Multidimensional geriatric assessment in primary care: a scoping review

Fernanda Matoso Siqueira[1]
Cássia Evangelista Delgado[2]
Fábio da Costa Carbogim[1,3]
Edna Aparecida Barbosa de Castro[1]
Regina Consolação dos Santos[4]
Ricardo Bezerra Cavalcante[1,4]

Abstract

Objective: to map the publications on multidimensional geriatric assessment in the primary care setting. *Method:* A scoping review using the Joanna Briggs Institute methodology was carried out on the databases Web of Science, Scopus, Medical Literature Analysis and Retrieval System Online (MEDLINE) and Literatura Latino Americana e do Caribe em Ciencias da Saude (LILACS). The studies addressed the population of older people aged ≥60 years, the concept of multidimensional assessment and the primary care setting. *Results:* a total sample of 19 publications was included for qualitative analysis. The studies selected were of different designs (predominantly cross-sectional) and most were in English. The evaluation comprised three dimensions; instruments developed applicable to primary care; two types of information technologies used to support the evaluation; and the relevant findings about the practice. *Conclusion:* this review identified tools that were based on several existing instruments. Strategies should be tailored for assessing older individuals in a quick feasible manner. Specific domains were commonly present in the instruments, considered important for providing a comprehensive assessment tailored for the older population.

Keywords: Aged. Geriatric Assessment. Primary Care.

[1] Universidade Federal de Juiz de Fora, Programa de Pós-Graduação em Enfermagem. Juiz de Fora, MG, Brasil.

[2] Universidade Federal de Juiz de Fora, Programa de Residência Multiprofissional em Saúde do Adulto com Ênfase em Doenças Crônico Degenerativas, Hospital Universitário HU/UFJF. Juiz de Fora, MG, Brasil.

[3] Universidade Federal de Juiz de Fora, Programa de Pós-Graduação em Saúde Coletiva. Juiz de Fora, MG, Brasil.

[4] Universidade Federal de Juiz de Fora, Programa de Pós-Graduação em Psicologia. Juiz de Fora, MG, Brasil.

Funding: "Desenvolvimento e validação de Sistema Inteligente para Avaliação Multidimensional de Pessoas Idosas". Grant Nº: APQ-00707-20. Scholarship from Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG).

The authors declare no conflict in the conception of this work.

Correspondence
Ricardo Bezerra Cavalcante
ricardo.cavalcante@ufjf.br

Received: March 02, 2023
Approved: June 16, 2023

http://dx.doi.org/10.1590/1981-22562023026.230051en

INTRODUCTION

Aging should be a propitious process for developing functional ability and promoting independence and quality of life,[1] rather than one associated with disability and limitations as inevitable consequences[2].Health systems should be geared up to cater for the specific needs of older people through organizational actions and initiatives such as the National Health Policy for Older People (PNSPI)[2] and the decade of healthy aging (2021-2030)[1].

In the context of the growing demands of an aging society and consistent with the PNSPI incentive to rigorous instruments for assessing older people[2], the Multidimensional or Comprehensive Geriatric Assessment (CGA) constitutes a structured multi-dimensional tool that can detect disabilities or abilities from a clinical, psychosocial and functional perspective, allowing a Singular Therapeutic Project to be devised centered principally on recovering and/or maintaining functional ability[3,4].

Although the CGA is considered the gold standard for geriatric assessment[3,4], its effectiveness in the primary care setting remains unclear. Numerous geriatric comprehensive care models have been assessed in recent years, yet convincing evidence of effective integrated care strategies for this population group is lacking[5]. Hence, there is a need to map the available scientific publications in the national and international literature on CGA within the primary care setting. Such an investigation should explore: the dimensions involved; the tools developed for CGA applicable to primary care for each individual dimension and all of them as a whole; the information technology being used to support the CGA; the recommendations on the practice of CGA in primary care; and lastly, the knowledge gaps in the context outlined.

A preliminary search by the authors on the databases MEDLINE, Cochrane Database of Systematic Reviews, Open Science Framework (OSF), JBI Evidence Synthesis, and on the International prospective register of systematic reviews (PROSPERO) platform revealed no existing reviews addressing the following guiding study question: "What scientific evidence is available in the literature on comprehensive geriatric assessment in the primary care setting?" A previous systematic review by Garrard et al., 2020 was found reporting the best strategy for clinical practice, without conflicting with the aim of the present study. Thus, the objective of the present scoping review was to map the publications on comprehensive geriatric assessment in the primary care setting.

METHOD

A scoping review was conducted using the Joanna Briggs Institute (JBI) method[6]. This type of review provides a broader view of the available evidence on a given area, clarifying concepts and, therefore, suitable for the objective of the present study, which a systematic review would be unable to achieve given its main focus of developing practices and policies based on best evidence[7]. An *a priori* protocol was developed, providing a plan for the scoping review and predefining objectives and methods, while allowing for transparency of the process, as outlined in the JBI Manual for Evidence Synthesis"[7]. The resultant protocol was registered with the Open Science Framework platform at https://osf.io/btm7e, DOI: 10.17605/OSF.IO/BTM7E.

