

Early detection of SARS-CoV-2 in a long stay institution for the elderly: Scoping review

Detecção precoce do SARS-CoV-2 em instituição de longa permanência para idosos: Scoping review

DetECCIÓN temprana de SARS-CoV-2 en institución de larga estancia para ancianos: Revisión de alcance

RESUMO

Objetivo: Identificar na literatura científica as recomendações para detecção precoce do SARS-CoV-2 nas Instituições de Longa Permanência para Idosos. Método: Trata-se de Scoping Review segundo Joanna Briggs Institute Reviewers' Manual, com coleta ocorrida nos meses de junho e julho de 2021, em publicações da SciELO, PubMed, MEDLINE, Portal BVS, Scopus e CINAHL, sem limitação temporal. Resultado: Os artigos apresentaram a importância do teste RT-PCR e sorológico RT-PCR, assim como exame de imagem e critérios clínicos-epidemiológicos, em colaboradores e idosos das Instituições de Longa Permanência para Idosos. Desta forma, é necessário que as instituições descrevam em seus planos de contingência, as recomendações para controle da disseminação de SARS-CoV-2, explanando sobre a periodicidade de coleta dos exames, bem como especificando o tipo e a situação de aplicação. Conclusão: a detecção precoce em Instituições de Longa Permanência para Idosos é essencial para prevenir a transmissão do SARS-CoV-2 nestes serviços de saúde.

DESCRIPTORES: SARS-CoV-2; Idoso; Instituição de Longa Permanência para Idosos.

ABSTRACT

Objective: To identify in the scientific literature recommendations for early detection of SARS-CoV-2 in Long-Term Care Institutions for the Elderly. Method: This is a Scoping Review according to Joanna Briggs Institute Reviewers' Manual, with data collected in June and July 2021, in publications by SciELO, PubMed, MEDLINE, Portal BVS, Scopus, and CINAHL, without time limitation. Result: The articles presented the importance of the RT-PCR test and RT-PCR serological test, as well as imaging exams and clinical-epidemiological criteria, in employees and elderly people from Long Stay Institutions for the Elderly. In this way, it is necessary for institutions to describe in their contingency plans the recommendations for controlling the spread of SARS-CoV-2, explaining the frequency of collection of exams, as well as specifying the type and situation of application. Conclusion: early detection in Long Stay Institutions for the Elderly is essential to prevent the transmission of SARS-CoV-2 in these health services.

DESCRIPTORS: SARS-CoV-2; Elderly; Long Stay Institution for the Elderly.

RESUMEN

Objetivo: Identificar recomendaciones en la literatura científica para la detección temprana del SARS-CoV-2 en Instituciones de Larga Estancia para Adultos Mayores. Método: Se trata de una Scoping Review según el Manual de Revisores del Instituto Joanna Briggs, con datos recopilados en junio y julio de 2021, en publicaciones de SciELO, PubMed, MEDLINE, Portal BVS, Scopus y CINAHL, sin limitación de tiempo. Resultado: Los artículos presentaron la importancia de la prueba RT-PCR y la prueba serológica RT-PCR, así como pruebas de imagen y criterios clínico-epidemiológicos, en empleados y ancianos de Instituciones de Larga Estancia para Ancianos. Así, es necesario que las instituciones describan en sus planes de contingencia las recomendaciones para el control de la propagación del SARS-CoV-2, explicando la frecuencia de recolección de las pruebas, así como especificando el tipo y situación de aplicación. Conclusión: la detección temprana en Instituciones de Larga Estancia para Adultos Mayores es fundamental para prevenir la transmisión del SARS-CoV-2 en estos servicios de salud.

DESCRIPTORES: SARS-CoV-2; Anciano; Institución de Larga Estancia para Adultos Mayores.

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ORCID: 0000-0002-2112-0920**Marlise Lima Brandão**Nurse, Master in Nursing, Doctoral Student at the Postgraduate Program in Nursing, Federal University of Paraná
ORCID: 0000-0002-2367-2390**INTRODUCTION**

Long-stay institutions are places of high risk of transmission of SARS-CoV-2 between residents and employees. (1) A multicenter study found that 1.3 cases of COVID-19 were detected in health workers for every three cases identified among residents of Long Stay Institutions for the Elderly (LSIE). (1)

Countries in North America, Asia, Europe and Oceania had 30% and 60% of all deaths from COVID-19 that occurred in LSIEs, with an emphasis on contamination in frail elderly. (2) Elderly residents are at greater risk of developing severe illness and death, mainly because they are more vulnerable and have pre-existing diseases and/or functional decline. (1)

Thus, the challenge in the control of COVID-19 in LSIE is the recognition of an infected person, either through epidemiological investigations or laboratory tests, so that the transmission of SARS-CoV-2 is interrupted. (2)

