Original Article

TEXTO & CONTEXTO ENFERMAGEM
TEXT & CONTEXT NURSING TEXTO & CONTEXTO ENFERMERÍA

ELEMENTS OF INTERPROFESSIONAL EDUCATION IN THE CURRICULUM OF MULTIPROFESSIONAL RESIDENCY PROGRAMS IN HEALTH: A DOCUMENTARY STUDY

Sâmara Fontes Fernandes[1]
Rodrigo Jácob Moreira de Freitas[2]
Maria Rocineide Ferreira da Silva[1]
Lucas Souza Leite[3]
Jaira Gonçalves Trigueiro[1]
Marcio Adriano Fernandes Barreto[1]
Themis Cristina Mesquita Soares[4]

[1]Universidade Estadual do Ceará, Programa de Pós-Graduação em Cuidados Clínicos em Enfermagem e Saúde. Fortaleza, Ceará, Brasil.
[2]Universidade do Estado do Rio Grande do Norte, Departamento de Enfermagem. Pau dos Ferros, Rio Grande do Norte, Brasil.
[3]Hospital Regional Dr Cleodon Carlos de Andrade. Pau dos Ferros, Rio Grande do Norte, Brasil.
[4]Universidade do Estado do Rio Grande do Norte, Programa de Pós-Graduação em Planejamento e Dinâmicas Territoriais no Semiárido. Pau dos Ferros, Rio Grande do Norte, Brasil.

ABSTRACT

Objective: to examine the interprofessional education elements present in the integrated curricula of the Multiprofessional Residency Programs in Health in the cities from inland Rio Grande do Norte.
Method: a documentary research study based on the analysis of three Pedagogical Course Projects with a quantitative approach. The data were extracted with the aid of an adapted instrument, processed in the Iramuteq software, presented in charts and in a dendrogram and analyzed by thematic categories and interpretively.
Results: the text *corpus* was built from the organization of all the information through the adapted instrument and subsequently analyzed in Iramuteq through Descending Hierarchical Classification. The emergence of two main classes was identified: Class 3, which was subdivided into classes 1 and 2; and Class 4. From the keywords found in the dendrogram corresponding to each Class and their statistical similarity, it was possible to organize the classes into analysis categories, as follows: Class 3 – Interprofessional Education: Actors, contexts and strategies; and Class 4 – Methodological and evaluative strategies for building interprofessional competencies and skills. Through the Pedagogical Course Projects, a training process that values the development of competencies for teamwork, interprofessional and comprehensive care is indicated, based on the guiding principles of interprofessional education.
Conclusion: there is an effort by the pedagogical projects to point to an integrated curriculum based on Interprofessional Education since, in their theoretical framework, they contribute fundamental principles for developing the teaching-learning process.

DESCRIPTORS: Curriculum. Interprofessional education. Graduate studies. Interdisciplinary practices. Competency-based education.

HOW CITED: Fernandes SF, Freitas RJM, Silva MRF, Leite LS, Trigueiro JG, Barreto MAF, Soares TCM. Elements of interprofessional education in the curriculum of multiprofessional residency programs in health: a documentary study. Texto Contexto Enferm [Internet]. 2023 [cited YEAR MONTH DAY]; 32:e20230105. Available from: https://doi.org/10.1590/1980-265X-TCE-2023-0105en

ELEMENTOS DA EDUCAÇÃO INTERPROFISSIONAL NO CURRÍCULO DAS RESIDÊNCIAS MULTIPROFISSIONAIS EM SAÚDE: ESTUDO DOCUMENTAL

RESUMO

Objetivo: examinar os elementos da educação interprofissional presentes nos currículos integrados das Residências Multiprofissionais em Saúde nas cidades do interior do Rio Grande do Norte.
Método: pesquisa documental a partir da análise de três Projetos Pedagógicos de Curso com abordagem quantitativa. Os dados foram coletados de novembro de 2022 a janeiro de 2023 e extraídos com auxílio de um instrumento adaptado, processados no *software* Iramuteq, apresentados em quadros, dendograma e analisados por categorias temáticas e interpretativamente.
Resultados: o *corpus* textual foi construído a partir da organização das informações através do instrumento adaptado e, logo após, analisado no Iramuteq por meio de Classificação Hierárquica Descendente. Identificou-se o surgimento de duas classes principais: a Classe 3, que se subdividiu em classe 1 e 2; e a Classe 4. A partir das palavras-chaves presentes no dendrograma de cada Classe e sua similaridade estatística, foi possível organizar as classes em categorias de análises, sendo: Classe 3 – Educação interprofissional: Atores, contextos e estratégias; e Classe 4 – Estratégias metodológicas e avaliativas para a construção de competências e habilidades interprofissionais. Indica-se, através dos Projetos Pedagógicos de Curso, um processo formativo que valoriza a construção de competências para um trabalho em equipe, interprofissional e cuidado integral, a partir de princípios norteadores da educação interprofissional.
Conclusão: há um esforço dos projetos pedagógicos em apontar para um currículo integrado fundamentado em Educação Interprofissional, visto que trazem, em seu arcabouço teórico, princípios fundamentais para o desenvolvimento do processo ensino-aprendizagem.

DESCRITORES: Currículo. Educação interprofissional. Educação de pós-graduação. Práticas interdisciplinares. Educação baseada em competências.

