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Interprofessional Education and Integration with Primary Care: A Systematic Review

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Abstract

Interprofessionalism encompasses teamwork, knowledge construction, open dialogue, and respect among the peculiarities related to professional practice. This study consists of a systematic review, structured by the P.V.O. is does Primary Health Care (V - variable), favor the development of interprofessionalism (O - outcomes), during the training of higher education health students (P - population). We used searches of the PubMed (United States National Library of Medicine Service) and SciELO (Scientific Electronic Library Online) databases with descriptors from the DeCS (Descriptors in Health Sciences) and MeSH (Medical Subject Headings) platforms. The Medical Education Research Study Quality Instrument (MERSQI) was used to assess risk of bias and quality. After reading and analyzing the 15 selected articles, three categories emerged: "The dimensions of interprofessionalism in the strengthening of Primary Health Care"; "Interprofessionalism and the teaching-learning process in health"; "Perspectives for interprofessional training in higher education: challenges in implementation and possible solutions". Primary Health Care favors the development of interprofessionalism in many countries, especially in Brazil. However, it is up to the academic staff to use this strategy to advance interprofessional competencies in health education. It is indicated that more didactic-pedagogical resources on interprofessional education be developed and implemented, in such a way that Primary Care is the focal point for the development of interprofessionalism.

Keywords: primary health care, education, higher, interprofessional education

1. Introduction

Interprofessionalism is related to the concept of teamwork and is characterized by reflection on professional roles, problem-solving, and negotiation in the decision-making process and construction of k/nowledge with dialogue and respect for the particularities of the nuclei of knowledge and professional practices (Batista, 2012).

Interprofessional education has been used in Brazil and internationally by various health professionals and educators as a way to expand and improve collaboration and service delivery in spheres such as child protection, community care, mental health, and more flexible deployment of the health workforce (Hammick, Freeth, Koppel, Reeves, & Barr, 2007).

When inserting interprofessionalism into the training processes it is necessary to adopt respect, open dialogue, and the definition of roles and responsibilities, mainly to provide a shared learning environment consciously. Likewise, the patient must be the center of the health team's care and it is essential to prepare the professionals involved to perform comprehensive care (Santana & Rossit, 2017).

Interprofessionalism also consists of a relevant topic to scientific research, this being emphasized mainly in the management field, since the results of scientific research can be used as theoretical support to ground health-related reflections and facilitate the development of collaborative practices that encompass several professions, leading to better patient care and a better understanding of the social human aspect (Santana & Rossit, 2017).

Primary Health Care (PHC) consists of the first level of health care and is characterized by a set of individual and collective health actions, covering health promotion and protection, disease prevention, diagnosis, treatment, rehabilitation, and harm reduction to practice comprehensive care that has a positive impact on the health of the collectivity. It is the main entrance door to the Unified Health System (UHS), which communicates with the entire Care

Network of the UHS, and must follow the principles of universality, accessibility, continuity of care, completeness, accountability, humanization, and equity (PNAB, 2017).

Integrating the practice of interprofessionalism into the PHC is essential to expand health care and assist the patient as a biopsychosocial being, and it is important to reflect on the training of health professionals for this reality. Thus, this systematic review aims to highlight the development of interprofessionalism in Primary Health Care.

