning as we go, as none of us have experience leading teams during a global pandemic. When teams have high anxiety and uncertainty, they need information, reassurance and guidance. It is also important to communicate openly, honestly and directly (DOUCETTE, 2020).

- Teaching activities

How to provide the experience of care practices to students remotely? How will the exchanges of knowledge and experiences that make up interprofessional education be present in a scenario where isolation is the priority? Strategies and digital resources that permeate health education and training for interprofessional care were improved, under the pressure and fear of the pandemic, however, they advanced significantly, leaving a fruitful legacy. Next, the textures of the related articles will be analyzed.

Digital strategies and resources

Interprofessional education (IPE) suggests sharing spaces, experiences, contexts and decisions. Social distancing measures due to the pandemic have disrupted the more traditional IPE educational offering, as reported by Liller, Pruitt and Burke (2020). The authors of this US study addressed the use of asynchronous modules and a synchronous session as a viable educational strategy in the pandemic context, with good results. It is also noteworthy that, in this process, past and current occupational and life experiences were incorporated into the program and discussion, and that students saw the immediate relevance in their fields of activity, engaging them in learning (LILLER; PRUITT; BURKE, 2020).

The strengthening of virtual learning experiences is also highlighted in the experience reports of Huang, Pulice and Sullivan (2020) and Hunger and Schumann (2020). The first report, from the United States, developed themes related to primary care with the reinvention of simulations for virtual reality. The lessons learned from the lived experience can be easily applied in future training, with better use in smaller groups, according to the authors. The second study, from Germany, describes innovative teaching methods adapted to the reality of the pandemic and which enhance interprofessional collaboration. The scarcity of time and the inconsistencies of the teams were obstacles that contributed to the improvement of training, adjusted to focus on organizational skills and time efficiency. The strengthening of the collective identity increased the participation and motivation of the participants (HUNGER; SCHUMANN, 2020).

According to Bode et al. (2021) verse, the covid-19 pandemic led to massive and abrupt changes in the training of health professionals. Especially, practical training could no longer take place in the usual way in daily clinical practice. Practical activities in the interprofessional pediatric training wards of a German University Hospital had to be suspended from March 2020. The study presented an interprofessional Replacement Program as an alternative learning format to facilitate clinical practices. In this program, nursing and pediatric medicine interns learned together, taking into account hygiene and distancing measures. Based on a case study, selected learning aspects related to cooperation and interprofessional communication are addressed. Participants report greater knowledge about the work of the other professional group in the assessment using the Interprofessional Socialization and Appreciation Scale (BODE et al., 2021).

Simulation-based training of an obstetric health team during the covid-19 pandemic was the study by Kiely, Posner and Sansregret (2020), carried out in Canada and published in the Journal of Obstetrics and Gynecology. By using strategies to maintain physical distancing during training, such as spatial separation, temporal separation, video recording, videoconferencing technologies and virtual training, safe and effective staff simulations can continue and help optimize the healthcare team's response to this pandemic still critical. As new recommendations are rapidly produced and updated at the national, international and hospital leadership levels, the simulation provides an opportunity to practice these guidelines in the field, address potential implementation issues, and provide feedback on lessons learned to inform possible guidance refinements. (KIELY; POSNER; SANSREGRET, 2020).

Triemstra et al. (2021) follow the same itinerary as Kiely, Posner and Sansregret (2020) and comment on the impact of the covid-19 pandemic on the clinical learning environment, addressing gaps and taking advantage of opportunities. According to the authors, rapid changes in organizational culture required immediate adaptations from students and educators in their complex organizational systems, although they caused greater confusion and anxiety among them. The traditional reliance on a physical infrastructure for classic educational

practices in the clinical learning environment was challenged when all institutions had to undergo a major transition to a virtual learning environment. The authors conclude that as health professions education continues in the COVID-19 era and into a new era, educators must take advantage of these dynamic systems to identify additional gaps and implement meaningful changes (TRIEMSTRA *et al.*, 2021).