SARS-CoV-2 test positivity rates vary across LSIEs (4% to 77%), averaging 37%, rising to 42% during outbreaks. (1) Influence on transmission in LSIE: the collective environment, the presence of frail elderly, the number of employees who transit in other environments with exposure to the virus, as well as the high presence of visits. (2)

In view of this magnitude of impact of COVID-19 on LSIEs, the World Health Organization (WHO) issued a summary

of policies for the prevention and management of SARS-CoV-2 in these spaces, with description of the changes to the services, in order to prevent the spread of the disease. (1)

Among these actions, the early detection of SARS-CoV-2 stands out, which can be performed through tests such as RT-PCR (reverse transcription followed by polymerase chain reaction), that detects infectious and non-infectious viral RNA particles that confirm the presence of the virus in the patient. (1) Among these actions, the early detection of SARS-CoV-2 stands out, which can be performed through tests such as RT-PCR (reverse transcription followed by polymerase chain reaction), that detects infectious and non-infectious viral RNA particles that confirm the presence of the virus in the patient. (3)

Preventive measures and control of COVID-19 in LSIEs are effective strategies to reduce the risk of contamination, including several recommendations such as: humanized restriction of visits, control of access for workers and service providers, rigorous hand washing and use of 70% hand sanitizer, tracking signs and symptoms, changing clothes and shoes, wearing a mask, isolation and social distancing. (2)

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tracking signs and symptoms, changing clothes and shoes, wearing a mask, isolation and social distancing.

METHOD

It is a Scoping Review, which consists of a systematic, exploratory review, with the objective of identifying relevant scientific production in a given area, developed according to the recommendations of the Joanna Briggs Institute (JBI) Reviewers' Manual (4), with research in electronic databases. To meet the need for the aforementioned objective, it is proposed to develop the review with the following guiding question: What are the recommendations for early detection of SARS-CoV-2 in elderly residents in LSIE?

Eligibility criteria included: studies published in full in English, Spanish and Portuguese, without time limitation, with the keywords COVID-19 and Long-Stay Institutions for the Elderly and their synonyms. The consultation took place from June to July 2021, in the following electronic databases: Scientific Electronic Library Online (SciELO), National Library of Medicine (PubMed) da Medical Literature Analysis and Retrieval System Online (MEDLINE), Virtual Health Library Portal (VHL), Scopus e Cumulative Index to Nursing and Allied Health Literature (CINAHL), the specific search strategy was developed with the support of a professional librarian and was carried out through the use of control-

led descriptors: “coronavirus”; “long stay institution for elderly (instituição de longa permanência para idosos)”; “elderly (idosos)”, as well as their synonyms, Chart 1 demonstrates the search strategies used for PubMed, Scopus and VHL Portal.

Duplicate studies, editorials, opinion articles, event summaries, integrative reviews, case reports and/or experiences were excluded.

The selection results are presented in the form of a flowchart (Figure 1), as directed by JBI⁽⁴⁾ and Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR)⁽⁵⁾, as well as classified by the level of evidence according to the Oxford Center for Evidence-based Medicine.⁽⁷⁾

RESULTS

The search and selection process for the studies in this review is shown in Figure 1, as recommended by the PRISMA-ScR checklist.⁽⁶⁾

251 studies were identified in the databases, organized in the EndNote® software, with automatic exclusion of 45 duplicate articles, after reading the titles, four more manuscripts were excluded due to duplicity, one article for not being available in full and two for the language of publication (French/Norwegian). After reading the abstracts, 155 articles did not meet the type of study/material. Among the 44 selected, after reading in full, 14 studies were excluded by the type of study. Therefore, the final sample of this review totaled 30 studies, summarized in Table 2.

In Chart 2, cross-sectional studies (CSS) stand out, with 14 (46.7%) articles included in the review, classified with level of evidence 3B.

Regarding the population of the articles, 17 (56.7) of the studies were conducted with the elderly, 4 (13.3%) with health professionals, 3 (10.0%) with caregivers of the elderly, 2 (6.7%) with LSIE managers and 17 (56.7%) in LSIE, as can be seen in Table 1.