The review encompassed the 9 steps defined by the JBI: 1- definition and alignment of objectives and research questions; 2- development and alignment of inclusion criteria with the objectives and questions; 3- description of approach for search of evidence, selection, data extraction and presentation of evidence; 4- search for evidence; 5-selection of evidence; 6-extraction of evidence; 7- analyses of evidence; 8-presentation of results; and 9- summary of evidence with respect to the review objective, conclusion and potential implications of the findings[6].

The studies included were selected based on the PCC (Population, Concept and Context) strategy, whereby the Population was older people (age ≥ 60 years), the Concept was "multidimensional/comprehensive assessment" and the Context "primary care". Studies not meeting the selection criteria, not containing data related to the scenario

investigated or that failed to address the concept and context were excluded.

The population of older people was defined as individuals aged 60 years or older[8], of both genders, and of all races, colors and ethnicities.

The concept of Multidimensional/Comprehensive Assessment was defined as the diagnostic process used to assess the health of older individuals, providing a broad holistic understanding of the person´s health by evaluating multiple dimensions to structure and organize care[3]. This confers a favorable prognosis for the aging process, derived based on the actual needs of the individual and those areas most impaired which may impact functioning[4].

Studies on CGA conducted in primary care, defined as the first level of care in coordinated health systems, the center of liaison between all points of care and where the CGA must initially take place[4].

The search for publications was carried out by the lead author on the databases Web of Science; Scopus; Medical Literature Analysis and Retrieval System Online (MEDLINE) and Literatura Latino-Americana de Informação Bibliografia (LILACS) via the Biblioteca Virtual em Saúde (BVS) – Virtual Health Library. The full search strategy in English, as applied to one of the databases, is shown in Chart 1. The searches were adapted for Spanish and Portuguese and for the other databases used.

Chart 1. Search strategy for databases. Juiz de Fora, Minas Gerais, Brazil, 2022.

Database	Search
Web of Science (English)	(multidimensional assessment) AND (aged) AND (primary health care); (multidimensional assessment) AND (aged) AND (primary care); (multidimensional assessment) AND (elderly) AND (primary health care); (multidimensional assessment) AND (elderly) AND (primary care); (multidimensional assessment) AND (older) AND (primary health care); (multidimensional assessment) AND (older) AND (primary care); (multidimensional assessment) AND ((geriatric)) OR ((gerontology)) AND (primary health care); (multidimensional evaluate) AND ((geriatric)) OR ((gerontology)) AND (primary health care); (multidimensional evaluate) AND (aged) AND (primary health care); (multidimensional evaluate) AND (aged) AND (primary care); (multidimensional evaluate) AND (elderly) AND (primary health care); (multidimensional evaluate) AND (elderly) AND (primary care); (multidimensional evaluate) AND (older) AND (primary health care); (multidimensional evaluate) AND (older) AND (primary care).

Eligible study designs included experimental and quasi-experimental (randomized and non-randomized controlled trials, before-and-after type studies and interrupted time series studies); analytical observational studies (prospective and retrospective cohort studies, case-control and cross-sectional analytical studies); descriptive observational studies (case series, individual case reports and descriptive cross-sectional studies); qualitative studies; documents from national and international governmental bodies and reviews which met the objectives of the present study. Case reports, research projects and protocols, educational materials, academic work (end-of-course reports, dissertations and theses), course materials and presentations at events were not considered in the search. No restrictions regarding language or publication date were imposed. However, for the purposes of data analysis planning, the study selection process took place between 9th August and 25th October 2021.

In this stage, many studies investigating the development/validation/transcultural adaptation of individual scales used in CGA for a specific domain were found. These studies were not selected because they did not address the applicability of the instruments in the practice of CGA within primary care and, hence, made no contribution to the objective of the review. Research protocols and projects were also not included because they did not report consolidated information on the topic of interest.

The references were pooled and transferred to an electronic spreadsheet, where duplicated titles were removed. Titles and abstracts were read in order to select studies that met the inclusion criteria of the study. The selected articles were then read in full by 2 independent reviewers with any differences between them settled by consensus. Using the resultant list of articles for review, the authors extracted the parameters of interest from the publications: study title, journal name, country, study design, publication year, and quality of evidence, categorized as per the recommendations of the Agency for Healthcare Research and Quality (AHRQ)[9].

The process of article selection for inclusion in the review is depicted using the PRISMA-ScR flow diagram, extension for Scoping Review[7] (Figure 1).

RESULTS

The search of the databases led to the retrieval of 11,096 potentially eligible studies (BVS = 10,945; PROSPERO = 4; Scopus = 91; and Web of Science = 56) (Figure 1). The LILACS, BDENF and MEDLINE databases were accessed via the Biblioteca Virtual em Saúde (Virtual Health Library). In total, 9,077 duplicate studies were removed. Of the 2,019 studies eligible for screening of titles and abstracts, 30 were selected for reading in full. Of this group of articles, 11 were subsequently excluded: 1 for being an experience report, 3 due to inability to access the full text, 3 for being a research project or protocol, 1 because the article was an experience report and 3 for being educational materials. The final sample comprised 17 academic articles and 2 documents produced by the Brazilian government.