2. Method

2.1 Study Identification and Research Question

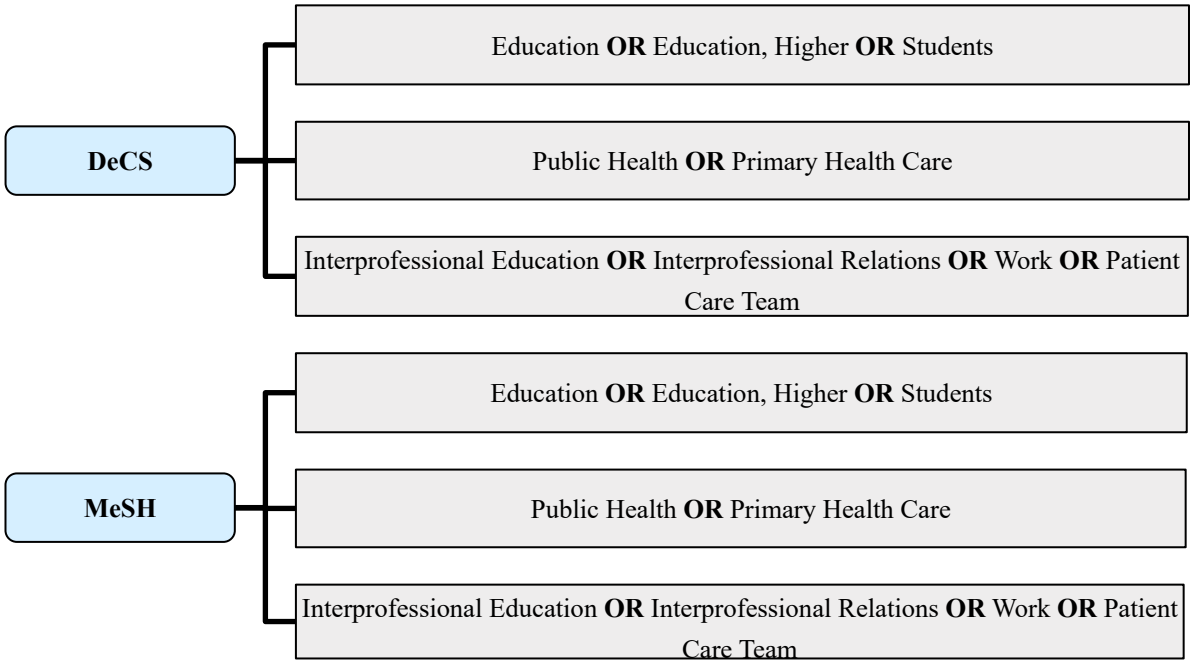
This study meets the methodological objectives of a systematic review. The research design was initiated with the definition of the research question, which was structured following the acronym P.V.O., being the "P" correlated to the population, "V" to the variables and "O" outcomes, then its formulation answered the question: Does Primary Health Care (variable) favor the development of interprofessionalism (outcomes) during the training of higher education health students (population)?"

2.2 Eligibility of the Bibliographic Collection

In this sense, to choose the bibliographic collection, searches were conducted in the PubMed (United States National Library of Medicine) and SciELO (Scientific Electronic Library Online) databases. As for the descriptors used, they were extracted from the DeCS (Descriptors in Health Sciences) and MeSH (Medical Subject Headings) platforms, being used isolated and/or combined, with the aid of Boolean operators, as shown in organization chart 01.

For the eligibility of the bibliographic corpus of this research, the following inclusion criteria were established for the study: publications dated within the last five years, corresponding to the Portuguese, English and Spanish languages, articles in full format and available for reading in their entirety, with rigor in the methodological design and not redundant. The searches in the research platforms were carried out in pairs, counting on the activity of independent researchers, who collaborated to rescue a reliable scientific production with the features of the study, sustaining the reliability advocated by the evidence raised.

Organization Chart 01 - Arrangement of sets of descriptors and Boolean operators used to retrieve publications



