











Teleconsultation in the prevention and control of older persons' health with regard to the COVID-19 pandemic: study protocol

Teleconsulta para prevenção e controle da saúde do idoso frente à pandemia de COVID-19: protocolo do estudo

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ABSTRACT

OBJECTIVE: To report the following study protocol: "Prevention program for older persons' health care focusing on the COVID-19 pandemic in the city of Recife – PE." **METHODS:** An action research study will be conducted with 151 older people of both sexes residing in the 8 health districts of Recife, Brazil. A teleconsultation service will be used to converse with participants. Activities will be organized into 2 moments: diagnosis and intervention. A guided conversation strategy will be used, dealing with issues related to coronavirus disease 2019 (COVID-19) prevention; social isolation; thoughts, emotions, and spirituality; family and community support; and personal development and ground rules for everyday life. The intervention with each older person will happen weekly for 12 weeks and will be characterized by listening to them and exchanging knowledge with the aim of bonding and optimizing adherence and compliance to COVID-19 prevention and control measures. Our data analysis will follow 3 approaches: cross-sectional (multivariate regression model), quasi-experimental (analysis of standardized residuals), and qualitative (interview and content analysis). **EXPECTED RESULTS AND RELEVANCE:** The construction of scientific knowledge is a key strategy when faced with the great challenge to global collective health presented by the COVID-19 pandemic. Data generated in this study may contribute to the improvement of knowledge, attitudes, and preventive practices, as well as to a good acceptance of the prevention program by older participants.

KEYWORDS: aged, disease prevention, primary health care, remote consultation, coronavirus infections.

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OBJETIVO: Apresentar o protocolo “Programa de prevenção para a saúde do idoso com foco na pandemia de COVID-19 no município do Recife – PE”. **METODOLOGIA:** Um estudo de pesquisa-ação será conduzido com 151 idosos de ambos os sexos que residem nos 8 distritos sanitários de Recife, Brasil. Um serviço de teleconsulta será usado para comunicação com os participantes. As atividades serão organizadas em 2 momentos: diagnóstico e intervenção. Uma estratégia de conversa guiada será adotada para com os idosos, tratando de temas relacionados à prevenção de COVID-19; isolamento social; pensamentos, emoções e espiritualidade; família e suporte comunitário; desenvolvimento pessoal; e regras básicas para o cotidiano. A intervenção com cada idoso ocorrerá uma vez por semana por 12 semanas, sendo caracterizada pela escuta e troca de conhecimentos com o objetivo de gerar um vínculo e otimizar a aderência e observância de medidas de prevenção e controle de COVID-19. A análise de dados seguirá 3 abordagens: transversal (modelo de regressão multivariada), quase-experimental (análise de resíduos padronizados), e qualitativa (entrevista e análise de conteúdo). **RESULTADOS ESPERADOS E RELEVÂNCIA:** A construção do conhecimento científico é uma estratégia chave frente ao grande desafio para a saúde coletiva global representado pela pandemia de COVID-19. Dados gerados por este estudo podem contribuir para a melhoria do conhecimento, atitudes, e medidas de prevenção, além de uma boa aceitação do programa de prevenção por parte dos participantes idosos. **PALAVRAS-CHAVE:** idoso, prevenção de doenças, atenção primária à saúde, consulta remota, infecções por coronavírus.

INTRODUCTION

The older population stands out when considering priority groups for coronavirus disease 2019 (COVID-19) prevention and combat strategies. In general, this group has a less favorable outcome in terms of disease progression. The mortality and proportion of patients with severe pneumonia are significantly higher in the older population than in middle-aged and younger individuals.¹

The construction of a care model for the older population is an important challenge for health care systems,² given circumstances that involve providing health care for this group while ensuring that virus transmission is blocked. The epidemiological profile of this population is characterized by chronic diseases requiring continuous care, thus being a highly vulnerable group to the effects of social distancing, which is an important means of preventing COVID-19.

The presence of frailty and comorbidity in this population can result in longer hospital stays and the need for more intensive care, which makes prevention and control strategies against the spread of the virus even more relevant.

The use of telehealth as an intervention strategy for older persons, such as teleconsultation, minimizes the impact of social distancing measures adopted during the pandemic. Moreover, it reduces geographic barriers and eliminates the risk of contamination presented by face-to-face care while offering a safe service.