ELEMENTOS DE LA EDUCACIÓN INTERPROFESIONAL EN LOS PLANES DE ESTUDIOS DE LOS PROGRAMAS DE RESIDENCIA MULTIPROFESIONALES EN SALUD: ESTUDIO DOCUMENTAL

RESUMEN

Objetivo: examinar los elementos de la educación interprofesional presentes en los planes de estudios integrados de los Programas de Residencia Multiprofesionales en Salud en las ciudades del interior do Rio Grande do Norte.
Método: investigación documental a partir del análisis de tres Proyectos Pedagógicos de Carreras Universitarias con enfoque cuantitativo. Los datos se extrajeron con la ayuda de un instrumento adaptado, se los procesó en el programa de *software* Iramuteq, se presentaron en forma de cuadros y de dendrograma y se los analizó por categorías temáticas y en forma interpretativa.
Resultados: el *corpus* de texto se elaboró a partir de organizar toda la información en el instrumento adaptado e, inmediatamente después, se lo analizó en Iramuteq por medio de Clasificación Jerárquica Descendente. Se identificaron dos clases principales: a Clase 3, que se subdividió en las clases 1 y 2; y Clase 4. A partir de las palabras clave presentes en el dendrograma de cada Clase y su similitud estadística, fue posible organizar las clases en categorías de análisis, a saber: Clase 3 – Educación interprofesional: Actores, contextos y estrategias; y Clase 4 – Estrategias metodológicas y evaluativas para desarrollar competencias y habilidades interprofesionales. A través de los Proyectos Pedagógicos de Carreras Universitarias, se señala un proceso formativo que valoriza el desarrollo de competencias para trabajo en equipo, interprofesional y cuidado integral, a partir de principios guía de la educación interprofesional.
Conclusión: los proyectos pedagógicos se esfuerzan por indicar el camino a un plan de estudios integrado y fundamentado en la Educación Interprofesional, puesto que incluyen principios fundamentales para desarrollar el proceso de en enseñanza-aprendizaje en su marco teórico.

DESCRIPTORES: Plan de estudios. Educación interprofesional. Educación de postgrado. Prácticas interdisciplinarias. Educación basada en competencias.

INTRODUCTION

Multiprofessional Residency Programs in Health (MRPHs) consist of an innovative proposal that grounds training through teaching-service-community integration, interdisciplinarity and technical, political and managerial competencies developed collectively and which are the basis of teamwork, being able to build care models and collaborative and resolute health practices for the complex demands of the health sector. In addition to that, MRPHs are capable of transforming health services, given the close integration between professors, preceptors and residents willing to critically reflect and act on reality[1].

In this perspective, Multiprofessional Residency Programs in Health (MRPHs) are recognized as a training space that allows sharing knowledge and developing attitudes, behaviors, skills and competences required for the effective implementation of interprofessional teamwork[2] and that, above all, manages to extrapolate the existing barriers between the different health professions. It is a proposal supported by the Brazilian Ministry of Health since 2002, although it was only regulated in 2005[3].

It consists of teaching-learning spaces capable of developing Interprofessional Education (IPE) as a strategy committed to preparing workers for interprofessional collaboration and teamwork, intersectorally articulated to meet the growing complexity of the population's care needs, focusing on comprehensiveness and, consequently, impacting on improving education, work dynamics and health[4].

However, for this it is necessary to effectively implement an integrated curriculum that points to the principles of interprofessional education, as it influences greater availability for teamwork by students and the development of basic competencies for interprofessional work[5].

The integrated curriculum develops a teaching-learning process that encourages recognition of concepts in a system of totality based on dynamic and dialectical relationships, that is, it is an interdisciplinary construction proposal for global understanding of knowledge by different knowledge centers[6–7]. It grounds the development of a renewing practice in health, which better meets the complex social needs of today's globalized world, requiring new ways of working more in line with new technologies, overcoming limitations and meeting the principles of the Unified Health System (*Sistema Único de Saúde*, SUS)[8].

It is known that MRPHs are capable of transforming the health reality of the territories where they are implemented, qualifying health care and the professional practice. In this training, the objective is to strengthen interdisciplinary teams and interprofessional teamwork, considering workers not only as professionals, but also as historical subjects involved in the social processes of the realities experienced, which eases the development of a training process directed at transforming reality and facing everyday challenges[9–10].

In this regard, it is important to differentiate between interdisciplinarity and interprofessionality, as the first concept is related to the integration of disciplines and to knowledge compartmentalization, whereas the second one is the development of integrated practices by different professional categories that reflect in high-impact and good quality teamwork[1–5]. Given this, the question is as follows: Which interprofessional education elements are present in the curricula of multiprofessional residency programs in health in cities from inland Rio Grande do Norte (RN)?

Thus, the study proves to be relevant because, with the increasing number of MRPHs throughout the national territory and with the Higher Education geographical internalization project, there was an important expansion and decentralization of residency programs throughout the country, with a significant concentration in the Southeast (46.3%) and Northeast (20.6%) regions, mainly from 2009 to 2015[11], which points to the need to evaluate these curricula. In addition to that, there is scarcity of studies that analyze the MRPH curricula, especially when it comes to inland regions.

Faced with this reality, it is important to emphasize that the performance of the residency programs in territories of social vulnerability such as in cities in the inland of the country reverses health care quality, guarantees exposure of the social and territorial health needs responsible for guiding the health practices and encourages the elaboration and implementation of public health policies, in addition to helping retain qualified health professionals in the regions, effectively allowing care integrality as well as team and interprofessional work, thus transforming the training process in health and creating a new health intervention culture[10–12].

Thus, the objective is to examine the interprofessional education elements present in the curricula of Multiprofessional Residency Programs in Health in the cities from inland Rio Grande do Norte.

METHOD

This is a study from a documentary survey with a quantitative approach and deductive logic, developed from the Pedagogical Course Projects (PCPs) of the Multiprofessional Residency Programs in Health of cities from inland Rio Grande do Norte (RN), adopted as official documents that supported the documentary analysis, helping to understand the research question.