Regarding the journal where the studies were published, it was found that the

Table 1 – Search strategy used in Scoping Review. Curitiba, Paraná, Brazil, 2021

| Database | Search strategy |
|------------|--|
| VHL Portal | <p>((("2019-2020" OR 2019 OR da:202*) ("New Coronavirus" OR "Novel Coronavirus" OR "Nuevo Coronavirus" OR "Novo Coronavirus" OR "Coronavirus disease" OR "Enfermedad por Coronavirus" OR "severe acute respiratory syndrome coronavirus 2")) OR ((2019-ncov) OR (ncov 2019) OR 2019ncov OR covid19 OR (covid-19) OR covid2019 OR (covid-2019) OR (covid 2019)) OR ((srag-cov-2 OR sars-cov-2 OR sars2 OR (sars 2) OR (sars cov 2) OR cov 19 OR cov2019 OR Coronavirus* OR "Severe Acute Respiratory Infections" OR "Severe Acute Respiratory Infection" OR "Coronavirus 2" OR "acute respiratory disease" OR mh:Betacoronavirus OR mh:"Coronavirus infections" OR mh:"sars virus") AND (tw:2019 OR da:202*) AND NOT da:201*) OR (Wuhan market virus) OR (virus mercado Wuhan) OR "Wuhan Coronavirus" OR "Coronavirus de Wuhan") AND NOT (ti:dromedar*)) AND (("Instituição de Longa Permanência para Idosos" OR "Homes for the Aged" OR "Hogares para Ancianos" OR "Home, Old Age" OR "Homes, Old Age" OR "Old Age Home" OR "Old Age Homes" OR "Ancianatos" OR "Asilo para Idosos" OR "Asilos para Idosos" OR "Casas de Repouso para Idosos" OR "ILPI" OR "Instituição Asilar" OR "Instituições Geriátricas de Longa Permanência" OR "Saúde do Idoso Institucionalizado" OR "Health of Institutionalized Elderly" OR "Salud del Anciano Institucionalizado" OR "Health Status of Institutionalized Elderly" OR "Institutionalized Elderly Health" OR "Institutionalized Elderly" OR "Idoso Institucionalizado" OR "Anciano Institucionalizado") OR ("Idoso" OR "Aged" OR "Anciano" OR "Elderly" OR "Idoso de 80 Anos ou mais" OR "Aged, 80 and over" OR "Anciano de 80 o más Años") AND ("Institucionalização" OR "Institutionalization" OR "Institucionalización"))</p> <p>TITLE-ABS-KEY((coronavir* OR "corona virus" OR betacoronavir* OR covid19 OR "covid 19" OR nCoV OR "CoV 2" OR CoV2 OR sarscov2 OR 2019nCoV OR "novel CoV" OR "wuhan virus") OR ((wuhan OR hubei OR huanan) AND ("severe acute respiratory" OR pneumonia*) AND (outbreak*)) AND (("Instituição de Longa Permanência para Idosos" OR "Homes for the Aged" OR "Hogares para Ancianos" OR "Home, Old Age" OR "Homes, Old Age" OR "Old Age Home" OR "Old Age Homes" OR "Ancianatos" OR "Asilo para Idosos" OR "Asilos para Idosos" OR "Casas de Repouso para Idosos" OR "ILPI" OR "Instituição Asilar" OR "Instituições Geriátricas de Longa Permanência" OR "Saúde do Idoso Institucionalizado" OR "Health of Institutionalized Elderly" OR "Salud del Anciano Institucionalizado" OR "Health Status of Institutionalized Elderly" OR "Institutionalized Elderly Health" OR "Institutionalized Elderly" OR "Idoso Institucionalizado" OR "Anciano Institucionalizado") OR ("Idoso" OR "Aged" OR "Anciano" OR "Elderly" OR "Idoso de 80 Anos ou mais" OR "Aged, 80 and over" OR "Anciano de 80 o más Años") AND ("Institucionalização" OR "Institutionalization" OR "Institucionalización"))</p> |
| Scopus | <p>((("coronavirus"[MeSH] OR "coronavirus infections"[MeSH Terms] OR "coronavirus"[All Fields] OR "covid 2019"[All Fields] OR "SARS2"[All Fields] OR "SARS-CoV-2"[All Fields] OR "SARS-CoV-19"[All Fields] OR "severe acute respiratory syndrome coronavirus 2" [supplementary concept] OR "coronavirus infection"[All Fields] OR "severe acute respiratory pneumonia outbreak"[All Fields] OR "novel cov"[All Fields] OR "2019ncov"[All Fields] OR "sars cov2"[All Fields] OR "cov22"[All Fields] OR "ncov"[All Fields] OR "covid-19"[All Fields] OR "covid19"[All Fields] OR "coronaviridae"[All Fields] OR "corona virus"[All Fields]) AND (("Instituição de Longa Permanência para Idosos" OR "Homes for the Aged" OR "Hogares para Ancianos" OR "Home, Old Age" OR "Homes, Old Age" OR "Old Age Home" OR "Old Age Homes" OR "Ancianatos" OR "Asilo para Idosos" OR "Asilos para Idosos" OR "Casas de Repouso para Idosos" OR "ILPI" OR "Instituição Asilar" OR "Instituições Geriátricas de Longa Permanência" OR "Saúde do Idoso Institucionalizado" OR "Health of Institutionalized Elderly" OR "Salud del Anciano Institucionalizado" OR "Health Status of Institutionalized Elderly" OR "Institutionalized Elderly Health" OR "Institutionalized Elderly" OR "Idoso Institucionalizado" OR "Anciano Institucionalizado") OR ("Idoso" OR "Aged" OR "Anciano" OR "Elderly" OR "Idoso de 80 Anos ou mais" OR "Aged, 80 and over" OR "Anciano de 80 o más Años") AND ("Institucionalização" OR "Institutionalization" OR "Institucionalización"))</p> |
| PubMed | <p>((("coronavirus"[MeSH] OR "coronavirus infections"[MeSH Terms] OR "coronavirus"[All Fields] OR "covid 2019"[All Fields] OR "SARS2"[All Fields] OR "SARS-CoV-2"[All Fields] OR "SARS-CoV-19"[All Fields] OR "severe acute respiratory syndrome coronavirus 2" [supplementary concept] OR "coronavirus infection"[All Fields] OR "severe acute respiratory pneumonia outbreak"[All Fields] OR "novel cov"[All Fields] OR "2019ncov"[All Fields] OR "sars cov2"[All Fields] OR "cov22"[All Fields] OR "ncov"[All Fields] OR "covid-19"[All Fields] OR "covid19"[All Fields] OR "coronaviridae"[All Fields] OR "corona virus"[All Fields]) AND (("Instituição de Longa Permanência para Idosos" OR "Homes for the Aged" OR "Hogares para Ancianos" OR "Home, Old Age" OR "Homes, Old Age" OR "Old Age Home" OR "Old Age Homes" OR "Ancianatos" OR "Asilo para Idosos" OR "Asilos para Idosos" OR "Casas de Repouso para Idosos" OR "ILPI" OR "Instituição Asilar" OR "Instituições Geriátricas de Longa Permanência" OR "Saúde do Idoso Institucionalizado" OR "Health of Institutionalized Elderly" OR "Salud del Anciano Institucionalizado" OR "Health Status of Institutionalized Elderly" OR "Institutionalized Elderly Health" OR "Institutionalized Elderly" OR "Idoso Institucionalizado" OR "Anciano Institucionalizado") OR ("Idoso" OR "Aged" OR "Anciano" OR "Elderly" OR "Idoso de 80 Anos ou mais" OR "Aged, 80 and over" OR "Anciano de 80 o más Años") AND ("Institucionalização" OR "Institutionalization" OR "Institucionalización"))</p> |

