Domains analyzed in the assessment of resilience in individuals with chronic cardiovascular diseases: a scoping review

Domínios analisados na avaliação da resiliência em indivíduos com doenças cardiovasculares crônicas: revisão de escopo

Dominios analizados en la evaluación de la resiliencia en individuos con enfermedades cardiovasculares crónicas: revisión de escopo

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ABSTRACT

Objective: To map the scientific evidence on the instruments used to assess resilience in adult individuals with chronic cardiovascular disease, and explore their domains. **Method**: A scoping review to meet the question: What are the instruments or questionnaires used to assess resilience in adult individuals with chronic cardiovascular disease? The search was conducted in LILACS, Scopus, Web of Science, Pubmed, CINAHL databases and the grey literature. Studies were uploaded to Mendeley and the selection was performed by two independent reviewers (Kappa=0.86). **Results:** A total of 164 studies were identified and 14 were included; six instruments were used to assess resilience. The resilience assessment occurred in individuals with ischemic heart disease, myocardial infarction, stroke, and heart failure. **Conclusion:** The instruments were not adapted for use in individuals with chronic cardiovascular diseases. The development of specific instruments that include individual domains and consider the social context of these individuals is necessary.
Descriptors: Psychological resilience; Surveys and Questionnaires; Cardiovascular Diseases.

RESUMO

Objetivo: Mapear as evidências científicas sobre os instrumentos utilizados na avaliação da resiliência em indivíduos adultos com doenças cardiovasculares crônicas e explorar seus domínios. **Método**: Revisão de escopo para responder à questão: Quais os instrumentos ou questionários utilizados para avaliação da resiliência em indivíduos adultos com doenças cardiovasculares crônicas? Foi realizada pesquisa nas bases de dados LILACS, Scopus, *Web of Science*, Pubmed, CINAHL e literatura cinzenta. Os estudos foram adicionados ao gerenciador *Mendeley* e a seleção realizada por dois revisores independentes (Kappa=0.86). **Resultados:** Foram identificados 164 estudos e incluídos 14, sendo utilizados seis instrumentos para avaliação da resiliência. A avaliação da resiliência ocorreu em indivíduos com cardiopatia isquêmica, infarto do miocárdio, acidente vascular cerebral e insuficiência cardíaca. **Conclusão:** Os instrumentos não são adaptados para uso em indivíduos com doenças cardiovasculares crônicas. Faz-se necessária a formulação de instrumentos específicos que contemplem domínios individuais, mas que considerem o contexto social deste indivíduo.
Descritores: Resiliência Psicológica; Inquéritos e Questionários; Doenças Cardio-vasculares.

RESUMEN

Objetivo: Mapear la evidencia científica sobre los instrumentos utilizados para evaluar la resiliencia en adultos con enfermedades cardiovasculares crónicas y explorar sus dominios. **Método**: Revisión de escopo para responder a la pregunta: ¿Que instrumentos o cuestionarios se utilizan para evaluar la resiliencia en personas adultas con enfermedades cardiovasculares crónicas? Se realizó una búsqueda en las bases de datos LILACS, Scopus, *Web of Science*, Pubmed, CINAHL y literatura gris. Los estudios fueron agregados al medidor *Mendeley* y la selección fue realizada por dos revisores independientes (Kappa=0.86). **Resultados:** Se identificaron 164 estudios y se incluyeron 14, utilizando seis instrumentos para evaluar la resiliencia. La evaluación de la resiliencia se llevó a cabo en personas con cardiopatía isquémica, infarto del miocardio, accidente vascular cerebral e insuficiencia cardíaca. **Conclusión:** Los instrumentos no están adaptados para su uso en personas con enfermedades cardiovasculares crónicas. Es necesario formular instrumentos específicos que contemplen dominios individuales, pero que consideren el contexto social de este individuo.
Descriptores: Resiliencia Psicológica; Encuestas y Cuestionarios; Enfermedades Cardiovasculares.

INTRODUCTION

Chronic noncommunicable diseases (NCDs) are the leading cause of death and disability worldwide. They include five major disease groups: cardiovascular, chronic respiratory, cancer, diabetes, mental, and neurological conditions, accounting for 63% worldwide. Chronic noncommunicable diseases represent 72% of the causes of death in Brazil, and cardiovascular diseases are the predominant cause[1].

Chronic health conditions are characterized by their irreversibility, residual disability, degenerative aspects and long duration, generating a crisis that disrupts the life of the patient/family, with restrictive daily activities, use of multiple medications, and uncomfortable symptoms, affecting the physical, emotional, economic, and social spheres[2,3].

Facing the stress of a chronic disease, some people manage to positively overcome the diversity of disorders caused by the disease, and remain adherent to treatment. This behavioral process may be related to resilience[4].

Research that addresses resilience can be classified into two generations: the first aims to identify risk and resiliency factors (1970s); the second is more comprehensive, where the emphasis permeates individual, social, and family factors (1990s). From this perspective, resilience is understood as a process and not as a personality feature[3].

Regarding the understanding of the construct of resilience, British and North American individuals understand it as hardiness on stress, while Latin American researchers have a perception of resilience that is seen either as hardiness on stress, or is associated with coping processes[5]. The Latin American view has contributed significantly with studies on resilience in the last two decades, identifying the social context as a pillar where the possibilities of response to the problems of individuals facing adversities are created and developed[2,6]. This review is based on the Latin American view, as we understand the great influence of the social context on resilient behaviors in patients with chronic cardiovascular diseases (CVD).