It was developed in the state of Rio Grande do Norte at public Higher Educational Institutions (HEIs). RN has three major public HEIs: *Universidade Federal do Rio Grande do Norte* (UFRN), *Universidade do Estado do Rio Grande do Norte* (UERN) and *Universidade Federal Rural do Semiárido* (UFERSA), decentralized across the state's territory. After a search on the institutions' official websites, it was identified that only UFRN and UERN offer MRPHs.

Initially, a total of eight MRPHs were identified throughout the state's territory, directed to different performance areas and linked to UFRN and UERN, headquartered in four municipalities: Natal, Santa Cruz, Caicó and Mossoró. However, envisioning the geographical internalization of health training from the perspective of the *lato sensu* graduate courses of the MRPHs, it was decided to work with programs located in cities from inland RN. Therefore, as research loci,04 MRPHs were included that meet this criterion, namely: Multiprofessional Residency Program in Maternal-Child Health (UFRN/Santa Cruz), Multiprofessional Residency Program in Maternal and Child Health (UFRN/Caicó), Multiprofessional Residency Program in Primary Care (UFRN/Caicó) and Multiprofessional Residency Program in Primary Care and Family Health (UERN/Mossoró).

Data collection, in search of PCPs and on official websites of the HEIs, took place between November 2022 and January 2023, selecting all projects from the programs included. Thus, the final sample comprised the PCPs from the four MRPHs of both public HEIs.

An instrument adapted from Barr[13] was used for data collection from PCPs. It lists 18 guiding questions for the analysis of interprofessional education practices where, by reading and collective discussions, the researchers gradually organized the diverse information and answered all questions with excerpts from the PCPs in the instrument. Any and all disagreements were discussed and solved by the guiding professor. Thus, it was possible to obtain data related to: course objective, collaborative practice, care quality improvement, compatible goals and objectives, interprofessional learning, theoretical framework, evidence-based practice, interprofessional values, shared and common learning, interactive learning methods, learning in groups, participants, planning, participation of users and caregivers in the learning process, assessment of interprofessional learning, qualification, assessment of the program, and dissemination of results.

Each PCP was read individually, extracting data from the collection instrument. All the information regarding the content of the projects made up the *corpus* and was organized in the Libre Office Writer program, version 5.3, following specific guidelines for building the database.

Thus, each PCP was coded and numbered sequentially as the data were collected (Example: MRPH_01). The text *corpus* was organized in a monothematic way, assembled by the set of three abstracts and analyzed in Iramuteq. It is worth mentioning that the MRPH at the UFRN Caicó campus has only one PCP for both programs, highlighting the specificities of each course.

The qualitative data were processed using the Iramuteq software, version 0.7 alpha 2, which is anchored in the statistical environment of the R Program and in the Python computational language.

As a priority analysis modality, multivariate analysis was chosen based on the Word Cloud, Similarity Analysis and Descending Hierarchical Classification (DHC), which divides the *corpus* into classes, groups the words according to the greatest association between them and presents the percentage of representation in the *corpus* under study, in order to help identify the structure represented by the PCPs. The data were presented, descriptively, in thematic categories and analyzed in an interpretative way, being discussed according to the pertinent literature.

In relation to the study ethical aspects, it was approved by the Research Ethics Committee (*Comitê de Ética em Pesquisa*, CEP) of *Universidade Estadual do Ceará* (UECE), complies with the ethical aspects and is in accordance with Resolution No. 506 of 2016.

RESULTS

Iramuteq processed the text *corpus* and recognized the 03 text units corresponding to the number of PCPs obtained, 216 text segments,7,460 occurrences of words with 1,746 forms, of which 1,335 were active forms (analyzable words that indicate meaning, according to what the PCPs presented) and 39 additional forms. The number of active forms with frequency was >3.446, the mean of forms per segment was 34.537037 and the number of clusters was 04, which constitute groupings based on frequency. An index of 76.85% leverage of the texts was obtained, above the recommended mean value to obtain efficient data.

Figure 1 shows the word cloud that graphically illustrates the frequency and grouping of the words processed in the text *corpus*.

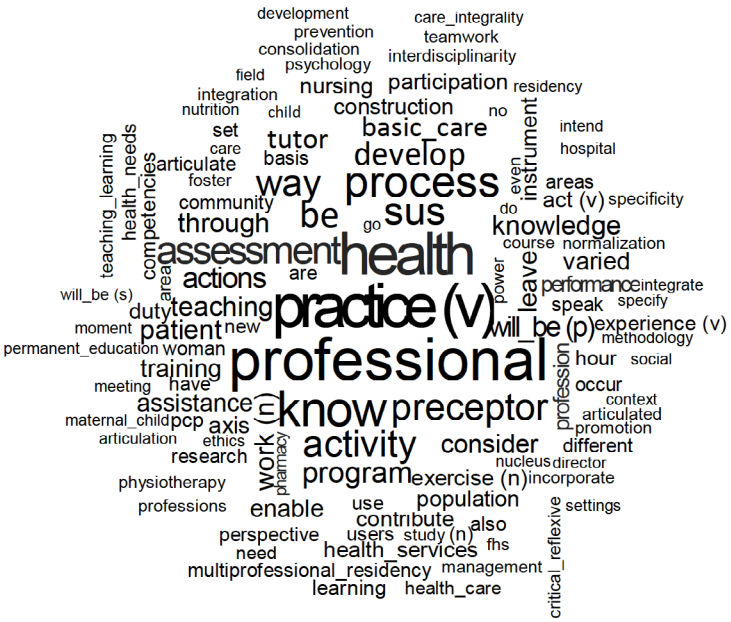

Figure 1 – Word cloud. Mossoró, RN, Brazil, 2023.

In the word cloud we can notice the occurrence of significant words for a discussion of the integrated curriculum based on IPE in MRPHs, such as: professional, practices, health, SUS, know, activity, program, assessment, process (n), develop, preceptor, tutor, construction, health needs, competencies, permanent education, integration, participation, articulation, teamwork, interdisciplinarity and learning, among others.