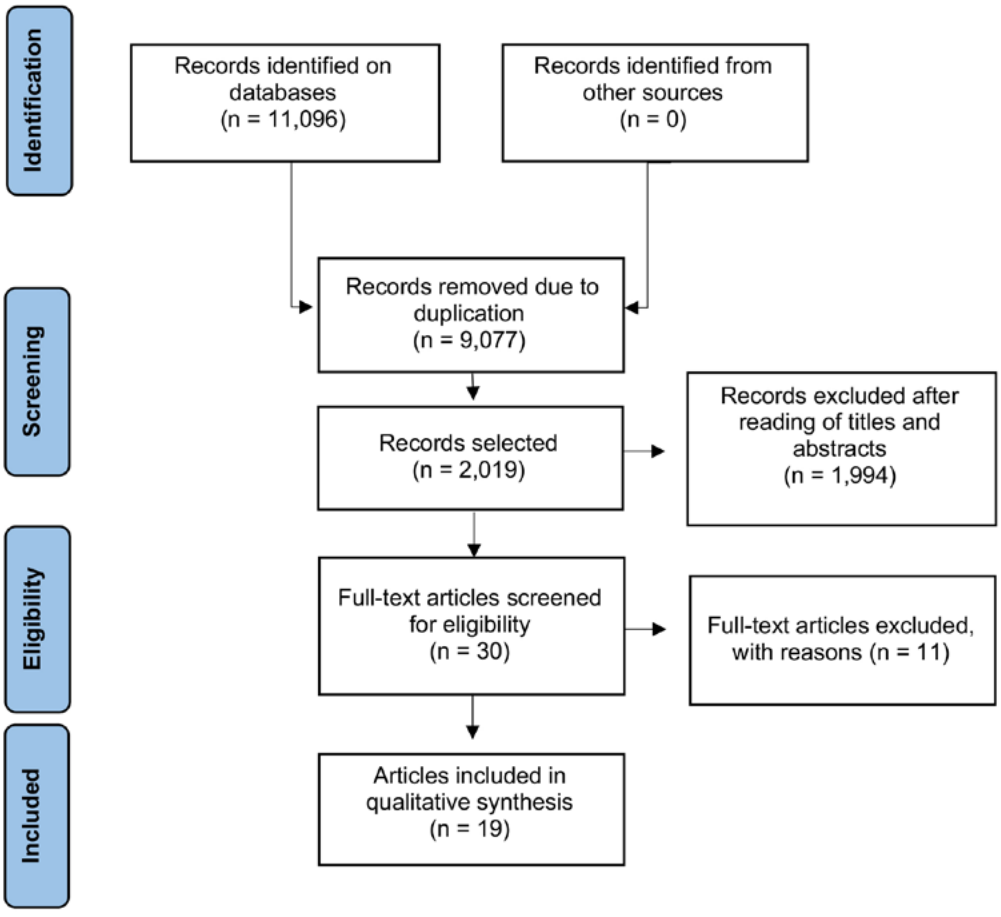

Figure 1. PRISMA-ScR flow diagram of process of article selection for review. Juiz de Fora, Minas Gerais state, Brazil, 2022.

Source: Created by authors (2022).

For language of publication, most of the studies reviewed were in English (n=13), 3 in Spanish and 3 in Portuguese. Regarding methodology design, most studies were cross-sectional (n = 7), followed by reviews (n=4), Brazilian government documents (n=2), longitudinal studies (n=1), case reports (n=1) and a continued medical education article (n=1). The studies reviewed were published between 1991 and 2021. The characteristics of the studies reviewed are outlined in Table 1.

Table 1. Studies reviewed according to title, journal, country, design and year. Juiz de Fora, Minas Gerais state, Brazil, 2022.

Identifier*	Study title	Journal name	Country	Study design	Year	Quality of evidence**
A1 [10]	Comprehensive geriatric assessment in primary care: a systematic review	Aging Clinical and Experimental Research	United Kingdom	Systematic review	2020	Level 1
A2 [11]	Aplicación de un protocolo de valoración geriátrica en atención primaria: comparación con los datos de la historia clínica	Atención Primaria	Spain	Cross-sectional study	2000	Level 4
A3 [12]	Avaliação Multidimensional do Idoso	State Secretariat for Health of Paraná	Brazil	Brazilian government document	2018	Level 5
A4 [13]	Rastreamento de problemas de idosos na atenção primária e proposta de roteiro de triagem com uma abordagem multidimensional	Cadernos de Saúde Pública	Brazil	Cross-sectional study	2016	Level 4
A5 [14]	Multidimensional Geriatric Assessment with MAGIC Questionnaire and Quality of Life in Elderly Primary Care Patients	International Journal of Environmental Research and Public Health	Spain	Cross-sectional study	2020	Level 4
A6 [15]	AMPI-AB validity and reliability: a multidimensional tool in resource-limited primary care settings	BMC Geriatrics	Brazil	Longitudinal study	2020	Level 4
A7 [16]	Avaliação Multidimensional da Pessoa Idosa na Atenção Básica AMPI-AB	Municipal Secretariat for Health of São Paulo	Brazil	Brazilian Government Document	2021	Level 5
A8 [17]	Criterios de valoración geriátrica integral en adultos mayores con dependencia moderada y severa en Centros de Atención Primaria en Chile	Revista Médica de Chile	Chile	Review	2015	Level 5
A9 [18]	Evaluación de la efectividad de un instrumento para identificar problemas sociales y sanitarios en la población anciana adscrita a un centro de atención primaria	Atención Primaria	Spain	Cross-sectional study	2005	Level 4