The research problem under consideration is the greater vulnerability of the older population in the context of the COVID-19 pandemic, having an increased probability of progressing to a severe form of the disease, requiring the use of intensive care resources for longer

periods, and having a greater chance of death. This scenario places this group as a priority for infection prevention and control strategies.

The present article describes the methods used in the research titled “Prevention program for older persons’ health care focusing on the COVID-19 pandemic in the city of Recife – PE.” The study involves 3 sub-projects focused on: (1) the analysis of factors associated with knowledge, attitudes, and preventive practices related to COVID-19 and of difficulties and barriers to maintaining social isolation in the older population (a cross-sectional study); (2) the analysis of the effect of a teleconsultation program on prevention and control considering knowledge, attitudes, and preventive practices related to COVID-19 and difficulties and barriers to maintaining social isolation (a quasi-experimental study); (3) the analysis of the satisfaction of older participants considering the prevention program (a qualitative study).

METHODS

Study design

A mixed methods (qualitative and quantitative) research approach will be adopted. Cross-sectional, quasi-experimental, and qualitative designs will be used for the development of subprojects to encompass this study.

The construction of the teleconsultation program for preventing and controlling COVID-19 considering older persons’ health in the city of Recife – PE will follow an action research design,³ using evidence-informed health policymaking⁴ and situational strategic planning as its basis.⁵

Population and sample

The project will be conducted in all 8 health districts of Recife. Eight teleconsultants will be contemplated, each with the capacity for weekly consultations with 20 older people, with the final aim of reaching 160 participants. Therefore, the sample size and sampling process for the present study will be defined by convenience, the ability to recruit qualified teleconsultants, and agreement with the city's health management division.

Recruitment

The criteria for participation in the *60+ at home — COVID-19 program* will be: individuals aged 60 years or over, of both sexes, residing in one of the city's health districts, and with access to a computer or mobile telephone with internet access.

The interdisciplinary and interprofessional program will be targeted at the health care needs of the older population of the city of Recife, as reported by health division managers. Meetings will be held with the Municipal Health Department management team for older persons' health care, focusing on the dialogue regarding the health care needs of this population and discussing the available scientific evidence and feasibility of implementation strategies. Subsequent steps will be then defined, together with a schedule for their implementation.

Participant recruitment will be initiated following a strategic analysis together with the municipal team responsible for coordinating older persons' health care, who recommended the target group for the program. Older people cared for by the Municipal Health Department's COVID-19 referral centers will be included in the prevention program, to be conducted via telephone.

Teleconsultation

A teleconsultation service will be used as a conversation strategy with the older individuals for developing health education actions aimed at preventing COVID-19 and for monitoring their chronic conditions, which increase the risks brought by contamination.

A unified communication and collaboration platform using Microsoft Teams will be used to coordinate teleconsultations via telephone or computer, as it is considered a tool for continuous use by the population. The platform will be made available by the State Telehealth Center of the Pernambuco State Health Department (NET-SES-PE), along with technical support for the training, operation, and management of the application.

This platform enables audio and videoconference calls and file storage with a data confidentiality resource and software integration, meeting all requirements listed in the Health

Insurance Portability and Accountability Act (HIPAA)⁶ protocol. The electronic link for teleconsultation will be sent to the participant via WhatsApp. Calls were made by experienced members of the multidisciplinary health care team.

Activity

The teleconsultation activity for COVID-19 prevention and control will be conducted with each participant on a weekly basis, for 12 weeks. Each virtual meeting will last between 30 minutes and 1 hour and involved listening to and exchanging information with the participant. The program strategy will aim to build a relationship and optimize adherence and compliance with COVID-19 prevention and control measures.

Each teleconsultation will be organized in 2 stages: (1) diagnosis (epidemiological survey and knowledge, attitude, and practices [KAP] survey); and (2) intervention (COVID-19 prevention actions) (Table 1).