Figure 2 shows the similarity analysis, which indicates the co-occurrences between the words and the connections between them, indicating the structure of the text *corpus* content, as well as the common and specific parts of the descriptive variables.

Figure 2 – Similarity analysis. Mossoró, RN, Brazil, 2023.

Based on the similarity analysis, the presence of core communities and their branches is identified, according to the frequency with each words appears in the *corpus*, also showing their similarity and connections between them and with other branches. The main communities identified are “practice (v)” and “professional”, in which it is noticed that the first one branches out into important concepts such as knowledge, construction, problematizing, integrated curriculum, interdisciplinary training, comprehensive care and interprofessionality. In the second one we find performance, interdisciplinarity, competencies, training, co-accountability, co-participation, health services and relationships.

The other communities are less frequent but are of great importance to fully understand Figure 2. In the “process (n)” graph, the concepts of teamwork, teaching-learning, participatory, health needs, theoretical and conceptual experiences and strengthening can be seen. The second graph has two main concepts, “SUS” and “Health”, with the nodes of the first being health care, care network, management and principles and, for the second: intersectoriality, interdisciplinarity, interdisciplinary practice, health workers and responsibility, respectively.

In the “actions” graph, the occurrence of care integrality, SUS network, and regional group and locus can be seen. In the “activity” and “assessment” communities, which are related, there is branching out into health team, patient, work (n), planning, decision-making, competence, integration, shared learning and permanent education. Finally, the last graph (“program”) relates to residency programs, articulate, preceptor, tutor, teacher, multiprofessional team, line of care and pedagogical project. From the similarity analysis, it can be inferred that the communities and their branches show the relationship and occurrence of core concepts for the integral curriculum, interprofessional practice and interprofessional education.

Figure 3 shows a dendrogram that illustrates the DHC resulting from processing the text *corpus*, which organizes its textual segments, lexical vocabulary, frequency and Chi-square (X^2) by classes of the text segments from each class.

Word	Freq.	X²
Moment	8	21.9
Preceptoy	12	13.4
Planning/ Territory/Result	5	13.4
Set	8	11.9
Will be (p)	11	11.2
Occur/Meeting/ Topic/Check/ Work (v)/ Aforementioned/ Seminar/ Evidence (v)	4	10.6
Study (n)	5	9.6

Word	Freq.	X²
SUS	22	29.2
Teaching	11	22.5
Contribute	10	20.3
Interdisciplinarity	8	16
Principles	7	13.9
Assistance	8	12.5
Permanent education	8	12.5
Health care	6	11.9
Research	9	11.7
Users	7	10.5
Integration	7	10.5
New/Mode/Improvement/ Student/Improve/ Services	5	9.8

Word	Freq.	X²
Interdisciplinary practice/ Contemplate	6	28.2
Ethics	7	27.3
Health policies/ Citinzenship	5	23.3
Humanization	7	22.9
Bonding	6	22.5
Discipline	4	18.5
Training	8	18
Policy	5	17.9
Axis	7	16.5
Health	13	15.7
Context	6	15.1
Recognition/Thematic axes/Bioethics	3	13.8

Word	Freq.	X²
Prevention	8	33.8
Rehabilitation	7	29.4
Promotion	8	28.4
Respond/OSCE/ MiniCex	6	25
Teaching-learning	8	24.1
Instrument/ Care integrality/ Critical-reflexive	7	24.1
Articulate	9	21.5
Supportive/Continue	5	20.7
Assessment	11	19.4
Activity	12	17.4
Include	4	16.5

Figure 3 – Dendrogram. Mossoró, RN, Brazil, 2023.

The dendrogram presents four classes that constitute algorithm-based classifications. In the distribution, the text *corpus* branches into subsets of keywords. It is noticed that the first branch is Class 3, which is subdivided into classes 1 and 2 and then, through a second branch, Class 4 appears. In addition to that, it is possible to see their percentage participation in the total texts, with Class 1 as the largest class with 34.3% of valid terms, followed by Class 3 with 27.7%, which in turn is followed by Class 4 with 19.9% and, finally, by Class 2 with 18.1%.

From the keywords present in the dendrogram and their statistical similarity, it was possible to classify the classes into analysis categories and subcategories. Class 3 will be considered a core category called “Interprofessional education: Actors, contexts and strategies”, which will be subdivided into two subcategories: Class 1 called “Objectives of interprofessional teaching” and Class 2 called “Competencies and skills built in the teaching-service-community relationship”. Class 4 will also be considered as a core category: “Methodological and evaluative strategies for building interprofessional competencies and skills”.

When evaluating the clusters represented in Figure 3, it can be seen that, in Class 3 – Interprofessional Education: Actors, contexts and strategies, there are words such as: moment, preceptor, planning, territory, set, meeting, topic, conference, seminar, study (n) and result, among others. It can be inferred that the discourse categorized in this class is related to the planning of activities developed in the residency programs along with teaching-service in the territory, highlighting the context and actors involved in interprofessional education.

From Class 3 onwards, this discussion is sub-categorized into another two classes. Class 1 – Objectives of interprofessional teaching: it highlights the concepts of SUS, teaching, contribute, interdisciplinarity, principles, assistance, permanent education, health care and integration, among others. Indicating key concepts in the discussion about the objectives of interprofessional education, interprofessional practice and interdisciplinarity as a formative product of MRPHs.

And Class 2 – Competencies and skills built in the teaching-service-community relationship: it highlights the terms of interdisciplinary practice, contemplate, ethics, health policies, humanization, bond, discipline, training, axis, context and health, among others. The occurrence of these words points to the discussion of in-service training and the importance of the teaching-service-community relationship in the programs as an instrument of permanent education and training of competencies and skills for teamwork and interprofessional practice.

