Telehealth use in Primary Health Care collaborative interprofessional practice: protocol for a scoping review

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Telehealth use in Primary Health Care collaborative interprofessional practice: protocol for a scoping review

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Abstract

Introduction Telehealth is a growing topic, with potential to improve access to Primary Health Care. However, there is a lack of knowledge regarding how telehealth could facilitate interprofessional collaboration that is recommended to strengthen the comprehensive approach of Primary Health Care. The objective is to identify the characteristics and applications of telehealth services related to the interprofessional collaboration practice of Primary Health Care professionals.

Methods and Analysis This review will cover studies including as target population those health professionals who work in telehealth services; as concept, telehealth in relation to collaboration interprofessional practice; and as context, Primary Health Care. A scoping review will be carried out according to the JBI methodology. Databases to be searched include MEDLINE, CINAHL, Embase, Eric, Scopus, Lilacs and Web of Science. All identified records will be grouped, duplicates will be removed, titles and abstracts will be selected by two independent reviewers, and the full text of selected articles will be evaluated in detail. A data extraction tool developed by the reviewers will be used for data extraction. The results will be presented in data map format in a logical way, in a diagram or in a tabular format, accompanied by a descriptive summary.

Ethics and Dissemination No ethical approval is required for this study. A manuscript

based on this scoping review will be submitted to a journal and we hope it will contribute

to scientific knowledge on the interprofessional field and key research findings will be

sent to key events on Interprofessional Practice and Education.

Systematic review registration This scoping review was registered in the Open Science

Framework (https://doi.org/10.17605/OSF.IO/2BV8D)

Keywords Primary Health Care; Interprofessional relations; Telemedicine; Scoping

review.

Strengths and limitations of this study:

- The aim of this scoping review is to evaluate, for the first time, the characteristics
  of telehealth related to collaborative interprofessional practice in Primary Health
  Care settings;
- We will use a methodological framework proposed by the Joanna Briggs Institute
  (JBI) for the scoping review;
- Relevant sources will be retrieved in full into the JBI System for Unified
  Management Document, Assessment and Review Information (JBI SUMARI);
- The research follows the Preferred Reporting Items for Systematic Reviews and
  Meta-analyses for Scope Reviews (PRISMA-ScR);
- The different types of concepts related to telehealth and interprofessional
  collaboration can make it difficult to search the publications and synthesize the
  results.

INTRODUCTION

   Telehealth is a broad term that refers to the use of different information and

communication technologies for the remote delivery of health services. Its aim is bringing

together and integrating health professionals, teams and services to increase patients'

access to health care, especially to those whose access is unavailable or limited (1). In

this sense, it is understood as a device that improves the quality of access to health

services. Through telehealth, professionals and health teams from different geographic

locations can collaborate and share evaluation methods, diagnosis, treatment, monitoring,

screening, and carry out interconsultations and matrix support in order to monitor and take care of patients (2).

Telehealth can provide additional opportunities for patients to receive interprofessional care, in order to improve self-management and adherence to treatments (3). As the population ages and the prevalence of long-term conditions increases, telehealth is increasingly being used on team-based care delivery. Telehealth shows an effective way to tackle difficult problems by enabling virtual meets, through which interprofessional teams and patients can share decisions and agree upon a healthcare plan (2).

Telehealth, combined with interprofessional practice from different health areas, working together support the patients' integral treatment, becomes powerful in improving the team ability and interprofessional integration (4), it is capable to produce answer to several health problems in different meeting modalities and not just face-to-face.

In primary care, the most capillary level of health care and considered the preferred entry point for users to the health system, the additional benefits of telehealth are associated with the promotion of self-care, reduction in the number of home visits, with consequent cost reduction, saving patients time, improving clinical outcomes, better access to specialized services (5). The organization structure presented in the Primary Health Care (PHC) units that includes patients and families assigned to the teams, can contribute to interprofessional collaboration. PHC units thus emerge as the most efficient means of combating the fragmentation of actions in the health system, through interprofessional actions that overcome the team scope, bringing together patients and the community (6).