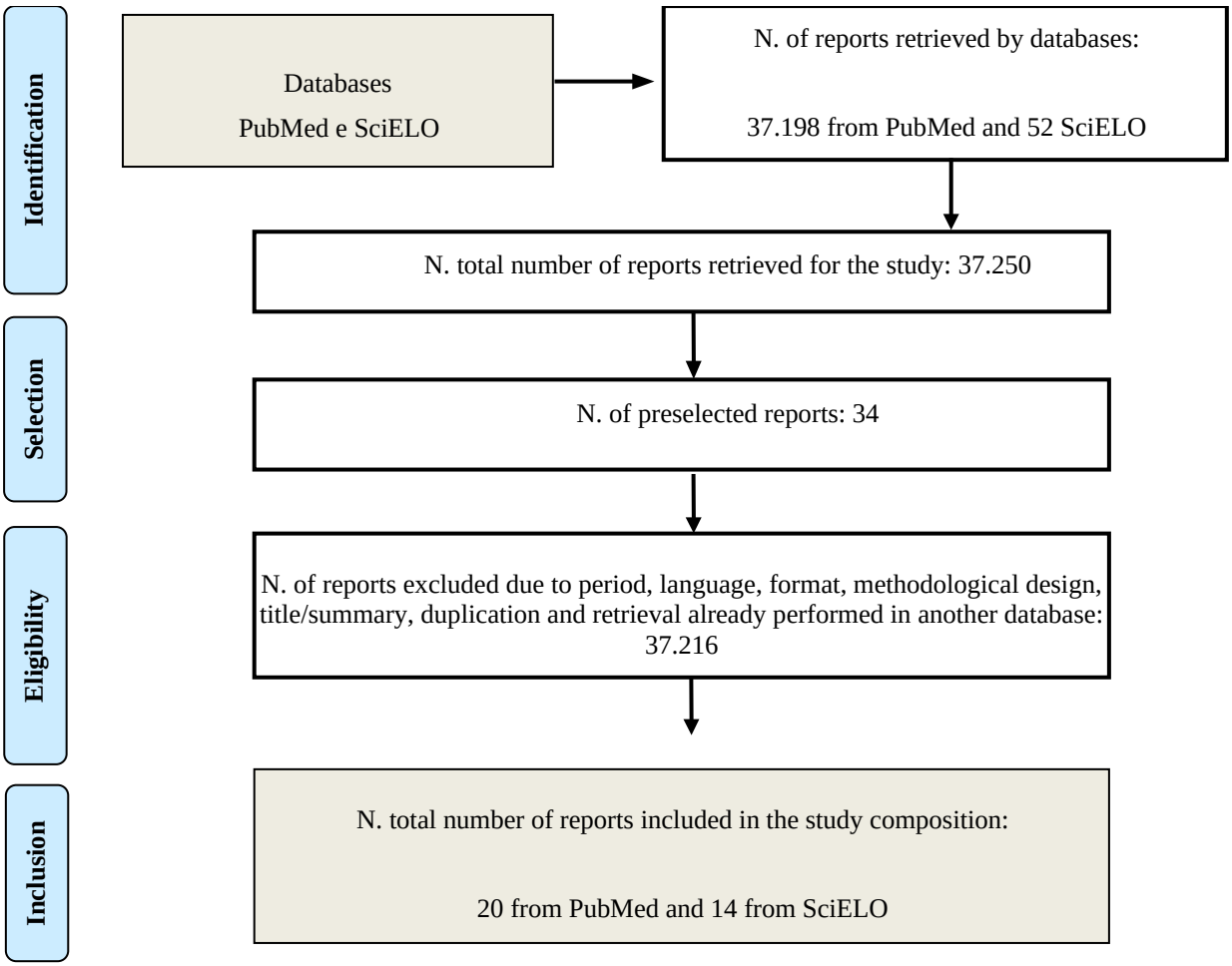
Source: authors, 2022.

2.3 Analysis of the Bibliographical Collection

To describe the procedures for selecting bibliographical participants, the authors included (a) the sampling method, if a systematic sampling plan was used; (b) the percentage of the sample approached that participated; and (c) the number of participants who selected themselves into the sample. The settings and locations were analyzed, in which the data were collected as well as any agreements and payments made to participants, agreements with the institutional review board, ethical standards met, and safety monitoring procedures.

Under these circumstances, the data appropriated by the group were gradually submitted to the Microsoft Office Excel program, subsidizing the analyses performed during the course of this research. A total of 37,250 publications were selected in the first database search, 37,198 of which were derived from PubMed and 52 from SciELO. Then, in order to track the intended studies, the filters defined for this step were applied, resulting in the exclusion of 37,216 publications, 37,178 that were selected from PubMed and 38 from SciELO. Thus, the total of pre-selected publications grouped the disposition of 34 publications, 20 from PubMed and 14 from SciELO, as systematized below (Flowchart 01).