When evaluating Class 4 – Methodological and evaluative strategies for building interprofessional competencies and skills, we find the concepts of prevention, rehabilitation, promotion, respond, OSCE, Mini-Cex, teaching-learning, instrument, care integrality, critical-reflexive, articulate and assessment, among others. In this regard, it can be seen that the class discusses the normative framework that guides the integrated curriculum grounded on IPE in the MRPHs, highlighting their methodological and evaluative strategies to achieve interprofessionality.

To reassert the thematic categorization built based on the classes, which presented higher percentages of occurrence of text segments, Chart 1 presents excerpts from the PCPs related to the classes that underlie elaboration of the categories.

In this sense, it can be inferred that, in general, PCPs indicate the theoretical presence of important concepts for the discussion of the integrated curriculum based on interprofessional education. Indicating a training process that values the development of competencies for teamwork, interprofessional and comprehensive care, based on the IPE guiding principles. Consolidating the relationship between teaching-service-community and between the different knowledge fields involved in the training process, focusing on improving the quality of the health care provided in the territories.

Chart 1 – Thematic categories elaborated from the classes. Mossoró, RN, Brazil, 2023.

Categories	Subcategories	Excerpts from the PCPs
Class 3 – Interprofessional Education: Authors, contexts and strategies (27.7%)	Subcategory 1: Class 1 – Objectives of interprofessional education (34.3%)	"Contribute to the assessment of quality improvement in the care network, elaboration of protocols and permanent training and education of personnel working in the SUS. Put interdisciplinarity into practice through the integration of different knowledge fields". "Enable a broader view of the public policies and the concept of health, considering the epidemiological profile of the population and the specific knowledge of each knowledge hub, experiencing intersectoriality through the practical exercise of its specific actions at all health care levels in the SUS".
	Subcategory 2: Class 2 – Competencies and skills built in the teaching-service-community relationship (18.1%)	"Development and execution of an intervention plan at the primary and hospital care levels that contemplates the health needs of the population and articulates the thematic axes, education and citizenship, health surveillance, humanization and ethics, health communication and teamwork, and considers the specificities of the professions and interdisciplinary work". "Teamwork and intersectoral articulation, according to the health needs of the population attached to the BHU/FHS teams to which they are linked, should have solid training that allows them to exercise their professional activity with autonomy and in collaboration in a critically transforming and ethical way".
Class 4 – Methodological and evaluative strategies for building interprofessional competencies and skills (19.9%)		"For this we use assessment tools such as OSCE, Mini-Cex and portfolios. The multiprofessional residency program has as its central focus comprehensive care through the development of practical-theoretical activities that allow promotion, prevention and rehabilitation articulations". "To develop competencies and skills for comprehensive care in maternal and child care through the articulation of promotion, prevention and rehabilitation actions, with a view to care integrality in the context of university hospitals, articulated with the SUS network and preserving the specificities of the knowledge fields from the various professions in the health area".

DISCUSSION

The analysis showed that the PCPs of multiprofessional residency programs seek to apply a curriculum that integrates work and teaching, strengthening intersectoral and interdisciplinary relationships between different services and professional categories. It proposes conceiving students as active subjects in their training process, critical-reflexive and capable of building knowledge, whereas teachers and preceptors act as guides in the process. In addition to that, it follows the interprofessionality and IPE principles, seeking to develop competencies for collaborative and interprofessional practice and teamwork, in order to improve the health care quality.

It can be inferred that the concepts that appear in the word cloud are elements present in an integrated curriculum, suggesting that PCPs follow this modality. The curriculum is a pedagogical instrument that systematically guides the teaching-learning process of the courses. The integrated curriculum seeks to dynamically articulate work and teaching, theory and practice, as well as teaching and community, considering the sociocultural characteristics of the territory as a background for discussion and problem-solving. It stimulates teaching-service-community integration and adaptation of the courses to the territorial reality and its social structure, seeking to shape an active, reflexive, creative and supportive professional profile[6–7,14].

It is based on the pure integration between teaching and work and, therefore, the methodologies used should be based on activities that arise from situations in the service itself, stimulating reflection based on reality in order to develop strategies for a new action and, consequently, to transform reality. It integrates individual and collective teaching, with teachers as articulators of situations and evaluators of advances and difficulties. It is worth mentioning that the assessment must be procedural, systematic and directed to the entire training process and not merely to the students, aiming to support decision-making and estimate the possible failures and effectiveness of the teaching program[14].

According to research studies[15], traditional curricula, rigid and with little room for alternative learning, do not respond to continuous changes in society and cannot train professionals capable of acting in the practical reality of work in a creative way. Thus, integrated curricula are an alternative to transform the teaching-learning process, allowing greater flexibility of contents, interdisciplinarity and assessments related to the reality of the world of work, allowing greater dynamism and applicability of knowledge in the practical field.

One of the major challenges of implementing IPE is the reorganization of undergraduate and graduate health curricula. Thus, in a study carried out in undergraduate courses in health at *Universidade de São Paulo* (USP), it is shown that the curricula meet the guiding principles of the SUS, establish partnerships with the community and health services, encourage teamwork, have training aimed at social needs and use active methodologies based on the practical reality of the services[16].

However, although they discuss interprofessionality in the academic disciplines, they are only directed to one course, not guaranteeing interdisciplinarity, presenting predominance of uniprofessional training and focusing on the development of specific competencies. The experiences are expanded to an interprofessional nature in research and extension programs, such as *Pet-Saúde*, highlighting the role of Nursing, which has a curriculum that more effectively approaches interprofessionality and encourages teamwork[16].