Source: The authors, 2021.

Caption: VHL - Virtual Health Library Portal; PubMed - National Library of Medicine.

three journals with the highest number of publications were: Journal of the American Geriatrics Society and Journal of the American Medical Directors Association with 4 (13.3%) each, followed by the Journal of Aging and Social Policy with 3 (10.0%).

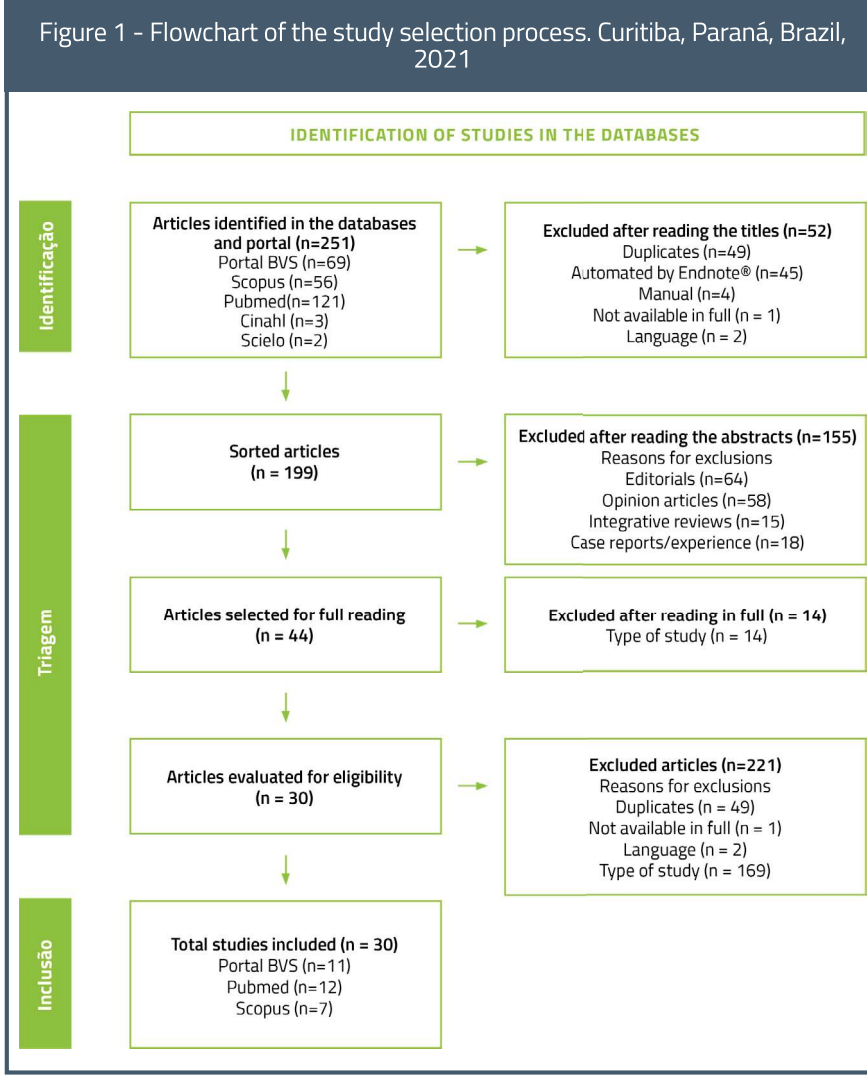
In relation to the continent of origin of the studies, North America was more representative, with 14 (46.7%) articles, followed by Europe with 10 (33.4%), South America had 5 (16.7%) and Asia with 1 (3.4%).