Semi-structured research instruments will be used at the time of diagnosis (baseline): a) a COVID-19 screening instrument — comprising items related to virus infection according to the literature; b) a sociodemographic survey; c) a health conditions questionnaire; d) the Lawton Scale — Instrumental Activities of Daily Living;⁷ e) family and community functioning assessment; f) a cognitive screening; g) the Geriatric Depression Scale;⁸ h) the Trait Anxiety Scale; i) the ASHA FACS protocol — communication independence;⁹ and j) a survey on COVID-19 knowledge, attitude, and preventive practices in addition to difficulties and barriers to maintaining social isolation in the older population. The KAP survey was chosen for this end and will serve as basis for COVID-19 prevention and control activities. Finally, k) a questionnaire on difficulties and barriers to maintaining prevention attitudes (Table 2).

The COVID-19 screening instrument will be applied at the beginning of each intervention. Participants with a score equal to or greater than 9 in this instrument will be referred to the Family Health Unit or COVID-19 referral service. Data collection will be performed online by teleconsultants at the moment of the activity using Google Forms software.

The intervention will focus on COVID-19 prevention and control activities among the participants. These actions will be planned according to the needs identified at diagnosis and the themes proposed by the "Healthy Aging in Times of Pandemic — LabEduca60+ Guidelines" booklet.¹⁰

A guided conversation strategy will be adopted, in which participants received information and shared their knowledge, concerns, and strategies for dealing with the COVID-19 pandemic.

The following themes will be addressed: COVID-19 the new coronavirus — concept, origin, and means of transmission; social isolation — its importance and how older people are coping; preventive behaviors — attitudes aiming to prevent infection; thoughts, emotions and spirituality — emotional support strategies; family and community support — importance and strategies; personal development — strategies for occupational activities; basic rules for everyday life; balanced diet; physical activities and exercises; and creativity, leisure, and new experiences. Lastly, strategies were defined for the continuity of COVID-19 prevention activities in the participants' weekly routines, and the program was evaluated.

The diagnosis and intervention moments will occur at each virtual meeting with the individual, according to the addressed theme. At the end of the 12-week intervention period, the survey on knowledge, attitudes, and preventive practices related to COVID-19 in addition to difficulties and barriers to maintaining social isolation in the older population will be reapplied, with the results being considered an outcome of this action research initiative.

Ethical considerations

This research was approved by the Human Research Ethics Committee of the Health Sciences Center of Universidade

Table 1. Activities performed in the prevention program for older persons' health care focusing on the COVID-19 pandemic in the city of Recife, PE.

Day	Activity	
	Diagnosis/instrument	Prevention action/theme to be addressed*
1	Presentation of the research and informed consent KAP survey COVID-19 screening	Listening and knowledge exchange The new coronavirus
2	COVID-19 screening Sociodemographic questionnaire Cognitive screening Health conditions questionnaire	Listening and knowledge exchange Social isolation How to deal with social isolation?
3	COVID-19 screening Evaluation of family and community functioning	Listening and knowledge exchange Family and community support
4	COVID-19 screening Evaluation of depression symptoms (GDS)	Listening and knowledge exchange Thoughts, emotions, behaviors, and spirituality
5	COVID-19 screening Evaluation of anxiety	Listening and knowledge exchange Thoughts, emotions, behaviors, and spirituality
6	COVID-19 screening Assessment of communication independence (ASHA FACS — domain 1)	Listening and knowledge exchange Personal development
7	COVID-19 screening Assessment of communication independence (ASHA FACS — domains 2 to 4)	Listening and knowledge exchange Preventive behaviors
8	COVID-19 screening Evaluation of Instrumental Activities of Daily Living (Lawton and Brody scale)	Listening and knowledge exchange Basic rules for everyday life
9	COVID-19 screening	Listening and knowledge exchange Balanced diet
10	COVID-19 screening	Listening and knowledge exchange Physical activities and exercise
11	COVID-19 screening	Listening and knowledge exchange Creativity, leisure, and new experiences Incorporation of preventive measures into the daily routine
12	COVID-19 screening KAP survey	Program evaluation

*Themes proposed by the "Healthy aging in times of pandemic — LabEduca60+ Guidelines" booklet.¹⁰ KAP: Knowledge, Attitude, and Practices; COVID-19: coronavirus disease 2019; GDS: Geriatric Depression Scale; ASHA FACS: American Speech-Language-Hearing Association Functional Assessment of Communication Skills for Adults.

Table 2. Instruments to be used for data collection.