Associating all this information with the similarity analysis, in which we can see the emergence of communities and their branches that show the relationship between the concepts of integrated curriculum, interprofessional practice and interprofessional education, it is inferred that the occurrence and relationship of these concepts suggest that the theoretical matrix of the PCPs ground their curricula on IPE, highlighting the importance of professional collaboration for the development of interprofessional practice, teamwork and comprehensive care.

Therefore, the integrated curriculum grounded on IPE is characterized by the opportunity for two or more professions to learn together and in an integrated way, developing skills for teamwork and professional collaboration, with the common objective of developing comprehensive patient care and improving health care quality[5,17].

It is based on interprofessional learning, which is developed in educational or practical contexts among groups of professionals during IPE, in an attempt to improve knowledge and develop skills for interprofessional teamwork. It provides opportunities for joint training sessions, learning and shared experiences on occasions when two or more professions learn together, attributing new meanings to knowledge and applying it to the practice[18].

Mini-Cex, for example, is a methodology for evaluating the students' clinical performance, which is developed in the internship fields in order to evaluate the students' skills regarding anamnesis, physical examination, professionalism, clinical judgment, counseling, organization, efficiency and overall competence. It imposes the difficulty of being an assessment in a practical and real environment, where it is not possible to control the situations experienced, although it allows an assessment based on a wide range of configurations and realities[19]. Another methodology that can be applied in group learning are animated infographics, recognized as an educational technology used in team

meetings that stimulates discussion, reflection and collective decision-making, increasing the levels of satisfaction, autonomy and problem-solving[20].

Thus, the training process based on IPE should be aimed at improving individual and collective skills to develop patient-centered care. Grounded on learning experiences that provide group dynamics, case discussions, elaboration of a Singular Therapeutic Project, etc., to strengthen communication, trust and teamwork, in order to discuss ideas, define central objectives and tasks, make decisions in a shared way, assume accountability and manage conflicts[21].

The findings in the word cloud and similarity analysis are reasserted from the DHC analysis: better reorganizing the concepts and their relationships, according to the text *corpus*; inferring that the PCPs show a theoretical organization of an integrated curriculum based on IPE: and showing in more detail the actors involved, necessary strategies, teaching-service and community relationship, and competencies and skills developed from an interprofessional teaching.

Thus, it is necessary to reassert that the teaching-service integration is an extremely important strategy for health education, based on which it is possible to enable transformations in the training model, health care model and professional practices. It is based on collective and integrated work with the involvement of several social actors who, in turn, perform functions in the health services, in the HEIs and in the community that act collectively in search of improving health care quality[22].

In this context, it is possible to prepare health course graduates to efficiently work different practical scenarios, developing competencies and skills that value teamwork, collaboration and subject-centered care, favoring more autonomous, interdisciplinary practices and comprehensive care[23].

A number of studies show that students attending courses with an integrated curriculum based on IPE and with more interprofessional learning experiences present greater clarity of roles and responsibilities in their expertise area throughout the course and that, in the others, they are more collaborative, communicative and more likely to indulge in teamwork, which exerts a positive impact on health practices[24].

Within the scope of MRPHs, in-service teaching is developed, which allows learning from the daily experience of the reality of health services, shaping competencies and skills in students related to leadership, management, clinical activity and interpersonal relationships[25].

Belo Horizonte offered an example with the implementation of the multiprofessional residency program in Mental Health, where the residents assumed strategic roles throughout the state building an exchange network, conducting cases, rebuilding practices and reorganizing the Belo Horizonte Psychosocial Care Network[26].

As was the case in the study[27] conducted with the MRPHs from São Paulo, which showed that the close interaction between different professions participating in the MRPHs allows sharing knowledge and clarifying the professional roles they assume within the team. Thus, it is possible to denote that shared care, home visits and intersectoral work increase co-accountability of the social actors involved and training for interprofessional collaboration.

Therefore, in-service training, developed by the MRPHs, aims at overcoming uniprofessional and fragmented training in health, creating a privileged space for interdisciplinary action in the reality of work, with the potential to develop new care technologies and pedagogical practices, such as IPE, especially when considering regional aspects and territorial needs, directing teaching committed to its social responsibilities and to the development of interprofessional teamwork[28].

In addition, a number of studies point out that the transformation of practices in health services is a common result of the formation of all MRPHs, mainly in territories of greater social vulnerability, as MRPHs qualify the work processes, include new interventions in health services, strengthen professional collaboration and develop interdisciplinary care. Even facing difficulties and dilemmas

during the training process, which are potentiated in inland cities, as they still face challenges of a structural, human and institutional nature[11].

Thus, it is possible to infer that the pedagogical projects analyzed indicate an integrated curriculum based on IPE; however, it is not possible to assert that it is consolidated in the practice, as an observational study or one with MRPH actors would be necessary to be able to glimpse at the *modus operandi* in the practice of MRPHs, which can be recognized as a study limitation and/or as a suggestion for complementary research.

However, it is important to reassert that the study itself offers contributions to the practice from the moment it identifies a pedagogical structure in residency programs located in the inland of the state of RN, which are concerned with and envision the need for shaping a new and more professional profile, articulated and flexible, which can qualify and remain in these territories transforming practices and contributing to the teaching-learning process and to improving health care quality.

CONCLUSION

From the data analyzed, it can be inferred that the PCPs of the MRPHs from the cities in inland RN make an effort to meet the integrated curriculum based on IPE, showing that its pedagogical structure follows the basic principles for the development of the teaching-learning process.