A recent study observed that the purpose of providing telehealth services in primary care is varied, including monitoring the disease, supervising and giving a second opinion, as well as training professionals and patients. However, the study identified that there are challenges for the implementation of telehealth in primary care related to equipment and internet network, regulation and license to perform telehealth, and the resistance of professionals to this approach (7).

In this perspective, it is essential to understand the characteristics related to the use of telehealth in the context of interprofessional collaboration (IPC) in PHC units. The

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results of this review may help to understand the gaps in telehealth related to interprofessional teams in PHC, and ultimately, may contribute to formulate strategies to enforce and expand the use of telehealth by professionals, teams and health services.

The aim of this study is to identify the characteristics and the applications of telehealth related to collaborative interprofessional practice in PHC settings.

A preliminary search was carried out in the Open Science Framework (OSF), Cochrane Database of Systematic Reviews, JBI Evidence Synthesis and Epistemonikos databases, and no current or ongoing systematic or scope reviews about the topic were identified, which also corroborates the need to carry out this scope review.

METHODS AND ANALYSIS

This article reports on a protocol of a scoping review following the Joanna Briggs Institute (JBI) methodology for scoping assessments (8) to answer the review question: What are the characteristics and applications of telehealth in relation to interprofessional collaboration among health professionals in the context of Primary Health Care Units? The present protocol followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Protocols (9) (online supplemental appendix I). This protocol of scoping review has been registered in the Open Science Framework (https://doi.org/10.17605/OSF.IO/2BV8D).

Data sources

To identify publications in both peer-reviewed and grey literature, and provide a broad overview of the use of telehealth related to collaborative interprofessional practice, we will undertake a scoping review. Although scoping reviews differ from systematic reviews which focus on the effectiveness of a particular intervention, scoping reviews can also follow methodological frameworks, such as the one provided by the Joanna Briggs Institute (8). Relevant peer-reviewed literature will be identified through systematic searched in selected electronic databases: MEDLINE via PubMed, CINAHL, Embase, Eric, Scopus, Latin American and Caribbean Health Science Literature Database

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(LILACS), Web of Science and grey literature databases such as DART-E, NLTD, Open Access Thesis and Dissertations (OATD).

The search strategy aims to find primary studies, reviews, articles, public policies, protocols, guidelines, grey literature and experience reports. A JBI three-step process will be followed for developing the search. The first of these steps has been already undertaken and involved an initial database search on MEDLINE and CINAHL. This step aimed to capture the index terms used to describe the articles and keywords contained in the title and abstracts of retrieved papers, using the terms telemedicine AND interprofessional practice AND primary health care. A detailed description of this search strategy is available in online supplemental appendix II. A second search using all identified keywords and index terms will then be undertaken across all selected databases (MEDLINE, CINAHL, Embase, Eric, Scopus, Lilacs, Web of Science). The search strategy includes all identified keywords and indexed terms will be adjusted to each database and/or information source included. On the third and final step, the reference lists of the selected studies will be searched for additional studies as well as a search for unpublished studies (grey literature). The search of the grey literature will be undertaken on DART-E, NLTD, Open Access Thesis and Dissertations (OATD) using the terms telemedicine AND interprofessional practice AND primary health care. A search of articles, public policies, protocols and guidelines will be undertaken on Google Scholar and Bielefeld Academic Search Engine (BASE). In these last sources, the first 20 results will be selected and screened.

Articles in portuguese, english, french and italian are going to be considered because the authors' language domain. No restrictions on the publication period will be imposed.

The reviewers intend to contact the primary study's authors for more information, if necessary.

Inclusion criteria

Participants

This review will consider studies that include health professionals who participate in telehealth activities.

Concept

We will consider studies that explore telehealth in relation to IPC.

Context

This review will include studies carried out in the context of PHC.

Types of study to be included

We will include study designs with quantitative, qualitative and mixed methods approaches.