Instrument	Description	Variables	Reference
Sociodemographic questionnaire	Survey of sociodemographic and economic data	Sex, age, marital status, race/skin color, family income, occupation, literacy, education	Prepared by the authors
KAP survey	Knowledge, attitudes, and preventive practices related to COVID-19	Knowledge: COVID-19, means of information, recommendations for prevention, purpose of prevention. Attitude: agreement with recommendations, opinion on recommendations. Practice: frequency of preventive measures, frequency of leaving home, mask use, hand washing, respiratory etiquette, isolating at home after contact with the virus.	Prepared by the authors
Instrument: difficulties and barriers to maintaining preventive attitudes	Difficulties and barriers to complying with recommendations for COVID-19 prevention	Difficulty in hand washing, difficulty with respiratory etiquette, difficulty in using a mask, difficulty staying at home, difficulty in isolating at home after contact with the virus	Prepared by the authors
COVID-19 screening instrument	Items related to virus infection according to the literature: fever, headache, runny nose or sneezing, throat pain/irritation, dry cough, difficulty breathing, body aches, diarrhea, travel in the previous 14 days to somewhere with confirmed COVID-19 cases, contact in the previous 14 days with any confirmed COVID-19 case, loss of smell, loss of taste 1–9 = low risk 10–19 = moderate risk 20–36 = high risk	Risk of COVID-19	Prepared by the authors (based on the Mozambique Telehealth Risk Self-assessment) ¹²
Cognitive screening	Answer 3 questions: 1) Has a family member or friend told you that you are becoming forgetful? 2) Has the forgetfulness become worse in the recent months? 3) Is the forgetfulness preventing you from performing some daily activities? Yes to any of the questions = indicative of cognitive decline	Indication of cognitive decline	The Older Person's Health Booklet ¹³
Health conditions questionnaire	Survey of the main self-reported morbidities	Hypertension, diabetes mellitus, cardiovascular disease, osteoporosis, osteoarthritis, neurological disease, cancer, arbovirus infection, smoking, alcoholism	Prepared by the authors
Family APGAR	Assessment instrument designed to reflect the satisfaction of each family member. From a predetermined questionnaire, families are classified as functional or moderately/severely dysfunctional	Family and community functioning	Using the family APGAR score to evaluate family relationships in the elderly: an integrative review ¹⁴

Continue...

Table 2. Continuation.

Instrument	Description	Variables	Reference
Geriatric Depression Scale, short form (GDS – 15)	A 15-question short form of the GDS scale on how a person has been feeling in the last week Scores ≥ 6 points are considered indicative of depression	Depression symptoms	Reliability of the Brazilian version of the Geriatric Depression Scale short form ⁸
Trait Anxiety Scale	Assesses anxiety as a trait (STAI-T). It has 20 items with a score of 1–4 for each item Score ranges from 20 to 80 Scores > 42 tend toward anxiety and those < 38 tend toward depression	Anxiety	Manual for the State-Trait Anxiety Inventory (STAI) ¹⁵
ASHA FACS Protocol	The questionnaire has 43 items divided into 4 domains: social communication; communication of basic needs; reading, writing and numerical concepts; and daily planning Seven-point scale: 7 – individual who does not need help to communicate 1 – needs maximum help	Communication independence	Functional communication skills: older persons' health ¹⁶
Lawton & Brody scale	Evaluates performance in nine activities: telephone use, shopping, preparing meals, tidying the house, washing clothes, minor household repairs, getting around outside the home, medication responsibility, and money management 9 points – maximum dependency 27 points – total independence	Independence for Instrumental Activities of Daily Living	Assessment of older people: self-maintaining and instrumental activities of daily living ¹⁷

APGAR: Adaptability, Partnership, Growth, Affection, and Resolve.

Federal de Pernambuco under Certificate of Presentation for Ethical Appreciation (CAAE) number 31829720 6 0000 5208 (registration No. 4 089 705). All older individuals consented to participate in the study through oral consent obtained by telephone contact.

Data storage and analysis

The collected data will be recorded on a Microsoft Excel-based database. Data analyses will be performed using SPSS software, version 20.

Data analysis will vary according to the specific objective of each subproject (Table 3).