to be continued

Continuation of Table 1

Identifier*	Study title	Journal name	Country	Study design	Year	Quality of evidence**
A10 [19]	Geriatric Assessment for Primary Care Providers	Primary Care	United States	Review	2017	Level 5
A11 [20]	A Trial Integrating Different Methods to Assess Psychosocial Problems in Primary Care	Psychotherapy and Psychosomatics	Italy	Cross-sectional study	2019	Level 4
A12 [21]	Comprehensive geriatric assessment: comparison of elderly hemodialysis patients and primary care patients	Renal Failure	Bosnia and Herzegovina and Serbia	Cross-sectional study	2015	Level 3
A13 [22]	Population-based multidimensional assessment of older people in UK general practice: a cluster-randomised factorial trial	Lancet	United Kingdom	Clinical trial	2004	Level 2
A14 [23]	Design and pilot results of a single blind randomized controlled trial of systematic demand-led home visits by nurses to frail elderly persons in primary care	BMC Geriatrics	Holland	Clinical trial	2005	Level 2
A15 [24]	Approach to frailty in the elderly in primary care and the community	Singapore Medical Journal	Singapore	Continued Medical Education Article	2018	Level 6
A16 [25]	Development of the Brief Geriatric Assessment for the General Practitioner	The Journal of Nutrition, Health & Aging	Taiwan	Cross-sectional study	2020	Level 4
A17[26]	The Importance of Taking a Patient-Centered, Community-Based Approach to Preventing and Managing Frailty: A Public Health Perspective	Frontiers in Public Health	Italy/Ireland	Review article	2020	Level 5
A18[27]	Functional Assessment: A Holistic Approach to Rehabilitation of the Geriatric Client	Rehabilitation Nursing Journal	United States	Case report	1991	Level 5
A19[28]	Efficacy of a nurse-led multidimensional preventive programme for older people at risk of functional decline. A randomized controlled trial.	BMJ Open	Canada	Clinical trial	2001	Level 2

Source: study authors (2022).

*A: article, followed by sequential number.

** According to Agency for Healthcare Research and Quality (AHRQ) rating.

The results of the thematic analysis of the publications are given in Table 2 and were categorized under dimensions of the CGA, measuring instruments, tools, scales or tests used for each of the dimensions, ways the CGA can be applied in primary care, and relevant findings on the practice of CGA.

Table 2. Thematic categories extracted from publications. Juiz de Fora, Minas Gerais state, Brazil, 2022.

Dimensions of CGA	1. Clinical Dimension 2. Psychosocial Dimension 3. Functional Dimension (A3, A5, A7, A10)
Instruments developed for CGA applicable to primary care by dimension	**Clinical Dimension** Anamnesis – questionnaire on: - Hearing deficits (A2, A4, A5, A7, A12); - Vision deficits (A2, A5, A7, A12, A19); - Urinary or fecal incontinence (A3, A5, A7, A10); - Sleep (A3, A10); - Medications/polypharmacy (A3, A7, A10, A12, A19); - Tobacco use (A3, A10, A16); - Alcohol use (A3, A10, A16); - Sexuality (A3, A10); - Physical activity (A3, A10, A16); - Vehicle steering (A3); - Immunization (A3, A5); - Use of orthoses or prostheses (A3); - Domestic violence (A3, A10); - Self-rated health (A4, A7); - History of Falls (A4, A5, A7, A12); - Age (A7, A11); - Chronic conditions/comorbidities (A7, A12, A16); - History of hospitalization (A7); - Oral health assessment (A3, A7); - Family relationships (A10, A12); - Education (A12); - Living arrangements (A12, A16); - Income (A12, A16); - Gender (A12); - Pain (A12); - Constipation (A12); - Marital status (A16); - Quality of life – Short-Form Health Survey (SF-12) (A11). **Psychosocial Dimension** **MOOD** - Yesavage Geriatric Depression Scale (A2, A3, A10, A16, A19); - Patient Health Questionnaire-9 (PHQ-9) (A10); - Cornell Scale (A10); - Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (A11); - Diagnostic Criteria for Psychosomatic Research (DCPR) –(A11); - Psychosocial Index (PSI) (A11); - Patient Health Questionnaire-2 (PHQ-2) (A4, A10); - Illness Attitude Scales (IAS) (A11).