Screening

The titles and abstracts full text of the selected citations will be evaluated by two independent reviewers. Any disagreements that arise between reviewers in each step of the selection process will be resolved by discussion with a third reviewer.

Data extraction

After the search, all documents identified will be separated into groups and managed by the EndNote Clarivate Analytics reference manager and any doubled document will be removed. All records will be imported to Rayyan to recheck duplicates and perform the blinded selection process (10). Potentially relevant sources will be retrieved in full, and their citation details imported into the JBI System for Unified Management Document, Assessment and Review Information (JBI SUMARI) (JBI, Adelaide, Australia) (11). The reasons for excluding full-text studies that are not in accordance to the including criteria will be recorded and reported in the scoping review. The research outcome and the including process will be reported in the final scoping

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review and presented in a flowchart of Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scope Reviews (PRISMA-ScR) (12).

Data will be extracted from documents included in the scoping review using a data extraction tool (table 1) previously developed by the reviewers. The extracted data will include specific details according to the inclusion criteria and that will be relevant to the review question.

The data extraction tool will be modified and reviewed if necessary, during the data extraction process of each included study. Modifications will be detailed in the scoping review. The authors of the articles will be contacted to request missing or additional data, when necessary. As this study consists of a scoping review any evaluation related to methodological quality will be taken.

Table 1 Data Extraction Tool	
Aspects of extracted data	
General information	Author Title Year of publication Journal Aim of study
Location	Country/City of origin
Design of study	Empirical research, including quantitative, qualitative or mixed method
Type of population	Participants description
Characteristics of the study refers to	Telehealth concept addressed in the study Health care model addressed in the study Interprofessional collaboration
Limitations	Limitations reported by authors
Results	Results founded
Relevant aspects	Important aspects for the scoping review

Strategy for data synthesis

The results will be presented as a data map on a logical way, diagram or tabular format. A narrative abstract will come together with the tabulated and/or mapped results describing how the results are related to the purpose of the review and the research question. Results will be organized into categories.

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Critical appraisal of included studies

The reviewers will perform the critical appraisal of included studies using the Prediction Model Study Risk of Bias Assessment Tool, if applicable. We will classify risk of bias as low risk, high risk or unclear for each domain.

Patient and public involvement

This scoping review has no direct involvement by patients or the general public, because there is no use of primary data collection.

ETHICS AND DISSEMINATION

A manuscript based on this scoping review will be submitted to a journal and we hope it will contribute to scientific knowledge on the interprofessional field and key research findings will be sent to key events about Interprofessional Practice and Education.

AUTHOR STATEMENT: This manuscript was read, edited, revised and approved the final version by all authors.

FUNDING: This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

CONFLICTS OF INTERESTS: The authors declare no conflict of interest in this research.

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Appendix I:

Database	Search strategy
CINAHL	(MH "Telehealth") OR TI (telehealth or telemedicine or telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mhealth or digital health or technology) OR AB (telehealth or telemedicine or telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mhealth or digital health or technology OR "remote consultation") AND (MH "Interprofessional Relations") OR TI ("interprofessional collaboration" or "interprofessional teamwork" or "interprofessional practice" OR "interdisciplinary practice" OR "Interprofessional care" OR "interprofessional relations" OR "interprofessional team") OR AB ("interprofessional collaboration" or "interprofessional teamwork" or "interprofessional practice" OR "interdisciplinary practice" OR "Interprofessional care" OR "interprofessional relations" OR "interprofessional team") AND (MH "Primary Health Care") OR TI ("primary health care" or "primary care" OR "primary healthcare" or "primary care nursing" or "family medicine" or "family practice" or "general medicine") OR AB ("primary health care" or "primary care" OR "primary healthcare" or "primary care nursing" or "family medicine" or "family practice" or "general medicine")
PubMed	(((("Remote Consultation"[Mesh] Consultation, Remote Teleconsultation Teleconsultations) OR ("Telemedicine"[Mesh] Mobile Health Health, Mobile mHealth Telehealth eHealth)) OR (telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mhealth or "digital health" or technology)) AND (("Interprofessional Relations"[Mesh] Relations, Interprofessional) OR ("interprofessional collaboration" or "interprofessional teamwork" or "interprofessional practice" OR "interdisciplinary practice" OR "Interprofessional care" OR "interprofessional relations" OR "interprofessional team")) AND ("Primary