Early detection involved findings from real-time reverse transcriptase reaction (RT-PCR) tests, epidemiological clinical criteria, serological tests, imaging tests and cited test indications, but without specification, whether for the elderly, health professionals or LSIE caregivers. ^(2,10,16,21,24).

DISCUSSION

LSIEs are collective households and their residents are vulnerable to the transmission of infections, thus strengthening the need for early identification of the circulation of the SARS-CoV-2 virus. The health, well-being and safety of institutionalized elderly people remain crucial points and must be addressed by health institutions, social assistance and government agencies. ⁽³⁴⁻³⁵⁾

Among the studies selected in this review, it was noticed that many elderly people and health professionals with COVID-19 are asymptomatic or had mild



Source: Adapted from Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR). (6)

Table 2 – Summary of articles included in Scoping Review. Curitiba, Paraná, Brazil, 2021

| Summary of studies | | | | | | Summary of publications | | |
|--|---|--|---------------|---------------|----|-------------------------|--------------------|-----------|
| Title | Author / Year | Objective | Population | Type of study | LE | Continent | Journal | Data-base |
| We are Alone in This Battle: A Framework for a Coordinated Response to COVID-19 in Nursing Homes ⁽⁷⁾ | Behrens LL, Naylor MD, 2020 | Create a standardized framework for identifying the operational status of Nursing Homes to facilitate internal and external decision-making to ensure the best care. | LSIE managers | UCT | 2B | North America | J Aging Soc Policy | VHL |
| Coronavirus Disease 2019 Outcomes in French Nursing Homes That Implemented Staff Confinement With Residents ⁽⁸⁾ | Belmin J, Um-Din N, Danadio C, Magri M, Nghiem QD, Oquendo B, Pariel S, Lafuente CL, 2020 | To investigate COVID-19-related outcomes in French nursing homes that have implemented voluntary confinement of healthcare workers with residents. | Elderly | CS | 2B | North America | JAMA Network Open | VHL |