to be continued

Continuation of Table 2

Instruments developed for CGA applicable to primary care by dimension	**COGNITION** - Mini-Mental State Exam (MMSE) (A2, A3); - Short Portable Mental Status Questionnaire (SPMSQ) (A2, A16); - Brief Mini-mental (A8); - Mini-Cog (A10, A11); - Point Cognitive Screener (10-cs) (A7); - Montreal Cognitive Assessment (MoCA) (A10); - Clock Drawing Test (A3, A5); - Verbal Fluency (A3); - Figure naming (A3); - Word List from CERAD (A3); - Saint Louis University Mental Status (SLUMS) test (A10). **SOCIAL** - Social support scale (Self-complete Scale by California Department of Mental Health) (A2); - Social support (A7); - Social data - social vulnerability questionnaire (A7); - Zarit Caregiver burden scale (A8); - Assessment of caregiver (A3); - Medical Outcomes Study (MOS) (A4); **<u>Functional Dimension</u>** **ACTIVITIES** - Instrumental Activities of Daily Living – IADL (Lawton-Brody scale) (A2, A3, A4, A6, A7, A10, A12, A16, A18); - Activities of daily living - ADL (Katz Index) (A3, A4, A5, A6, A7, A10, A12, A18); - Pfeffer´s Functional Activities Questionnaire (FAQ) (A3); - *Barthel Index(A8, A18);* - Clinical Frailty Scale (CFS) (A15); **MOBILITY** - Timed Up-and-Go Test (A3, A12); - Romberg Test (A3); - Nudge Test (A3); - Single Leg Stance Test (A3); - 6-minute Walk Test (A3); - Get Up-and-Go Test (A2, A3, A10); - 400 m Walk (A7); - Grasp, handgrip and pinch (A3, A4, A7, A16); - 6-meter walk test (6MWT) (A16); - Tinetti test (A19); - Daily micturition test (A3); **COMMUNICATION** - Snellen test (A3, A7, A10, A16); - Whisper Test (A3, A7, A10); - Finger friction (A10); - Newspaper or magazine reading at 25 cm (A3); - Assessment of voice, speech and swallowing (A3); - Hearing Handicap Inventory for the Elderly (A19);

to be continued

Continuation of Table 2

Instruments developed for CGA applicable to primary care by dimension	**NUTRITION** - Mini-assessment of Nutrition (MAN) (A3); - Body Mass Index (BMI) (A4, A10, A12, A16); - Nutritional Health Checklist (A12); **FALLS** - Environmental fall risk assessment (A3); **SLEEP** - Sleep diary (A10).
Multidimensional instruments developed for CGA applicable to primary care	- Vulnerable Elders Survey (VES-13) (A3); - Clinical-Functional Vulnerability Index-20 (IVCF-20) (A3); - Frailty Visual-Analogue Scale (A3); - "Avaliação Multidimensional do Idoso Hierarquizada"-*Hierarchical Multidimensional Geriatric Assessment* (A3); - Moore & Siu (A4); - Avaliação Rápida Multidimensional da Pessoa Idosa (ARMI) *Rapid Multidimensional Geriatric Assessment* (A4); - RAPIDO (Rastreamento de Problemas de Idosos) *Geriatric Problem Screening* (A4); - MAGIC Questionnaire (A5, A16); - EQ-5D-5L Questionnaire (A5); - Avaliação Multidimensional de Pessoas Idosas (AMPI-AB) – *Multidimensional Assessment of Older People* (A6, A7); - Examen de medicina preventiva del adulto mayor (EMPAM) – (A8); - Self-administered Questionnaire (A9); - Self-assessment Questionnaires (A10); - FRAIL (frailty screening) (A15); - Brief Geriatric Assessment (BGA) (A16); - The Functional Autonomy Measurement System (*SMAF*) (A19).
Information Technology used to implement CGA	- Postal-based screening (A9, A19, A14); - Telephone-based approaches (A6, A10).
Relevant findings on practice of CGA in primary care	- Not all older people should undergo comprehensive evaluation using CGA. The assessment should be given to those at higher risk of disability (A3, A4); - Rapid screening and assessment instruments and strategies should be used (A13, A15); tests should be simple and suitable for use in routine practice (A5) - There are difficulties incorporating CGA into the routine of primary care professionals (A10, A12, A16); - Tools and scales can support, but not replace, clinical judgment (A18) - For cognitively impaired older people attending consultations alone, family members or caregivers can take part in some of the interview via telephone conference call (A10).

Source: study authors (2022).

DISCUSSION

This scoping review identified 19 studies addressing CGA in primary care settings. The studies retrieved were heterogeneous, as evidenced by the range of different designs. With regard to quality of evidence, categorized according the AHRQ9 into 6 levels, where 1 indicates high quality and 6 low quality level, one study (systematic review) had a maximum level of evidence, while 3 (clinical trials) had high quality of evidence.