Flowchart 01 - Presentation of the quantitative analysis of the rescue route of the publications in the research platforms



Source: PRISMA, 2022.

Following with the pre-selected publications, to ensure that this research would only include works with aligned fundamentals to answer the determined research question, the researchers assumed a subsequent analysis to the process previously described, attracting studies able to clearly answer the following questions: "Does the work talk about interprofessionalism?"; "What is the objective of the study?"; "What is the area that interprofessionalism is being discussed?"; "Is it related to teaching? Is it directed to any health area course?"; "What is the methodological design used?" and "What is the main outcome found?". Thus, 11 publications with this approach were subtracted, leaving a sample represented by 23 scientific productions.

With this investigative process added, 5 articles from this bibliographic set did not present the required methodological specificity and were therefore excluded, reducing the sample to 18 publications.

2.4 Bias and Quality Risk Assessment

Describe the procedures for selecting participants, including (a) the sampling method, if a systematic sampling plan was used; (b) the percentage of the sample approached that participated; and (c) the number of participants who selected themselves into the sample. Describe the settings and locations in which the data were collected as well as any agreements and payments made to participants, agreements with the institutional review board, ethical standards met, and safety monitoring procedures.

Furthermore, to evaluate the risk of bias and quality, the MERSQI (Medical Education Research Study Quality Instrument) instrument was applied. This evaluative tool has in its structure the assessment of 6 distinct domains, allowing for each publication evaluated, the establishment of a maximum score of 18 points. Thus, a score of 11 points was considered the cut-off point, which justified the removal of 3 of the studies analyzed, resulting in 15 articles selected for the scope of this study.

2.5 Registration in PROSPERO

In addition, this systematic review was registered in PROSPERO (International Prospective Register of Systematic Reviews), where its registration was validated as: "CRD42021252849".

3. Results and Discussion

Since this was a systematic review and search for quality scientific evidence, the authors prioritized only studies that presented clear and relevant methodological rigor. Therefore, in this step, when performing a critical analysis of some publications selected for the sampling of this study, researches were found that did not meet this intended standard, leaving in their methodological design uncertainties for researchers, which motivated the removal of studies.

For the theoretical foundation of this study, the content produced by 15 scientific articles was used, resulting from the determined methodological application and the consensual opinion of all researchers involved. Chart 01, in sequence, announces the list of selected publications and identifies the scores achieved after the application of the MERSQUI Instrument, quantifying the values obtained for all domains considered by this evaluative resource.

The MERSQI is a tool designed for medical education research, and this scale is composed of the evaluation of six domains, namely: study design, sampling, types of data, validation of the evaluation instrument, data analysis, and outcome. Thus, with the sum of the domains, we can have a minimum score of 05 points and a maximum of 18 points. In this research, we used a cut-off score on the MERSQI instrument of studies with a score less than 11 points.

Four researchers were responsible for the critical and reflective reading of the 18 articles pre-selected for the application of the MERSQI tool. Initially, individual analyses were performed, evaluating each publication in the 06 domains required by the MERSQI. After this step, the scores of all articles were compared by the four researchers, and only the publications with the minimum score required remained in our research. By consensus, 3 publications were removed in this step.

After in-depth reading and analysis of the selected articles, 3 categories emerged, namely: "the dimensions of interprofessionalism in the strengthening of Primary Health Care"; "interprofessionalism and the teaching-learning process in health care"; "perspectives for interprofessional training in higher education: challenges in implementation and possible solutions".

Chart 01 - Representation of the evaluation of the elected studies and the score performed with the help of the MERSQI Instrument "Medical Education Research Quality Instrument".