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|---|--|--|----------------------------------|-------------------|----|---------------|---------------------|--------|
| Primary care and nursing homes: on purpose of COVID-19 (Atención primaria y residencias de ancianos: a propósito de la COVID-19) ⁽⁹⁾ | Blanco-Torrio E, Sánchez GB, 2020 | To assess the impacts of COVID-19 on institutionalized elderly and the factors associated with the aggravation of cases, diagnosis, prevention and treatment. | Elderly | CSS | 3B | Europe | Semerg. | VHL |
| Asymptomatic SARS-CoV-2 Infection in Nursing Homes, Barcelona, Spain, April 2020 ⁽¹⁰⁾ | Borras-Bermejo B, Martínez-Gómez X, San Miguel MG, Esperalba J, Antón A, Martín E, Selvi M, Abadías MJ, et al., 2020 | Test-based screening as a containment measure to promptly implement effective prevention and control measures in nursing homes. | Elderly and Health Professionals | CSS | 3B | North America | Emerg. Infect. Dis. | VHL |
| Mortality and the Use of Antithrombotic Therapies Among Nursing Home Residents with COVID-19 ⁽¹¹⁾ | Brouns SH, Brüggemann R, Linkens AEMJH, MagdelFJ, Joosten H, Heijnen R, Hoek AJTC, Escolás MGAJ, et al., 2020 | To investigate whether use of oral anticoagulant therapy (OAT) was associated with lower mortality in NH residents with COVID-19. | Elderly | CSS | 3B | North America | J Am Geriatr Soc | VHL |
| COVIDApp as an Innovative Strategy for the Management and Follow-Up of COVID-19 Cases in Long-Term Care Facilities in Catalonia: Implementation Study ⁽¹²⁾ | EcheverríaP, Bergas MAM, Puig J, Isnard M, Massot M, Vedia C, Peiró R, Ordorica Y, et al., 2020 | Report the implementation of this innovative tool for the management of residents of long-stay institutions as a high-risk population. | Profis.de Saúde | UCT | 2B | Europe | JMIR | VHL |
| Estimates of the impact of COVID-19 on the mortality of institutionalized elderly people in Brazil. (Estimativas de impacto da COVID-19 na mortalidade de idosos institucionalizados no Brasil) ⁽¹³⁾ | Machado CJ, Pereira CCA, Viana BM, Oliveira, GL, Melo CD, Carvalho JFMG, Moraes FL, Moraes EN, 2020 | To estimate the impact of COVID-19 on the mortality of institutionalized elderly people in Brazil. | Elderly | CSS | 3B | South America | Cien Saude Colet | VHL |
| Telemonitoring of Brazilian Nursing homes before Coronavirus and COVID-19 Infections ⁽¹⁴⁾ . | Menezes TMO, Freitas AVS, Pedreira LC, Amaral JB, 2020 | To report the experience of telemonitoring of Long-Term Care Institutions for the Elderly in the face of infections by coronavirus and COVID-19 | LSIE | Case Series Study | 4 | South America | Rev Bras Enferm | VHL |
| COVID-19 en residencias de mayores: una asignatura pendiente ⁽¹⁵⁾ | García JMP, 2020 | To describe a case that occurred in a nursing home in the USA and the investigation and interventions applied | LSIE | CD | 4 | Europe | Enferm Clin | VHL |
| Nursing recommendations for facing dissemination of COVID-19 in Brazilian Nursing Homes ⁽¹⁶⁾ | Santana RF, Silva MB, Marcos DASR, Rosa CS, Wetzel Junior W, Delvalle R, 2020 | Develop a protocol of recommendations for dealing with the spread of COVID-19 in Long-Term Care Institutions for the Elderly. | LSIE | EO | 5 | South America | Rev Bras Enferm | VHL |
| Occurrence of infection and mortality by COVID-19 in Care Homes for older people in Brazil ⁽¹⁷⁾ | Wachholz PA, Moreira VG, Oliveira D, Watanabe HAW, Villas Boas PJF | To describe the occurrence of infection and mortality by COVID-19 in Long Term Care Facilities(LTCF) for the elderly in Brazil | Elderly | CSS | 3B | South America | Pré-print SciELO | VHL |
| American Geriatrics Society Policy Brief: COVID-19 and Nursing Homes ⁽¹⁸⁾ | American Geriatrics Society, 2020 | Establish American Geriatrics Society (AGS) recommendations to guide federal, state, and local governments when making decisions about the treatment of patients with coronavirus disease 2019 (COVID-19) in nursing homes (NHs) and other long-term care facilities (LTCFs) | LSIE | SR | 1A | North America | J Am Geriatr Soc | PubMed |