Some studies were observational in nature, entailing application of 1 or more existing instruments to a local population in order to analyze efficacy[11,18,20,23,28], content[13], perform adaptation/validation[14,15], determine the cause-effect relationship[21], and promote development of an instrument[25]. Other studies involved collection and analysis of secondary data, reporting information from literature reviews on the topic and/or employing a technical appoach[10,12,16,17,19,24,26].

The dividing of CGA into 3 dimensions (clinical, psychological and functional) is a framework adopted by national and international bodies[3,4] and seen in several of the studies reviewed[12,14,16,19]. A number of domains comprising each dimension were extensively cited in the studies, namely: screening for hearing and vision deficits, assessment of presence of urinary or fecal incontinence, use of medications or presence of polypharmacy, history of falls, geriatric depression scale, ADL and IADL scales, BMI, grasp, handgrip and pinch tests, considered important components of multidimensional assessment tailored for the older population.

A systematic review study described the CGA models implemented in primary care, the results reported, as well as the acceptability of the intervention compared to the existing care model. The review concluded, based on the 4 articles analyzed, that the potential benefits of implementing CGA included cost effectiveness, greater adherence to medications and lower rates of hospital admission[10]. Another aspect was that CGA has a greater ability to detect geriatric problems compared to other methods of assessment, suggesting its potential use for consultations involving the older population within primary care[11,21].

National and international societies recommend the use of instruments which take into account the multidimensional nature of older people[13]. However, there are reports of difficulties incorporating CGA into routine practice of professionals in primary care[21,25], with issues such as poor cost-benefit, long application times, a lack of qualified Geriatrics and Gerontology specialists, and high service demand at this point of care. Thus, strategies have been adopted to cater for the health demands of older people across multiple dimensions[12,13], such as the use of rapid screening and assessment instruments and strategies[22,24].

In Brazil, studies have been conducted to propose effective models for performing CGA within primary health. One study[13] developed a screening script called RAPIDO - Rastreamento de Problemas de Idosos (Screening of Geriatric Problems), providing an objective assessment based on validated instruments already in use containing a total of 12 elements. The RAPIDO takes, on average, 16 minutes for any trained team member to apply.

From the international literature, the MAGIC questionnaire was identified. This instrument was developed by clinicians in English and is designed to provide a brief viable assessment for use in primary care practice. One study reported the translation and adaptation of the tool into Spanish[14].

Four studies were found on the deployment of information technology as support for application of CGA and management of data gathered. Of these articles, 3 described the use of postal-based screening to identify more frail older individuals indicated for geriatric assessment. These measures produced positive results, albeit with greater data loss[18] and incomplete responses[23]. In addition, the manual for use of the AMPI-AB primary care CGA instructs professionals to register the data on the information system in place for later export to the Brazilian National Health System Ambulatory Information System (SIASUS) under the registered code[16].

Identifying gaps in the literature, one of the objectives of this scoping review, indicates the needs for futures studies and identifies fertile areas for furthering research on the topic. Most of the studies failed to specify whether information technology or available resources were used to support the

application of CGA in primary care and management of information. The studies centered on assessment instruments, without exploring integration with information systems, and there is a dearth of scientific publications in the literature on the management of care of this population group using comprehensive assessment.

The present study has some limitations, such as the fact that most publications were cross-sectional, involving experiences with CGA over predefined time periods as opposed to long-term follow-up.

CONCLUSION

Mapping the scientific output on the topic revealed that the available studies were heterogeneous, predominantly observational, and investigated the local application of multidimensional instruments to the older population. This review found tools which were devised based on several existing instruments. Strategies to cater for older people in a rapid feasible manner are needed, given that incorporation of CGA into routine practice within primary care proved difficult. Specific domains were commonly present in the instruments, considered important for providing a comprehensive assessment tailored for the older population.

Further studies elucidating CGA in primary care should be conducted to allow programs to be executed in a more rapid effective manner and data managed in an integrated fashion by systems for monitoring the health of older people from a given region, thereby facilitating the devising of strategies to meet emerging demands. To this end, information technology can be useful in supporting the implementation of CGA.

AUTHORSHIP

- Fernanda Matoso Siqueira – conception, design, data collection, analysis and interpretation, writing, review and approval of manuscript version for publication.
- Cássia Evangelista Delgado – data collection, analysis and interpretation, writing, review and approval of manuscript version for publication.
- Fábio da Costa Carbogim – data analysis and interpretation, writing, review and approval of manuscript version for publication.
- Edna Aparecida Barbosa de Castro – data analysis and interpretation, writing, review and approval of manuscript version for publication.
- Regina Consolação dos Santos – data analysis and interpretation, writing, review and approval of manuscript version for publication.
- Ricardo Bezerra Cavalcante – conception, design, data analysis and interpretation, writing, review and approval of manuscript version for publication.