<table>
<tr><td></td><td>Health Care"[Mesh] OR "Primary Health Care"[tw] OR Care, Primary Health Health Care, Primary Primary Healthcare Healthcare, Primary Primary Care Care, Primary "primary care nursing" or "family medicine" or "family practice" or "general medicine"))</td></tr>
</table>

Appendix II

PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol*

Section and topic	Item No	Checklist item	Location where item is reported
ADMINISTRATIVE INFORMATION			
Title:			
Identification	1a	Identify the report as a protocol of a systematic review	**Page 1**
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	**Page 1**
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	**Page 2**
Authors:			
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	**Page 1**
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	**Page 10**
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	**Not applicable**
Support:			
Sources	5a	Indicate sources of financial or other support for the review	**Page 10**
Sponsor	5b	Provide name for the review funder and/or sponsor	**Not applicable**
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	**Not applicable**
INTRODUCTION			
Rationale	6	Describe the rationale for the review in the context of what is already known	**Pages 2, 3 and 4**
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	**Page 4**
METHODS			
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	**Page 6**
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	**Pages 4 and 5**
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	**online supplemental Appendix I**

Study records:			
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	**Pages 6 and 7**
Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	**Pages 6 and 7**
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	**Pages 6 and 7**
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	**Page 7**
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	**Page 7**
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	**Page 8**
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised	**Not applicable**
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I^2, Kendall's τ) **Not applicable**	
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression	**Not applicable**
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	**Page 7**
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies) **Not applicable**	
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	**Not applicable**

* It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.

From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g7647.

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Abstract

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INTRODUCTION

Telehealth is a broad term that refers to the use of different information and communication technologies for the remote delivery of health services. Its aim is bringing together and integrating health professionals, teams and services to increase patients' access to health care, especially to those whose access is unavailable or limited (1). In this sense, it is understood as a device that improves the quality of access to health services. Through telehealth, professionals and health teams from different geographic locations can collaborate and share evaluation methods, diagnosis, treatment, monitoring, screening, and carry out interconsultations and matrix support in order to monitor and take care of patients (2).

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telehealth is increasingly being used on team-based care delivery. Telehealth shows an effective way to tackle difficult problems by enabling virtual meets, through which interprofessional teams and patients can share decisions and agree upon a healthcare plan (2).

Morgan, Pullon and McKinlay define interprofessional collaboration (IPC) as an active and ongoing partnership, often among people from diverse backgrounds with distinct professional cultures and possibly representing different organizations or sectors, who work together to solve problems or provide services. In this context, they establish interprofessional collaborative practice as a term used to describe the elements of interprofessional collaboration implemented in the practice setting and belonging to an umbrella hierarchy term of the interprofessional collaboration (4). Reeves, Xyrichis and Zwarenstein argue that interprofessional collaboration is a more flexible form of interprofessional work, being similar to teamwork in that it requires shared responsibility and interdependence among individuals, in addition to clarity of roles and goals (5).

Telehealth, combined with IPC with different health areas, working together support the patients' integral treatment, becomes powerful in improving the team ability and interprofessional integration (6), it is capable to produce answers to several health problems in different meeting modalities and not just face-to-face.

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A recent study observed that the purpose of providing telehealth services in primary care is varied, including monitoring the disease, supervising and giving a second opinion, as well as training professionals and patients. However, the study identified that there are challenges for the implementation of telehealth in primary care related to

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equipment and internet network, regulation and license to perform telehealth, and the resistance of professionals to this approach (9).

In this perspective, it is essential to understand the characteristics related to the use of telehealth in the context of IPC in PHC units. The results of this review may help to understand the gaps in telehealth related to interprofessional teams in PHC, and ultimately, may contribute to formulate strategies to enforce and expand the use of telehealth by professionals, teams and health services.