| | | | | | | | | |
|--|---|--|---|-----|----|---------------|-------------------------|--------|
| Heat Maps for Surveillance and Prevention of COVID-19 Spread in Nursing Homes and Assisted Living Facilities ⁽¹⁹⁾ | Caspi G, Chen J, Live-rant-Taub S, Shina A, Caspi O, 2020 | Implementation of an interactive, real-time, dashboard-based heatmap tool based on analytical metrics of the COVID-19 outbreak, as well as analysis of spatio-temporal data from Nursing Homes | LSIE | UCT | 2B | Asia | J Am Med Direct Assoc | PubMed |
| High impact of COVID-19 in long-term care facilities, suggestion for monitoring in the EU/EEA, May 2020 ⁽²⁰⁾ | Danis K, Fonteneau L, Georges S, Daniau C, Bernard-Stoecklin S, Domegan L, O'Donnell J, Hauge SH, et al., 2020 | Raise awareness of the severe impact of COVID-19 on the LTCF and provides an overview of the importance of surveillance and infection prevention and control (IPC) measures outlined in the European Center for Disease Prevention and Control (ECDC) guidance documents | LSIE | EO | 5 | Europe | Eurosurveillance | PubMed |
| SARS-CoV-2 infection, clinical features and outcome of COVID-19 in United Kingdom nursing homes ⁽²¹⁾ | Graham NSN, Junghans C, Downes R, Sendall C, Lai H, McKirdy A, Elliott P, Howard R, et al., 2020 | Understand the process of infection and transmission of SARS-CoV-2 in nursing homes in the UK, to develop prevention strategies to protect frail elderly people residing in these homes | Elderly / Elderly Caregivers | CS | 2B | Europe | J Infect | PubMed |
| Achieving Safe, Effective, and Compassionate Quarantine or Isolation of Older Adults With Dementia in Nursing Homes ⁽²²⁾ | Iaboni A, Cockburn A, Marcil M, Rodrigues K, Marshall C, Garcia MA, Quirt H, Reynolds KB, et al., 2020 | Discuss strategies for a safe, effective and compassionate isolation care plan and present the case of a patient with Dementia who is quarantined in a unit for patients with dementia | Elderly | CSS | 3B | North America | Am J Geriatr Psych | PubMed |
| Supporting individuals with intellectual and developmental disability during the first 100 days of the COVID-19 outbreak in the USA ⁽²³⁾ | Mills WR, Sender S, Lichtefeld J, Romano N, Reynolds K, Price M, Philipps J, White L, et al., 2020 | Describe how individuals with IDD were affected in the first 100 days of the COVID-19 pandemic. | Elderly / Elderly caregivers / Health professionals | EO | 5N | North America | J Intellect Disabil Res | PubMed |
| Prevalence of SARS-CoV-2 infection in general practitioners and nurses in primary care and nursing homes in the Healthcare Area of León and associated factors ⁽²⁴⁾ | Martín V, Fernández-Villa T, Gomez MLG, Mencía-Ares O, Rodríguez AR, Celada SR, Gómez MM, Guisado MTN, et al., 2020 | To assess the prevalence and factors associated with SARS-CoV-2 infection in general practitioners and nurses from primary care centers and nursing homes in the León Health Area (Spain). | Elderly | CSS | 3B | Europe | Semerg. | PubMed |
| Point-of-Care Chest Ultrasonography as a Diagnostic Resource for COVID-19 Outbreak in Nursing Homes ⁽²⁵⁾ | Nouvenne, A. et al. 2020 | To assess the feasibility of a chest ultrasound screening program in nursing homes to detect pneumonia related to coronavirus disease-19 (COVID-19) and improve the adequacy of hospital referrals for residents. | Elderly | CSS | 3B | Europe | J Am Med Dir Assoc | PubMed |
| Employment of Telemedicine in Nursing Homes: Clinical Requirement Analysis, System Development and First Test Results ⁽²⁶⁾ | Ohligs M, Stocklassa S, Rossaint R, Czaplak M, Follmann A, 2020 | Employ a holistic telemedicine system for nursing homes that facilitates connection with a GP and thus avoids unnecessary hospitalizations in case of outpatient illnesses. | Elderly | UCT | 2B | Europe | Clin Interv Aging | PubMed |
| COVID 19 Preparedness in Nursing Homes in the Midst of the Pandemic ⁽²⁷⁾ | Quigley DD, Dick A, Agarwal M, Jones KM, Mody L, Stone PW, 2020 | Describe COVID-19 preparedness in nursing homes amid the pandemic. | LSIE | CSS | 3B | North America | J Am Geriatr Soc | PubMed |

| | | | | | | | | |
|--|--|---|------------------------------|-----|----|---------------|------------------------|--------|
| Preventing the transmission of COVID-19 and other coronaviruses in older adults aged 60 years and above living in long-term care: a rapid review ⁽²⁸⁾ | Rios P, Radhakrishnan A, Williams C, Ramkissoon N, Pham B, Cormack GV, Grossmann MR, Muller MP, et al., 2020 | Review current guidelines for infection prevention and control (IPAC) of coronavirus disease-19 (COVID-19) or other coronaviruses in adults aged 60 years and older living in long-term care facilities (LSIE). | Elderly | SR | 1A | North America | Syst Rev | PubMed |
| Temperature in Nursing Home Residents Systematically Tested for SARS-CoV-2 ⁽²⁹⁾ | Rudolph JL, Halladay CW, Barber M, McConeghy KW, Mor V, Nanda A, Gravenstein S, 2020 | To describe temperature changes before and after universal testing for SARS-CoV-2 in nursing home residents. | Elderly | CS | 2B | North America | J Am Med Dir Assoc | PubMed |
| Characteristics of U.S. Nursing Homes with COVID-19 Cases ⁽³⁰⁾ | Abrams HR, Loomer L, Gandhi A, Grabowski CD, 2020 | Examine the characteristics of Nursing Homes in 30 US states with recorded cases of COVID-19. | LSIE | CSS | 3B | North America | J Am Geriatr Soc | Scopus |
| "We are Alone in This Battle": A Framework for a Coordinated Response to COVID-19 in Nursing Homes ⁽³¹⁾ | Behrens, LL, Naylor MD, 2020 | Offer a framework designed by nursing home leaders to facilitate internal and external decision-making and collective action to address these threats. | LSIE managers | CSS | 3B | North America | J Aging Soc Policy | Scopus |
| The Effects of ARBs, ACEIs, and Statins on Clinical Outcomes of COVID-19 Infection Among Nursing Home Residents ⁽³²⁾ | Spiegel AD, Bronselaer A, Teo JT, Byttebier G, Tré GD, Belmans L, Dobson R, Wynendaale E, et al., 2020 | Explore the association of ARBs, ACEIs and statins with clinical manifestations of Covid-19 infection in institutionalized elderly | Elderly | CS | 2B | North America | J Am Med Dir Assoc | Scopus |
| Bedside wireless lung ultrasound for the evaluation of COVID-19 lung injury in senior nursing home residents ⁽³³⁾ | Dini FL, Bergamini C, Allegrini A, Scopelitti M, Secco G, Miccoli M, Boni S, Brigada R, et al., 2020 | To evaluate the presence of lung lesions in institutionalized elderly people with Covid-19 infection, using portable wireless ultrasound. | Elderly | CSS | 3B | Europe | Monaldi Arch Chest Dis | Scopus |
| Commentary: COVID in care homes-challenges and dilemmas in healthcare delivery ⁽³⁴⁾ | Gordon LA, Goodman C, Achterberg W, Barker RO, Burns E, Hanratty B, Martin FC, Meyer J, et al., 2020 | Provide a commentary on the challenges and dilemmas in the management of Covid-19 in nursing homes | LSIE | CSS | 3B | Europe | Age Ageing | Scopus |
| Amid the COVID-19 Pandemic, Meaningful Communication between Family Caregivers and Residents of Long-Term Care Facilities is Imperative ⁽³⁵⁾ | Hado E, Feinberg LF, 2020 | To describe the importance of maintaining effective communication between family caregivers and institutionalized elderly | Elderly caregivers | SR | 1A | North America | J Aging Soc Policy | Scopus |
| COVID-19 in long-term care facilities for the elderly: laboratory screening and disease dissemination prevention strategies ⁽²⁾ | Moraes EN, Viana LG, Resende LMH, Vascellos LS, Moura AS, Menezes A, Mansano NH, Rabelo R, 2020 | To propose strategies for tracking Covid-19 infection in residents and health professionals of Nursing Homes | Elderly/Health professionals | CSS | 3B | South America | Cien Saude Colet | Scopus |