N.	Reference	Study Design	Sampling	Data Types	Validity of the Evaluation Instrument	Data Analysis	Results	Total
1	Karpa *et al.* (2019)	1,5	2	3	2	3	2	13,5
2	Ferri *et al.* (2018)	3	1	3	3	3	1	14
3	Correa *et al.*(2019).	1	2	3	3	3	1	13
4	McGettigan and McKendree (2015)	1,5	2	1	3	3	1,5	12
5	El-Awaisi *et al.* (2017)	2	3	3	3	3	2	16
6	Dennis *et al*. (2019)	3	2,5	3	2	2	2	14,5
7	Mink *et al*. (2019)	2	0,5	3	2	3	2	12,5
8	Hallin *et al*. (2018)	2	2	3	3	2	1	13
9	Toassi *et al.* (2020)	1	2	3	3	3	2,5	14,5
10	Ely & Toassi (2018)	1	1	3	3	2	2,5	12,5
11	Tamayo *et al.* (2017)	3	3	3	3	3	1	16
12	Halle *et al.,*(2019)	2	2,5	3	3	2	3	15,5
13	Griggio *et al.* (2020)	1	2	3	3	3	1	13
14	Agreli *et al*. (2019)	2	2	3	3	3	1,5	14,5
15	Griggio *et al.* (2018)	1,5	1	1	3	3	1,5	11

Source: authors, 2022.

Table 01. Presentation of the quantitative analysis of the rescue route of the publications in the research platforms

Publication eligibility process during the selected database searches	Bases de Dados		TOTAL
	PubMed	SciELO	
Publications retrieved with the first search	37.198	52	37.250
Publications excluded by publication period	0	10	10
Publications excluded by publication language	0	0	0
Publications excluded by publication format	18.546	0	18.546
Publications excluded by publication methodological design	16.098	4	16.102
Publications excluded by publication title/summary	2.534	12	2.546
Publications excluded by duplication of publication	0	11	11
Publications excluded because they have already been redeemed in another database	0	1	1
Total publications excluded	37.178	38	37.216
Total preselected publications	20	14	34

Source: authors, 2022

3.1 The Dimensions of Interprofessionalism in the Strengthening of Primary Health Care

More than thirty years after the implementation of the Sistema Único de Saúde (SUS), which consists of the public health sector in Brazil and is considered the largest employer in the health sector in the country, a large part of the curricula of undergraduate health courses continues to be structured by essentially uniprofessional disciplines. Thus, health education remains directed to the traditional demands of the market, far from the complaints for changes and integration of teaching-service-community. Imminent to traditional pedagogical conceptions, there are many health professionals who have difficulties working together, repeating a fragmented care model, little resolutive and that reinforces corporatism, superior-subordinate interactions and professional isolation (Ely & Toassi, 2018; Tamayo, Besoaín-Saldaña, Aguirre, & Leiva, 2017).

The implementation and development of the SUS brought new challenges to the training of health professionals in Brazil, that is, to train professionals who work in the SUS to deal with the complexities of health problems according to their ethical and political assumptions, as well as to offer quality and safe care to their users. In this way, the Interprofessional Education (IE) originates from the recognition of the difficulties of communication and collaboration between different occupations, whose training is characterized by a uniprofessional approach that transposes the health curriculum (Toassi, Olsson, Lewgoy, Bueno, & Peduzzi, 2020).

According to the World Health Organization (WHO), the collaborative practice resulting from the application of interprofessional conduct optimizes the results of health care through comprehensive care to patients, their families, caregivers, and the community. Added to this, the Pan American Health Organization (PAHO) stipulates that member states should move forward and include multidisciplinary teams to ensure the development of the necessary talent to put into practice successful patient care, as highlighted by (Tamayo *et al*., 2017).

According to Griggio, Mininel and Silva (2018), the assumptions of the I.E. subsidize the principles of the SUS, since they are based on the expanded concept of health and comprehensive care. Thus, it is possible to articulate actions and services to promote, prevent, treat, and recover the health of individuals and communities, considering the complexity of health needs and the collaboration in teams in the Health Care Network (HCN). Its strengthening faces the challenge of the logic of training professionals with specific and isolated identities, in a process far from collaboration and teamwork.