From the textual analyses performed, the prevalence of central concepts is indicated, such as interdisciplinarity, interdisciplinary practice, professionals, teamwork, integration, articulation and competencies, as well as the important relationships in their discussion with the integrated curriculum and interprofessional education, evidencing interprofessional practice as an important product of training in residency programs, achieved through a methodological structure of the courses, interprofessional and intersectoral collaboration and the teaching-service-community integration present in the territories. However, it is important to point out that the curriculum is a teaching project and may not be consolidated in the practice of the courses, in addition to the fact that Nursing presents itself as the knowledge core that is more receptive to collaborative work.

However, it was not possible to identify the influence of the programs in the loco-regional context of the state, as there was insufficient information about the territoriality of these programs. In this way, it is suggested to carry out observational research studies or with the social actors involved in the *in loco* development of these residency programs, in order to compare the documentary findings.

REFERENCES

1. Miranda Neto MV, Leonello VM, Oliveira MAC. Residências multiprofissionais em saúde: Análise documental de projetos político-pedagógicos. Rev Bras Enfermagem [Internet]. 2015 [cited 2023 Jan 30];68(4):586-93. Available from: https://doi.org/10.1590/0034-7167.2015680403i
2. Reeves S, Tassone M, Parker K, Wagner SJ, Simmons B. Interprofessional education: An overview of key developments in the past three decades. Work [Internet]. 2012 [cited 2023 Jan 30];41(3):233-45. Available from: https://doi.org/10.3233/WOR-2012-1298
3. Ministério da Saúde (BR). Residência multiprofissional em saúde: Experiências, avanços e desafios [Internet]. Brasília, DF(BR): Ministério da Saúde; 2006 [cited 2023 Jan 30]. 415 p. Available from: https://bvsms.saude.gov.br/bvs/publicacoes/residencia_multiprofissional.pdf
4. Costa MV, Silva JAM, Regis CG, Peduzzi M. Educação interprofissional no Brasil: Desafios e agenda para o futuro. In: Dias MAS, Vasconcelos MIO, organizators. Interprofissionalidade e colaboratividade na formação e no cuidado no campo da atenção primária a saúde. Sobral, CE(BR): Edições UVA; 2021 [cited 2023 Jan 30]. p. 35-57. Available from: https://renasf.fiocruz.br/wp-content/uploads/2023/04/LIVROI1.pdf

5. Reeves S, Fletcher S, Barr H, Birch H, Boet S, Davies N, et al. A BEME systematic review of the effects of interprofessional education: BEME Guide No. 39. Med Teach [Internet]. 2016 [cited 2023 Jan 30];38(7):656-68. Available from: https://doi.org/10.3109/0142159X.2016.1173663

6. Davini MC. Currículo integrado. In: Brasil. Ministério da Saúde. Coordenação Geral de Desenvolvimento de Recursos Humanos para o SUS. Capacitação pedagógica para instrutor/supervisor-área da saúde [Internet]. Brasília, DF(BR): Ministério da Saúde; 1994 [cited 2023 Jan 30]. p. 39-58. Available from: https://pesquisa.bvsalud.org/controlecancer/resource/pt/lil-79631

7. Souza PA, Zeferino AMB, Da Ros MA. Currículo integrado: Entre o discurso e a prática. Rev Bras Educ Med [Internet]. 2011 [cited 2023 Jan 30];35(1):20-5. Available from: https://doi.org/10.1590/S0100-55022011000100004

8. Dallegrave D, Ceccim RB. Encontros de aprendizagem e projetos pedagógicos singulares nas residências em Saúde. Interface [Internet]. 2018 [cited 2023 Jan 30];22(66):877-87. Available from: https://doi.org/10.1590/1807-57622017.0020

9. Torres RBS, Barreto ICHC, Freitas RWJF, Evangelista ALP. Estado da arte das residências integradas, multiprofissionais e em área profissional da Saúde. Interface [Internet]. 2019 [cited 2023 Jan 30];23:e170691. Available from: https://doi.org/10.1590/Interface.170691

10. Casqueiro ML, Irffi G, Silva CC. A expansão das Universidades Federais e os seus efeitos de curto prazo sobre os Indicadores Municipais. Avaliação: Rev Aval Educ Superior [Internet]. 2020 [cited 2023 Jan 30];25(1):155-77. Available from: https://doi.org/10.1590/S1414-40772020000100009

11. Flor TBM, Cirilo ET, Lima RRT, Souza PHS, Noro LRA. Formação na Residência Multiprofissional em Atenção Básica: revisão sistemática da literatura. Ciênc Saúde Coletiva [Internet]. 2022 [cited 2023 Jan 30];27(3):921-36. Available from: https://doi.org/10.1590/1413-81232022273.04092021

12. Sales ECSS, Rosim R, Ferreira VRS, Costa SHB. O programa de apoio a planos de Reestruturação e Expansão das Universidades Federais (REUNI): Uma análise de seu processo de avaliação. Rev Avaliação Educ Superior [Internet]. 2019 [cited 2023 Jan 30];24(3):658-79. Available from: https://doi.org/10.1590/S1414-40772019000300006

13. Barr H. Ensuring quality in interprofessional education. CAIPE Bulletin. 2003;(22):2-3.

14. Dourado DL. Currículo e currículo integrado: Teorias e concepções. Rev Pol Lat Am [Internet]. 2023 [cited 2023 Jan 30];23(1):115. Available from: https://doi.org/10.53660/reuni.v23n1.115

15. Gul R, Khilji G. Exploring the need for a responsive school curriculum to cope with the Covid-19 pandemic in Pakistan. Prospects (Paris) [Internet]. 2021 [cited 2023 Jan 30];51(1-3):503-22. Available from: http://doi.org/10.1007/s11125-020-09540-8

16. Mazzi NR, Barbosa SBM, Vasconcelos RO, Souza CMS, Blanco VM, Germani ACCG, et al. Interprofessional education at a Brazilian public university: A document analysis. Heliyon [Internet]. 2023 [cited 2023 Jan 30];9(2):e13421. Available from: https://doi.org/10.1016/j.heliyon.2023.e13421

17. Uchôa PA. Estágio integrado em Saúde e aprendizagem interprofissional: percepção dos discentes [dissertação]. Maceió, AL(BR): Faculdade de Medicina, Universidade de Alagoas; 2018. 102 p.