Source: The authors, 2021.
Caption: CD – Case Description; CS – Cohort study; UCT – Uncontrolled Clinical Trial; CSS – Cross-sectional study; LSIE – Long stay institutions for the elderly; EO – Expert Opinion; LE – Level of evidence; SR – Systematic review.

symptoms, thus, it becomes a great challenge to control the COVID-19 pandemic and recognize the infected person to interrupt the transmission route of SARS-CoV-2.⁽³⁶⁾

Many residents and health professionals had atypical, mild, or asymptomatic symptoms, reinforcing the importance of regular testing of elderly people and health profes-

sionals in LSIEs.^(10,21)

In this scenario, rigorous epidemiological investigations and laboratory tests are useful for identifying people with asympto-

matic infection, and it is recommended to prevent and control the disease with the implementation of test-based screening, such as RT-PCR, serology and other unspecified tests; imaging tests are also recommended, regardless of symptoms, in long-term care institutions for the elderly.^(10,15,36)

Understanding the process of infection and transmission of SARS-CoV-2 in long-stay institutions for the elderly is essential to develop prevention strategies aimed at their protection. Early detection through the aforementioned tests, of residents and healthcare professionals with suspected infection, rapid implementation of improved infection control measures are key to preventing and limiting new outbreaks. Thus, “laboratory screening of elderly residents and LSIE workers is a control and prevention strategy that must be combined with other protective measures, in a synergistic way.”^(2,3,4,5)

Therefore, early testing to identify symptomatic and asymptomatic cases and occupational health and safety measures help to minimize outbreaks and impact the prevention of new COVID-19 cases.⁽¹⁾ For this, it is necessary for the LSIEs to describe in their contingency plans the SARS-CoV-2 control strategies, explaining the frequency and specificity of exam collection, type and application situation, for clinical and epide-

Table 1 – Absolute and relative frequency, according to the population studied in the articles included in the Scoping Review. Curitiba, Paraná, Brazil, 2021

| Population | N | % |
|----------------------|-----|------|
| Elderly caregivers | 3 | 10,0 |
| LSIE managers | 2 | 6,7 |
| Elderly | 17 | 56,7 |
| LSIE | 9 | 30,0 |
| Health professionals | 4 | 13,4 |
| Total | 35* | |

Source: The authors, 2021

Caption: LSIE – Long Stay Institute for the Elderly.

Note: *Four studies included two populations and one study included three populations.

miological verification, of the disease in the elderly, health professionals or caregivers of the LSIE, since this attitude can help health professionals and managers to organize assistance to face the pandemic.⁽¹⁶⁾

CONCLUSION

Long-stay institutions for the elderly have a population of residents who are generally more vulnerable, have varying levels of dependence and complex needs.

The creation of protocols for the early detection of COVID-19 in the elderly in

LSIE, allows the organization of practices in these health services, in order to prevent the spread of SARS-CoV-2, adopting traditional measures to control and prevent the disease, performing the RT-PCR test on the elderly and employees of the institution, as well as weekly screening with an immunological test.

In this way, the research highlights the relevance of using tests for the early detection of SARS-CoV-2 in LSIEs, as a strategy to prevent and control the spread, avoiding further contamination and deaths.

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