In Brazil, the debates on I.E. are recent, although the theme has been developed and investigated for over thirty years in the United States, Canada, and Europe. In the country, the Medicine course was the first to revise its Diretrizes Curriculares Nacionais (DCN), standards that guide the curricular planning of education systems, inserting the term "interprofessionality", but without defining its concept (Ely & Toassi, 2018).

Therefore, IE present worldwide, has as its pillar the search for strengthening teamwork and collaboration in Healthcare systems (Griggio *et al*., 2018). The WHO defines it as the active learning process and future collaboration, built in educational training, between different professional areas to obtain better results in patient care (Agreli, Peduzzi, Silva, Mascarelle, & Espinoza, 2019; Ely & Toassi, 2018).

Accordingly Griggio *et al.* (2020), interprofessionalism is permeated by several overlapping concepts focused on meeting the health needs of users, families, and communities.

This powerful strategy focuses on the effectiveness of the individual and collective health-disease process, since the consequences of this collaboration involve improved results in clinical practice and user care. It also promotes the development of awareness in the use of health service resources, team adherence to recommended clinical protocols, strengthening of collaborative work, and effective team communication. This result is essential when it is remembered that work is a social determinant of the health-disease process of individuals (Tamayo *et al*., 2017; Griggio *et al*., 2018; Griggio *et al.*, 2020).

Moreover, it is observed that the IE promotes training as an opportunity for students to better understand the health system, since they are inserted into the collaborative practice team, thus making it consistent with the needs of strengthening the SUS (Ely & Toassi, 2018). Therefore, it is noted that IE has the potential to structure interprofessional and collaborative work and the field of worker health as an interdisciplinary, multiprofessional, interinstitutional, and intersectoral practice going beyond the boundaries of the health (Griggio *et al.*, 2020).

3.2 Interprofessionalism and the Teaching-Learning Process in Healthcare

For (Toassi *et al*., 2020), the need to reformulate the education of health professionals has been discussed for years in Brazil in several regulatory frameworks. Since 2001, it is a national agenda, solidified by the establishment of the DCN for undergraduate health courses. In them, the need for articulation between theory and practice was incorporated by means of integrated curricula inserted in the daily life of health services. Furthermore, the adoption of participatory teaching-learning-evaluation methodologies is foreseen by the DCN and subsidizes the development of competencies for teamwork and for facing problems related to the population's demands.

Accordingly Correa, Hermuche, Lucchetti, Ezequiel, and Lucchetti (2019), conducted a study with Brazilian educational institutions that contemplate the offer of medical and physical therapy courses, and obtained findings that advocate the presence of interprofessional education activities by about three-quarters of these institutions located in the national territory. In addition, the authors announce notorious curricular limitations, with respect to internships and mandatory courses.

In this sense, considering the interprofessional activities in education within the institutions studied, the researchers attribute in their research Primary Care and Public Health as an important area of emphasis in the courses conducted (Correa *et al*., 2019).

According to El-Awaisi *et al.* (2017), interprofessional education directed to health academics implies benefits such as communication, collaboration, and role valorization. Futhermore, the study by Dennis *et al.* (2019) provided evidence, through a methodological approach focused on interprofessional research, of changes in the attitudes of health students after clinical experience with an interprofessional team.

In the study by Karpa *et al.* (2019), supported by a simulation teaching strategy applied to students linked to healthcare courses, improvements were recognized regarding the perception of the roles and attributions inherent to professionals in different healthcare areas. The authors also released data on the acquisition of improvements, by the students in the study, regarding the geriatric patient and their respective assessment, as well as involvement with teamwork.

The collaborative attitude and teaching-learning strategies, especially interprofessional simulation, have also been the subject of other research involving pedagogical practices in healthcare, such as the study developed by Ferri *et al.* (2018). With reference still to interprofessionalism, competency-based learning also represents the object of the study conducted by Mink *et al.* (2019).