18. Barr H, Low H, organizators. Introdução a educação interprofissional [Internet]. CAIPE; 2013 [cited 2023 May 10]. 40 p. Available from: https://www.observatoriorh.org/sites/default/files/webfiles/fulltext/2018/pub_caipe_intro_eip_po.pdf

19. Norcini JJ, Blank LL, Duffy FD, Fortna GS. The mini-CEX: A method for assessing clinical skills. Ann Inter Med [Internet]. 2003 [cited 2023 Jan 30];138(6):476-81. Available from: https://doi.org/10.7326/0003-4819-138-6-200303180-00012

20. Dorneles LL, Martins VP, Morelato CS, Goes FSN, Fonseca LMM, Camargo RAA. Development of an animated infographic on Permanent Health Education. Rev Lat Am Enfermagem [Internet]. 2020 [cited 2023 Jan 30];28:e3311. Available from: https://doi.org/10.1590/1518-8345.3536.3311

21. Peduzzi M, Oliveira MAC, Silva JAM, Agreli HLF, Miranda Neto MV. Trabalho em equipe, prática e educação interprofissional [Internet]. 2nd ed. Barueri, SP(BR): Manole; 2016 [cited 2023 Jan 30]. 1043 p. Available from: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjmu7mh7J-AAxXIJrkGHQsnBscQFnoECB4QAQ&url=https%3A%2F%2Frepositorio.usp.br%2Fitem%2F002742133&usg=AOvVaw05UJV8h-DwKEZEzD-KwPDr&opi=89978449

22. Ramos TK, Nietsch EA, Backes VMS, Cogo SB, Salbego C, Antunes AP. Teaching-service integration in supervised internship in nursing: The perspective of nursing supervisors, professors and manager. Texto Contexto Enferm [Internet]. 2022 [cited 2023 Jan 30];31:e20210068. Available from: https://doi.org/10.1590/1980-265X-TCE-2021-0068

23. Silva LGMS, Takenami I, Palácio MAV. A abordagem da medicina narrativa no processo de ensino-aprendizagem nas graduações das profissões da saúde. Rev Bras Educ Med [Internet]. 2022 [cited 2023 Jan 30];46(2):e063. Available from: https://doi.org/10.1590/1981-5271v46.2-20210202

24. Zamjahn JB, Beyer EO, Mercante DE, Carter KL, Gunaldo TP. Increasing awareness of the roles, knowledge, and skills of respiratory therapists through an interprofessional education experience. Respir Care [Internet]. 2018 [cited 2023 Jan 30];63(5):510-8. Available from: https://doi.org/10.4187/respcare.05869

25. Martins JC, Sá LMA, Kluthcovsky ACGC. O ensino-aprendizagem nas residências em saúde: Uma revisão sistemática. Ciência ET Praxis [Internet]. 2022 [cited 2023 Jan 30];15(29):73-87. Available from: https://doi.org/10.36704/cipraxis.v15i29.6440

26. Lima ICBF, Passos ICF. Residências integradas em saúde mental: Para além do tecnicismo. Trab Educ Saúde [Internet]. 2019 [cited 2023 Jan 30];17(2):e0020940. Available from: https://doi.org/10.1590/1981-7746-sol00209

27. Araújo HPA, Santos LC, Domingos TS, Alencar RA. Multiprofessional family health residency as a setting for education and interprofessional practices. Rev Lat Am Enfermagem [Internet]. 2021 [cited 2023 Jan 30];29:e3450. Available from: http://doi.org/10.1590/1518-8345.4484.3450

28. Reeves S. Porque precisamos da educação interprofissional para um cuidado efetivo e seguro. Interface Commun Heal Educ [Internet]. 2016 [cited 2023 Jan 30];20(56):185-96. Available from: https://doi.org/10.1590/1807-57622014.0092

NOTES

ORIGIN OF THE ARTICLE

Extracted from the theses – Training in Multiprofessional Residency Programs in Health from the cities in inland Rio Grande do Norte in the light of Interprofessional Education, presented to the Graduate Program in Clinical Nursing and Health Care of *Universidade Estadual do Ceará*, in 2023.

CONTRIBUTION OF AUTHORITY

Study design: Fernandes SF, Freitas RJM, Silva MRF.
Data collection: Fernandes SF, Freitas RJM, Leite LS.
Data analysis and interpretation: Fernandes SF, Freitas RJM, Leite LS, Trigueiro JG, Barreto MAF, Soares TCM.
Discussion of the results: Fernandes SF, Leite LS, Trigueiro JG, Soares TCM.
Writing and/or critical review of the content: Freitas RJM, Silva MRF.
Review and final approval of the final version: Freitas RJM, Silva MRF.

ACKNOWLEDGMENT

We would like to thank the teaching institutions for their collaboration in this research.

APPROVAL OF ETHICS COMMITTEE IN RESEARCH

Approved by the Ethics Committee in Research of the *Universidade Estadual do Ceará* and approved under Opinion No.5,535,110 and CAAE No. 58810422.5.0000.5534.

CONFLICT OF INTEREST

There is no conflict of interest.

EDITORS

Associated Editors: Gisele Cristina Manfrini, Ana Izabel Jatobá de Souza.
Editor-in-chief: Elisiane Lorenzini.

HISTORICAL

Received: May 21, 2023.
Approved: June 29, 2023.

CORRESPONDING AUTHOR

Sâmara Fontes Fernandes
saminhafontes@gmail.com