Edited by: Marquiony Marques dos Santos

REFERENCES

1. Organização Pan-Americana de Saúde [homepage na internet]. Envelhecimento saudável [cited 2023 fev 27]. Available from: https://www.paho.org/pt/envelhecimento-saudavel.
2. Brasil. Portaria nº 2.528 de 19 de outubro de 2006. Aprova a Política Nacional de Saúde da Pessoa Idosa. Diário Oficial da União 20 Oct 2006; 142 seção 1.
3. Moraes EN. Atenção à saúde do idoso: aspectos conceituais [Internet]. Brasília: Organização Pan-Americana de Saúde; 2012 [cited 2021 sep. 20]. Avaliable from: http://apsredes.org/pdf/Saude-do-Idoso-WEB1.pdf.
4. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde Departamento de Ações Programáticas e Estratégicas. Orientações técnicas para a implementação de linha de cuidado para atenção integral à saúde da pessoa idosa no sistema único de saúde – SUS [Internet]. Brasília: Ministério da Saúde; 2018 [cited 2021 sep 20]. Avaliable from: https://bvsms.saude.gov.br/bvs/publicacoes/linha_cuidado_atencao_pessoa_idosa.pdf.
5. Nord M, Lyth J, Marcusson J, Alwin J. Cost-Efectiveness of Compreensive Geriatric Assessment Adapted to Primary Care. J Am Med Dir Assoc [Internet], 2022 [cited on 2022 aug 04]. Avaliable from: https://doi.org/10.1016/j.jamda.2022.04.007.

6. Longaray AA, Castelli TM. Avaliação do desempenho do uso da tecnologia da informação na saúde: revisão sistemática da literatura sobre o tema. Ciênc. saúde coletiva [Internet], 2020 [cited 2021 apr 28]; 25 (11): 4327-38. Avaliable from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232020001104327&lng=pt&nrm=iso.

7. Peters, MDJ et al. Chapter 11: Scoping reviews. In: Aromataris E, Munn Z (Editors). JBI Manual for Evidence Synthesis [Internet]. 2020 [cited 2021 Sep 22]. Avaliable from: https://synthesismanual.jbi.global.

8. Brasil. Lei no 10.741, de 1º de outubro de 2003. Dispõe sobre o Estatuto do idoso e dá outras providências [Internet]. Brasília; 2003 [cited 2021 Sep 20]. Avaliable from: http://www.planalto.gov.br/ccivil_03/leis/2003/l10.741compilado.htm.

9. Agency for Healthcare Research and Quality (AHRQ). Quality Improvement and monitoring at your fingertips. Rockville: Agency for Healthcare Research and Quality; 2016.

10. Garrard JW, Cox NJ, Dodds RM, Roberts HC, Sayer AA. Comprehensive geriatric assessment in primary care: a systematic review. Aging Clin Exp Res [Internet]. 2020 [cited 2022 apr 05]; 32(2):197-205. Avaliable from: https://pubmed.ncbi.nlm.nih.gov/30968287/.

11. Pavón IL, Bartrolí MR, Pérez BI, Gil LG, Molinet PR, Parrón MF. Aplicación de un protocolo de valoración geriátrica en atención primaria: comparación con los datos de la historia clínica. Aten Primaria [Internet]. 2000 [cited 2022 apr 04];25(9):630-633. Avaliable from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7681494/.

12. Moraes EN, Pereira AMVB, Azevedo RS, Moraes FL. Avaliação multidimensional do idoso [Internet]. Curitiba: Secretaria de Estado da Saúde do Paraná; 2018 [cited on 2022 apr 05]. Avaliable from: https://www.saude.pr.gov.br/sites/default/arquivos_restritos/files/documento/2020-04/avaliacaomultiddoidoso_2018_atualiz.pdf.

13. Lino VTS, Portela MC, Camacho LAB, Rodrigues NCP, Andrade MKN, O'Dwyer G. Rastreamento de problemas de idosos na atenção primária e proposta de roteiro de triagem com uma abordagem multidimensional. Cadernos de Saúde Pública [Internet]. 2016 [cited 2022 apr 05];32(7):1-12. Avaliable from: https://www.scielo.br/j/csp/a/RbMjMrPjTwRzHjC984PCYxj/abstract/?lang=pt.

14. Dios-Quiroga F, Soliño-Lourindo S, Pallas-Queijo C, González-Formoso C, Constenla-Castro A, Conde-Freire S, Clavería A. Multidimensional geriatric assessment with MAGIC questionnaire and quality of life in elderly primary care patients. Int J Environ Res Public Health [Internet]. 2020 [cited 2022 Apr 05];17(19):7089. Avaliable from: https://pubmed.ncbi.nlm.nih.gov/32998200/.

15. Saraiva MD, Venys AL, Abdalla FLP, Fernandes MS, Pisoli PH, Sousa DMRV et al. AMPI-AB validity and reliability: a multidimensional tool in resource-limited primary care settings. BMC Geriatr [Internet]. 2020 [cited 2022 apr 05]; 20 (124). Avaliable from: https://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-020-01508-9.