In equivalence Mcgettigan and Mckendree (2015), stated the feasibility of developing, without harm to the care of a service, an interprofessional training composed of the union of students tied to a clinical team, equally recognized that it is possible to overcome the obstacle of ensuring the academic composition of numerous professions in the study. In accordance with Hallin, Gordon, Sköldenberg, Henriksson and Kiessling (2018), patient safety is not violated by using the hospital service studied for integration with undergraduate interprofessional practice learning.

Given the vast and complex possibilities for health professionals to act, the IE presents itself as an effective tool in the search for interprofessionalism and, consequently, quality in health care. Its efficient application is able to overcome difficulties such as the still present fragmentation of care in the health service (Griggio *et al.*, 2020).

In this sense, the development of courses and/or curricular disciplines that promote IE in health care courses should be encouraged, as a way to stimulate, early on, collaborative work and minimize competitiveness, since it is necessary to readjust professional training in order to develop the skills required by health care in the 21st century (Griggio *et al*., 2018; Tamayo *et al*., 2017).

Evidence indicates that IE promotes the development of attitudes, communication, knowledge, skills, respect and

reduction of stereotypes towards other professions, and behaviors conducive to interprofessional collaborative practice, as proposed by the Canadian Interprofessional Health Collaborative study group. In addition to these competencies, it also aims at the clarity of professional roles, team functioning, and patient, family, and community-centered care (Toassi *et al*., 2020; Sbolli & Prado, 2020).

3.3 Perspectives for Interprofessional Training in Higher Education: Challenges in Implementation and Possible Solutions

3.3.1 Challenges in Implementation

There are many obstacles encountered in the day-to-day work regarding the consolidation of the holistic health care model. Obstacles that can be cited are the lack of preparation of health professionals to understand that care must be directed to the patient as a whole, not only restricted to the disease that affects him/her, the failures in the reference and counter-reference system; the precarious investment in the formative and professional training, as well as the overload of human resources and the scarcity of material resources (Griggio *et al.*, 2020).

Besides these, according to Griggio *et al.* (2020), one of the main problems in the effective implementation of IE is the failure to overcome the biomedical model in Brazil. This factor can even be synonymous with delay, since the aimed model of comprehensive care seeks to consider the individual in his or her totality and needs, making him or her the protagonist, together with the health team, of his or her health-disease process.

Another obstacle that should not be marginalized is the use of terms such as multidisciplinary and interdisciplinary, which refer to the relationship between disciplines, as being synonymous with interprofessional, which refers to professional practice in which work is developed in health teams. Added to this issue, the curricular matrices that, if organized exclusively by training cores, constitute a barrier to integration between the undergraduate courses of different professions (Griggio *et al*., 2018; Ely & Toassi, 2018).

It is understood, moreover, that the mere meeting between students from different undergraduate health courses does not guarantee the integration aiming at effective interprofessionalism among them. Thus, the development of curricular and pedagogical strategies is necessary so that, through reflection and critical analysis, there is a reformulation of perceptions in favor of understanding the concept of integral health (Ely & Toassi, 2018). Hence, it was curiously found, that women are more critical about understanding the curricular impact of team training, besides the perception of its importance. From this, it is observed greater search and preparation of female health students in the development of this professional quality. (Toassi *et al*., 2020; Tamayo *et al*., 2017)

Nevertheless, one way to prepare future professionals for IE is the investment in interprofessional training by qualified facilitators, not only individually, but of teams as a whole, since evidence points out that the skills to work collaboratively are not intuitive and are not learned just by doing the work itself. This requires the comprehensive and equivalent promotion of interprofessional education in healthcare course curricula. Therefore, the positive perception of the students about interprofissionalism will only be developed if fostered by educational institutions, from the implementation of effective teaching strategies since the beginning of graduation. (Halle, Kaloostian, & Stevens, 2019; Tamayo *et al*., 2017; Toassi *et al*., 2020).

3.3.2 Possible Solutions

Teamwork, according to (Griggio *et al.*, 2020), depends on the recognition of professional roles and competencies, an essential factor for interprofessional relationships and collaboration. Thus, health education is guided by the development of individual and isolated professional identities, with little or no integration between curricula. In an attempt to reverse this fact, the Ministry of Health of Brazil, since 2003, has invested in training strategies based on the integration and articulation of knowledge and different practices, seeking to bring students closer to professional practice and the daily life of health services.