The aim of this study is to identify the characteristics and the applications of telehealth related to collaborative interprofessional practice in PHC settings.

To define the characteristics related to the use of telehealth in the context of IPC, we will verify the properties of the type of telehealth tool reported in each study, as well as the experience of the interprofessional team members who participated and technology model used for management the health care of the patients in a PHC context.

To describe the characteristics related to IPC, we will use key references in the area, such as the 2010 World Health Organization (WHO) Framework for Action on Interprofessional Education and Collaborative Practice, document to address the issue of interprofessionality and addresses mechanisms that determine how collaborative practice is implemented and executed, as institutional mechanisms, work culture and environment (10). Regarding the main concepts of collaborative processes, D'Amour in his review describes sharing, partnership, interdependency and power as important factors, such elements based on the key elements of collaboration, which are the construction of a collective action and the construction of a team life that integrates the perspectives of each professional (11). In addition, we will use the determinants of successful collaboration according to Martín-Rodriguez, which include systematic, organizational and interactional determinants, such as social and cultural factors, the professional and the education system, the organizational structure of institutions, the organization's philosophy, the administrative support, the team resources as the availability of time to interact and of spaces to meet, the need for adequate financial investments and the physical proximity of professionals in the workplace, an appropriate coordination and communication mechanisms, willingness to collaborate, trust, communication and mutual respect of the professionals (12).

To describe the characteristics related to telehealth, we will use the WHO's concept, which is the provision of health services by professionals in the area, in which distance is a critical factor, using information and communication technology resources for the diagnosis, treatment and prevention of diseases, for research, evaluation and continuing education of health professionals, with the aim of promoting the health of patients and their communities. The use of these resources, although comprehensive, is carried out unevenly throughout the world. Barriers such as high costs, precarious infrastructure and lack of technical knowledge are those found in developing countries. While in developed countries the barriers involve legal issues of privacy and security, priorities of health systems and lack of demand (13). We will also use as a reference the document Estrategia y Plan de Acción sobre eSalud (2012–2017) of the Pan American Health Organization (PAHO), which defines telehealth as the use of information and communication technologies to provide health services, especially when distance makes it difficult to provide these services (14).

A preliminary search was carried out in the Open Science Framework (OSF), Cochrane Database of Systematic Reviews, JBI Evidence Synthesis and Epistemonikos databases, and no current or ongoing systematic or scope reviews about the topic were identified, which also corroborates the need to carry out this scope review.

METHODS AND ANALYSIS

This article reports on a protocol of a scoping review following the Joanna Briggs Institute (JBI) methodology for scoping assessments (15) to answer the review question: What are the characteristics and applications of telehealth in relation to interprofessional collaboration among health professionals in the context of Primary Health Care Units? The present protocol followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Protocols (16) (online supplemental appendix I). This protocol of scoping review has been registered in the Open Science Framework (https://doi.org/10.17605/OSF.IO/2BV8D).

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To identify publications in both peer-reviewed and grey literature, and provide a broad overview of the use of telehealth related to collaborative interprofessional practice, we will undertake a scoping review. Although scoping reviews differ from systematic reviews which focus on the effectiveness of a particular intervention, scoping reviews can also follow methodological frameworks, such as the one provided by the Joanna Briggs Institute (15). Relevant peer-reviewed literature will be identified through systematic searched in selected electronic databases: MEDLINE via PubMed, CINAHL, Embase, Eric, Scopus, Latin American and Caribbean Health Science Literature Database (LILACS), Web of Science and grey literature databases such as DART-E, NLTD, Open Access Thesis and Dissertations (OATD).