16. Prefeitura da cidade de São Paulo. Manual avaliação multidimensional da pessoa idosa na atenção básica - AMPI-AB. São Paulo: Secretaria Municipal de Saúde [Internet]. 2021 [cited 2021 apr 05]. Avaliable from: https://www.prefeitura.sp.gov.br/cidade/secretarias/upload/saude/MANUAL_AMPI_AB_ATUALIZAO_2021.pdf.

17. Munoz Silva CA, Rojas Orellana PA, Marzuca-Nassr GN. Criterios de valoración geriátrica integral en adultos mayores con dependencia moderada y severa en Centros de Atención Primaria en Chile. Rev. méd. Chile [Internet]. 2015 [cited 2022 apr 05];143(5): 612-618. Avaliable from: http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0034-98872015000500009&lng=es&nrm=iso.

18. Brotons C, Monteserín R, Martínez M, Sellarès J, Baulies A, Fornasini M. Evaluación de la efectividad de un instrumento para identificar problemas sociales y sanitarios en la población anciana adscrita a un centro de atención primaria. Aten Primaria [Internet]. 2005 [cited 2022 apr 05];36(6):317-23. Avaliable from: https://www.elsevier.es/pt-revista-atencion-primaria-27-articulo-evaluacion-efectividad-un-instrumento-identificar-13079866.

19. Tran, HPT, Leonard, SD. Geriatric assessment for primary care providers. Prim Care [Internet]. 2017 [cited 2022 apr 05];44(3):399-411. Avaliable from: https://pubmed.ncbi.nlm.nih.gov/28797368/.

20. Piolanti, A, Gostoli, S, Gervasi, J, Sonino, N, & Guidi, J. A Trial Integrating Different Methods to Assess Psychosocial Problems in Primary Care. Psychotherapy and Psychosomatics [Internet]. 2019 [cited 2022 Sep 06]; 88(1): 30–36. Avaliable from: https://doi.org/10.1159/000496477.

21. Račić, M, Petković, N, Bogićević, K, Marić, I, Matović, J, Pejović, V, et al. Comprehensive geriatric assessment: comparison of elderly hemodialysis patients and primary care patients. Renal failure [Internet]. 2015 [cited 2022 Sep 06]; 37(7): 1126–1131. Avaliable from: https://doi.org/10.3109/088602 2X.2015.1057459.

22. Fletcher AE, Price GM, Ng ES, Stirling SL, Bulpitt CJ, Breeze E, et al. Population-based multidimensional assessment of older people in UK general practice: a cluster-randomised factorial trial. Lancet (London, England) [Internet]. 2004 [cited 2022 Sep 06];364(9446): 1667–1677. Avaliable from: https://doi.org/10.1016/S0140-6736(04)17353-4.

23. van Hout HP, Nijpels G, van Marwijk, HW, Jansen, AP, Van't Veer, PJ, Tybout W, Stalman, WA. Design and pilot results of a single blind randomized controlled trial of systematic demand-led home visits by nurses to frail elderly persons in primary care. BMC geriatrics [Internet]. 2005 [cited 2022 Sep 06];5, 11. Avaliable from: https://doi.org/10.1186/1471-2318-5-11.

24. Chen, CY, Gan P, How CH. Approach to frailty in the elderly in primary care and the community. Singapore medical jornal [Internet]. 2018 [cited 2022 Sep 06]; 59(5): 240–245. Avaliable from: https://doi.org/10.11622/smedj.2018052.

25. Tai CJ, Yang YH, Huang CY, Pan SC, Hsiao YH, Tseng TG, Lee MC. Development of the Brief Geriatric Assessment for the General Practitioner. The journal of nutrition, health & aging [Internet]. 2021 [cited 2022 Sep 06]; 25(1): 134–140. Avaliable from: https://doi.org/10.1007/s12603-020-1456-7.

26. Adja K, Lenzi J, Sezgin D, O'Caoimh R, Morini M, Damiani G, Buja A, Fantini MP. The Importance of Taking a Patient-Centered, Community-Based Approach to Preventing and Managing Frailty: A Public Health Perspective. Frontiers in public health [Internet]. 2020 [cited 2022 Sep 06]; 8, 599170. Avaliable from: https://doi.org/10.3389/fpubh.2020.599170.

27. Calvani DL, Douris KR. Functional assessment: a holistic approach to rehabilitation of the geriatric client. Rehabilitation nursing : the official journal of the Association of Rehabilitation Nurses [Internet]. 1991 [cited 2022 Sep 06]; 16(6): 330–335. Avaliable from: https://doi.org/10.1002/j.2048-7940.1991.tb01243.x.

28. Hébert R, Robichaud L, Roy PM, Bravo G, Voyer L. Efficacy of a nurse-led multidimensional preventive programme for older people at risk of functional decline. A randomized controlled trial. Age and ageing [Internet]. 2001 [cited 2022 Sep 06]; 30(2): 147–153. Avaliable from: https://doi.org/10.1093/ageing/30.2.147.