As a tool for interprofessional teaching, it was found in the literature, the offer of an elective or additional curricular discipline in a federal university in Rio Grande do Sul, for several undergraduate courses, including Collective Health, Biomedicine, Biological Sciences, Physical Education, Nursing, Pharmacy, Physiotherapy, Speech Therapy, Medicine, Veterinary Medicine, Nutrition, Dentistry, Psychology, Social Work and Public Policy. The learning objectives of this elective seek to know and analyze the territory attached to a Family Health Unit, understanding its organization and the work process of the team working there. The main learning method involves observation and problematization. After each activity, the group meets and discusses what was experienced (Ely & Toassi, 2018).

According to Ely and Toassi (2018), it is necessary to create conditions for curricular flexibility, with the diligence for interprofessional education or establishment of common curricula. The advancement of IE initiatives involves the articulation of health professionals; services; teachers, and students, expanding the spaces for integration and learning among different professional groups. Furthermore, when there is institutional support and spaces for development, it is

transcendental, since support and motivation move students and professionals to improve in group work more and more. If this competence can involve each academic unit in its different formative spaces, there will be a significant contribution to interprofessionalism. Teamwork is a pending task in this ambit (Tamayo *et al*., 2017).

According to Toassi *et al*. (2020), learning suggestions based on professional integration of Primary Health Care services and tutor-teacher participation allow students to participate more in their own training and change their perception of workers and users and, therefore, are more likely to better understand their position in the health care team. Moreover, when they see themselves as part of the team, they feel valued and their contribution tends to improve.

Successful implementation of I.E. requires leadership at multiple levels of academia and health services. This means promoting curricular innovation, providing for the development of multi-professional skills and increased interdisciplinary practice, and ensuring that the curriculum is consistent with professional practice. It also requires positioning educational institutions to use IE transversally across different curricula (Griggio *et al*., 2018).

4. Final Considerations

Considering the categories pointed as evidence, it can be said that Primary Health Care corroborates so that clinical practice permeated by interprofessional education is optimized, in order to promote a complete training of students in health higher education. Among the changes promoted by the interprofessional practice, there is the better integration of the health team, with the aim to bring together future professionals.

Hence, as a strategy to promote the principles of the USS, the assumptions of the IPE subsidize the expanded concept of integrality in care through assistance, in its entirety, to the patient, his family, caregivers, and the community. Thus, it is possible that, together, actions of promotion, prevention, treatment, and recovery of individuals and communities are carried out.

It is noted that shared responsibility, interdependence, clear definition of roles, development of leadership, and recognition of common goals and values are essential virtues found in the Health Care Network team, which provides influential results in the health-disease process of each patient. However, the lack of preparation of health workers, scarcity of resources, and the flaws found in the interprofessional teaching system are obstacles to the training of students.

It was evidenced in the studies that some undergraduate health curricula are structured in a uniprofessional and traditional way, lacking changes that would integrate teaching-service-community. Besides, some health professionals have difficulties regarding group work and end up isolating themselves from other professions. Still, the implementation of the USS has brought challenges to offering quality care and safety, and in this context the Primary Health Care recognizes the difficulties of communication between professions, emerging as an alternative.

It is understood that promoting IE in health courses is equivalent to practicing health care competencies in modernity, stimulating collaborative and less competitive work, with good teamwork and patient-centered care.

Therefore, institutional support and learning spaces within each academic unit are needed to promote curricular innovation and multi-professional development, ensuring that the curriculum is coherent with interprofessional practice. Finally, it is concluded that more Primary Health Care. methodologies and materials need to be developed and implemented and that research for this type of teaching needs to be stimulated. Primary Health Care is open for interprofessional practice to be developed, however, it is up to the academic staff to use this strategy to advance these competencies in health teaching.

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