The search strategy aims to find primary studies, reviews, articles, public policies, protocols, guidelines, grey literature and experience reports. A JBI three-step process will be followed for developing the search. The first of these steps has been already undertaken and involved an initial database search on MEDLINE and CINAHL. This step aimed to capture the index terms used to describe the articles and keywords contained in the title and abstracts of retrieved papers, using the terms telemedicine AND interprofessional practice AND primary health care. A detailed description of this search strategy is available in online supplemental appendix II. A second search using all identified keywords and index terms will then be undertaken across all selected databases (MEDLINE, CINAHL, Embase, Eric, Scopus, Lilacs, Web of Science). The search strategy includes all identified keywords and indexed terms will be adjusted to each database and/or information source included. On the third and final step, the reference lists of the selected studies will be searched for additional studies as well as a search for unpublished studies (grey literature). The search of the grey literature will be undertaken on DART-E, NLTD, Open Access Thesis and Dissertations (OATD) using the terms telemedicine AND interprofessional practice AND primary health care. A search of articles, public policies, protocols and guidelines will be undertaken on Google Scholar and Bielefeld Academic Search Engine (BASE). In these last sources, the first 20 results will be selected and screened.

Articles in portuguese, english, french and italian are going to be considered because the authors' language domain. No restrictions on the publication period will be imposed.

The reviewers intend to contact the primary study's authors for more information, if necessary.

Inclusion criteria

Participants

This review will consider studies that include health professionals who participate in telehealth activities.

Concept

We will consider studies that explore telehealth in relation to IPC.

Context

This review will include studies carried out in the context of PHC.

Types of study to be included

We will include study designs with quantitative, qualitative and mixed methods approaches.

Screening

The titles and abstracts full text of the selected citations will be evaluated by two independent reviewers. Any disagreements that arise between reviewers in each step of the selection process will be resolved by discussion with a third reviewer.

Data extraction

After the search, all documents identified will be separated into groups and managed by the EndNote Clarivate Analytics reference manager and any doubled document will be removed. All records will be imported to Rayyan to recheck duplicates and perform the blinded selection process (17). Potentially relevant sources will be retrieved in full, and their citation details imported into the JBI System for Unified Management Document, Assessment and Review Information (JBI SUMARI) (JBI, Adelaide, Australia) (18). The reasons for excluding full-text studies that are not in

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accordance to the including criteria will be recorded and reported in the scoping review. The research outcome and the including process will be reported in the final scoping review and presented in a flowchart of Preferred Reporting Items for Systematic Reviews and Meta-analyses for Scope Reviews (PRISMA-ScR) (19).

Data will be extracted from documents included in the scoping review using a data extraction tool (table 1) previously developed by the reviewers. The extracted data will include specific details according to the inclusion criteria and that will be relevant to the review question.

The data extraction tool will be modified and reviewed if necessary, during the data extraction process of each included study. Modifications will be detailed in the scoping review. The authors of the articles will be contacted to request missing or additional data, when necessary. As this study consists of a scoping review any evaluation related to methodological quality will be taken.

Table 1 Data Extraction Tool	
Aspects of extracted data	
General information	Author
	Title
	Year of
	publication
	Journal
	Aim of study
Location	Country/City of origin
Design of study	Empirical research, including quantitative, qualitative or mixed method
Type of population	Participants description
Characteristics of the study refers to	Telehealth concept addressed in the study
	Health care model addressed in the study Interprofessional collaboration
Limitations	Limitations reported by authors
Results	Results founded
Relevant aspects	Important aspects for the scoping review

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Strategy for data synthesis

The results will be presented as a data map on a logical way, diagram or tabular format. A narrative abstract will come together with the tabulated and/or mapped results describing how the results on telehealth in relation to interprofessional collaboration among health professionals are related to the purpose of the review and the research question on the characteristics and properties in the context of Primary Health Care Units. Results will be organized into categories.

Critical appraisal of included studies

The reviewers will perform the critical appraisal of included studies using the Prediction Model Study Risk of Bias Assessment Tool, if applicable. We will classify risk of bias as low risk, high risk or unclear for each domain.

PATIENT AND PUBLIC INVOLVEMENT

This scoping review has no direct involvement by patients or the general public.