Teaching and training for interprofessional care

In the Brazilian context, the SUS is the scenario responsible for ordering the training of professionals, always in an effort to respond to the context of life and health of the population. Reflecting on the dilemmas and perspectives of human resources in health in the context of the pandemic in the light of the theoretical and conceptual framework of interprofessional education was the theme of the reflective critical analysis prepared by Souza and Rossit (2020) and Alencar *et al.* (2020). According to the authors, interprofessional and collaborative work is a promising strategy for problem solving and quality of health care. Digital technologies are powerful teaching tools, because even in a context of distancing, in a pandemic scenario, it guaranteed the continuity of PET-Saúde Interprofessionalism, in the ecosystem of studies and authors, through the production of a podcast and other digital technologies. The use of the podcast proved to be a powerful tool for the production and dissemination of knowledge (SOUZA; ROSSIT, 2020; ALENCAR *et al.*, 2020).

According to Girundi, Aveiro and Uchôa-Figueiredo (2021), the redefinition of health practice in times of a pandemic in training for care was present and necessary. In the application of a module to students, using digital resources, the learning objectives were achieved, even though the practice of care was not carried out in person. The need for adjustments so that virtual interactions could occur due to the difficulty in accessing technologies is a weak point to be improved, as the authors point out. Another major challenge is to adapt digital technologies and experience them with students who had not yet carried out practical activities, since the execution of the module in a virtual way happened with students who had already carried out activities in loco (GIRUNDI; AVEIRO; UCHÔA-FIGUEIREDO, 2021).

The Brazilian Constitution makes clear the responsibility of the state for the health of its citizens. The SUS supports, in its regionalized and hierarchical network, comprehensive care and universal access, free of charge and equitably. If we thought of a system antagonistic to the Brazilian one, we would think of the American model. Salib et al. (2021) portray American healthcare as expensive, fragmented, and often ineffective. Care transitions are a moment of fragility, especially in the pandemic, when these vulnerabilities have been exacerbated. The participation of medical students in the transition of patient care, through virtual participation in interdisciplinary rounds, is a valuable educational instrument, an experience through which the importance of work and the interprofessional team is valued. Furthermore, an appreciation of the flaws of the current system is critical as students begin to reimagine, explore, and design patient-centered and improved systems for the future (SALIB et al., 2021).

Final considerations

This integrative review aimed to characterize the bibliographic products related to collaborative practices and interprofessionality in health care and teaching activities in the context of the covid-19 pandemic. The sample of 21 articles was divided into two categories, called “assistance activities” and “teaching activities”, with dialogic intertwining the categories and subcategories derived from these, in order to encourage the intersection and discussion of studies. From the sample, we observed a predominance of Brazilian studies, about half of the publications, followed by those from the United States. Experience reports predominated in almost half of the samples, and the category of assistance activities obtained the majority, compared to teaching activities.

In the emphasis on care activities, regardless of the technological density of care, we note the potential use of digital resources in the care provided to patients, at all levels of complexity of the health system. Telemedicine gained more notoriety and space, along with interprofessionality and collaborative practices in critical patient care. In primary care, interdisciplinary practices in decisions when facing the

pandemic, with contingency actions, in order to protect users and teams, were also evidenced.

In teaching activities, the strategies and digital resources that permeate health education and training for interprofessional care were improved, with emphasis on the strategies and digital resources implemented, the strengthening of experiences and virtual learning. Digital technologies proved to be powerful didactic tools, because even in a context of distance, they allowed the continuity of teaching and learning activities. In the analyzed experience reports, interprofessional and collaborative work stood out as a promising strategy in the resolution and quality of health care.

The questioning of the title and those carried out throughout the text are provocations, since the answers to them depend on the individual and collective perceptions of the readers of this study and of the studies that were part of this construction. The emphases of the review texts took place in an optimistic perspective, with predominantly positive highlights that permeated teaching and assistance in the conjuncture of the 21 months of the pandemic. The counterpoint of the present study can be based on reports and studies that deal with the damage linked to health services and education in the “transpandemic” period and, mainly, in the post-pandemic period.

Collaborative practices gained evidence, as the engine of actions that needed to be designed quickly and effectively. The “other” became evident, a fact that was not so frequent before. The “other” can be the other profession, the other discipline, the other co-worker, the other knowledge, the other experiences. We understand that “inter” is more powerful than “multi”; that sharing decisions and actions strengthens care teams and strengthens teaching.

In short, the study showed that collaborative practices and interprofessionality permeated health care and teaching activities, in the context of the COVID-19 pandemic, through care and teaching scenarios, through the enhancement of the use of digital resources, whether in the pedagogical bias, or in the resolution and operationalization of direct care for patients and their needs, in the light of these different perspectives, shadings and intentions, pointed out by the research, in its various scenarios and practices.

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