A cross-sectional study design will be adopted for the first subproject, which considers a description of factors associated with knowledge, attitudes, and preventive practices related to COVID-19, in addition to the difficulties and barriers to maintaining social isolation in the older population.

Data analysis will be performed using a multivariate regression model, identifying the effect measure expressed by the odds ratio (OR) and corresponding 95% confidence interval (95%CI).

Data from the second subproject, considering an analysis of the effect of the teleconsultation program on COVID-19 prevention and control and covering the knowledge, attitudes, and preventive practices in addition to difficulties and barriers to maintaining social isolation, will be analyzed through a quasi-experimental design. This design is characterized by the analysis of the effect of an intervention in a single comparison group. Descriptive statistics and analysis of standardized residuals will be used to compare the characteristic patterns of each category before and after the intervention.

The third subproject will assess the satisfaction of participants regarding the prevention program for older persons' health care focusing on the COVID-19 pandemic in the city

of Recife. A qualitative method will be adopted for analysis through an interview to be performed on the last day of the program. The interviews will be transcribed and evaluated through content analysis, as proposed by Bardin,¹¹ split into the pre-analysis stages (attentive and floating reading of the transcribed words of the participants); coding of the raw data phase (cut, aggregation, and enumeration); analysis of category themes (identification of core meanings); identification of category themes; and discussion (inferences and interpretations regarding the obtained materials by relating them to the theoretical framework).

RELEVANCE AND DISSEMINATION

The phenomenon of the COVID-19 pandemic involving older persons' health care and the need to prevent the

spread of severe acute respiratory syndrome coronavirus 2 (SARS COV-2) is a very complex situation. Therefore, the availability of a prevention protocol to be applied remotely with the potential to reach large numbers of older people (given the coverage of the national health system) will be of great importance in preserving the health of this population and contributing to their quality of life.

Results of the study will be disseminated in the near future through presentations at conferences on aging and articles to be published in peer-reviewed journals.

CONFLICTS OF INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Table 3. Subprojects, study design, data collection instruments, and data analysis methods.

Subproject	Study design	Data collection instruments	Data analysis methods
1- Factors associated with knowledge, attitudes, and preventive practices related to COVID-19, and difficulties and barriers to maintaining social isolation in the older population	Cross-sectional	<ul style="list-style-type: none"> - Knowledge, Attitude, and Practices (KAP) survey for COVID-19 prevention - Difficulties and barriers to maintaining preventive attitudes - COVID-19 screening instrument - Sociodemographic survey - Cognitive screening - Health conditions - Family and community functioning - Geriatric Depression Scale - Trait Anxiety Scale - ASHA FACS Protocol - Lawton Scale 	Multivariate regression model, estimating the odds ratio and corresponding 95% confidence interval as an effect measure
2- Analysis of the effect of the teleconsultation program on COVID-19 prevention and control considering knowledge, attitudes, and preventive practices in addition to difficulties and barriers to maintaining social isolation	Quasi-experimental	<ul style="list-style-type: none"> - KAP survey for COVID-19 prevention - Difficulties and barriers to maintaining preventive attitudes 	Descriptive statistics and analysis of standardized residuals to compare characteristic patterns of each category before and after the intervention
3- Satisfaction of the participants regarding the prevention program for older persons' health care focusing on the COVID-19 pandemic in the city of Recife	Qualitative study	End of program interview covering the following themes: <ul style="list-style-type: none"> - Program evaluation; - Participant satisfaction; - Contribution of the program to health care; - Suggestions for improvement 	Interview and content analysis, split into pre-analysis stages (cursory and attentive reading of the participants' transcribed words); coding of the raw data (cut, aggregation, and enumeration); analysis of category themes (identification of core meanings); identification of category themes; and discussion (inferences and interpretations regarding the obtained materials by relating them to the theoretical framework)

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AUTHORS' CONTRIBUTIONS

VLS: conceptualization, data curation, methodology, project administration, writing – review & editing.

CHAS: conceptualization, methodology, writing – review & editing. AFBB: methodology, writing – review & editing, supervision. APOM: methodology, writing – review & editing, supervision. TPSS: methodology, writing – review & editing. CCSAL: writing – review & editing. MLGC: writing – review & editing. AKOTB: writing – review & editing. IKGA: writing – review & editing. MGWSC: conceptualization, methodology, writing – review & editing.

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