ETHICS AND DISSEMINATION

A manuscript based on this scoping review will be submitted to a journal and we hope it will contribute to scientific knowledge on the interprofessional field and key research findings will be sent to key events about Interprofessional Practice and Education.

AUTHOR CONTRIBUTIONS: GSB, ROV, HLFA, AEH, MP and VML conceived and designed the study and drafted the manuscript, which was edited and revised by all authors. GSB, ROV and VML made a substantial contribution to the conception and the design of the manuscript. GSB and ROV created electronic search strategies and constructed the data extraction tool. HLFA, AEH and MP provided methodological advice on telehealth and interprofessional collaboration and made important intellectual

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contributions to the manuscript. HLFA, AEH, MP and VML provided supervision. All authors read and approved the final version of the manuscript.

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CONFLICTS OF INTERESTS: The authors declare no conflict of interest in this research.

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Appendix I - PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol*

Section and topic	Item No	Checklist item	Location where item is reported
ADMINISTRATIVE INFORMATION			
Title:			
Identification	1a	Identify the report as a protocol of a systematic review	**Page 1**
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	**Page 4**
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	**Page 2**
Authors:			
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	**Page 1**
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	**Page 10**
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	**Not applicable**
Support:			
Sources	5a	Indicate sources of financial or other support for the review	**Page 10**
Sponsor	5b	Provide name for the review funder and/or sponsor	**Not applicable**
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	**Not applicable**
INTRODUCTION			
Rationale	6	Describe the rationale for the review in the context of what is already known	**Pages 2, 3 and 4**
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	**Page 4**
METHODS			
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	**Page 6**
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	**Page 5**
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	**online supplemental Appendix I**
Study records:			
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	**Pages 6 and 7**

Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	**Page 6**
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	**Pages 6 and 7**
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	**Page 7**
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	**Page 8**
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	**Page 8**
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised	**Not applicable**
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I^2, Kendall's τ) **Not applicable**	
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression	**Not applicable**
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	**Page 8**
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies) **Not applicable**	
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	**Not applicable**

* It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.

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Appendix II - Search strategy:

Database	Search strategy
CINAHL	(MH "Telehealth") OR TI (telehealth or telemedicine or telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mhealth or "digital health" or technology or "remote consultation") OR AB (telehealth or telemedicine or telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mhealth or "digital health" or technology OR "remote consultation") AND (MH "Interprofessional Relations") OR TI ("interprofessional collaboration" or "interprofessional teamwork" or "interprofessional practice" OR "interdisciplinary practice" OR "Interprofessional care" OR "interprofessional relations" OR "interprofessional team") OR AB ("interprofessional collaboration" or "interprofessional teamwork" or "interprofessional practice" OR "interdisciplinary practice" OR "Interprofessional care" OR "interprofessional relations" OR "interprofessional team") AND (MH "Primary Health Care") OR TI ("primary health care" or "primary care" OR "primary healthcare" or "primary care nursing" or "family medicine" or "family practice" or "general medicine") OR AB ("primary health care" or "primary care" OR "primary healthcare" or "primary care nursing" or "family medicine" or "family practice" or "general medicine")
PubMed	(((("Remote Consultation"[Mesh] Consultation, Remote Teleconsultation Teleconsultations) OR ("Telemedicine"[Mesh] Mobile Health Health, Mobile mHealth Telehealth eHealth)) OR (telemonitoring or telepractice or telenursing or telecare or ehealth or e-health or mhealth or "digital health" or technology)) AND (("Interprofessional Relations"[Mesh] Relations, Interprofessional) OR ("interprofessional collaboration" or "interprofessional teamwork" or "interprofessional practice" OR "interdisciplinary practice" OR "Interprofessional care" OR "interprofessional relations" OR "interprofessional team")) AND ("Primary

	Health Care"[Mesh] OR "Primary Health Care"[tw] OR Care, Primary Health Health Care, Primary Primary Healthcare Healthcare, Primary Primary Care Care, Primary "primary care nursing" or "family medicine" or "family practice" or "general medicine"))