Although resilience is a complex construct with many origins and different emphases, there is a consensus around the term: resilience is related to active, dynamic movement in order to break the succession of immobilizing repetitions established by adversities and harms suffered[6]. Resilience is extremely valuable for the establishment of self-care behaviors and the consequent adherence to treatment in patients living with chronic diseases. Resilience can contribute to dealing with chronic diseases with positive health outcomes[2,6].

Considering the relevance of the theme, the scoping review can contribute to the identification and analysis of instruments and domains used to assess resilience in individuals with chronic CVD, as well as to subsidize the identification of gaps on the subject. The lack of specific instruments to measure resilience in individuals with chronic CVD limits the progress of scientific research, as they need to contain specific domains and attributes, clearly elucidating the concepts and attributes that characterize resilience in individuals with chronic CVD.

Therefore, the purpose of this study is to map the scientific evidence on the instruments used to assess resilience in adult individuals with chronic CVD, as well as to explore their domains.

METHOD

This was a scoping review based on the Joanna Briggs Institute (JBI) methodology[7]. The protocol was registered in the Open Science Framework (OSF) with the link https://osf.io/9r5t8. Studies conducted with adult individuals with chronic CVD of any type were included. The inclusion criteria for the studies were: primary studies available freely and in their entirety, published or not, with a quantitative or qualitative approach, in Portuguese, English, and Spanish languages, in individuals aged ≥18 years. The search was not filtered for date of publication. Studies in editorial format, letter to the editor, and duplicates were excluded.

To identify the studies, the search was conducted in the following databases from the online portal of Capes (Coordination for the Improvement of Higher Education Personnel), login through CAFe (Federated Academic Community): LILACS, MEDLINE/PubMed, Web of Science, SCOPUS, and CINAHL. In addition to these databases, a search was conducted in a Bank of Theses and Dissertations and in Google Scholar (gray literature). The search for studies in the databases occurred between the months of January and February of 2021. The Periodicals Portal, of the capes is a virtual library that gathers and makes available to Brazilian educational and research institutions the best of international scientific production login through CAFe (Federated Academic Community) allows access to wider range of publications available from the online portal of Capes.

The PCC (Population (or participants)/Concept/

Context)) strategy was used to formulate the research question: "Which instruments or questionnaires are used to assess resilience in adult individuals with chronic cardiovascular disease?". After combining uncontrolled terms and descriptors, the search was performed with the search strategy: (("*psychological resilience*" OR "*resilience*") AND ("*cardiovascular diseases*") AND ("*surveys and questionnaires*" OR "*assessment*")).

The decision to use the term "*cardiovascular disease*" without relating it to the term "chronic" was because it restricted the results when the search was performed. The pre-selection of studies was performed by two independent doctoral students, with expertise in the care of patients with CVD, and disagreements were resolved by a third reviewer, also a doctoral student. The studies found were exported to Mendeley® software. The pre-selection and selection of studies was conducted in a simple blinded process.

The eligible studies were mapped in a reflective and critical manner. Data were arranged and tabulated in a Microsoft Excel spread sheet. The stages of eligibility, data extraction, critical analysis, discussion, and conclusion were performed from March to June of 2021.

The methodological analysis of the studies was not evaluated, as this step is not required in scoping reviews, which aim to provide a mapping of what evidence has been produced rather than to seek the best available evidence to answer a specific question. However, for data extraction, we used the form recommended by the JBI[7], which was adapted for this study to facilitate the synthesis of information, that includes: authors, year of publication, country of origin, title, objective, sample, methodology (including the resilience measuring instrument used), intervention (if applicable), results, and main conclusions.

RESULTS

A total of 164 studies were found: two in LILACS, 74 in MEDLINE/PubMed, 29 in Web Of Science, 47 in SCOPUS, and seven in CINAHL. A search in theses and dissertations banks and in Google Scholar (gray literature) was performed, and five studies were identified. After reading the titles and abstracts, 17 studies were selected for reading and analysis, and 14 studies were included: 13 scientific articles and one dissertation.

Kappa index was performed between the two evaluators, with agreement of k=0.86 (p <0.0001;

agreement of 93%). The selection of studies followed the recommendations of PRISMA-ScR[7] as shown in Figure 1:

The included studies were published between the years 2015 and 2020 in different countries, including eight (57%) cross-sectional studies. The countries that published the most were the United States and Brazil, with four and three studies, respectively. Not a single study presented as a primary or related subject the context of the pandemic of COVID-19, considering the devastating and lethal effects that occurred during the year 2020 (and until the present year, 2022) that would possibly influence resilience.

The characteristics of the included studies can be seen in Figure 2:

In the studies included in this review, the assessment of resilience was analyzed in individuals with ischemic heart disease, myocardial infarction, stroke, and heart failure, and six resilience assessment instruments were identified, four adapted for use in Brazil: Wagnild & Young, CD-RISC, BRS, and DRS-15. All used self-report scales adopted a Likert-type response model (4-7 points), with variation in the number of questions (6-25). Figure 3 presents the domains and attributes of the instruments identified:

DISCUSSION

Studies on resilience have increased in the last ten years nationally[8] and internationally[9], along with research that assesses resilience in individuals with chronic CVD.

The Strategic Action Plan for Tackling NCDs, proposed for the period of 2021 to 2030, aimed to develop and implement effective, integrated, sustainable, and scientific evidence-based public policies for the prevention and control of NCDs[10]. Some studies have shown that psychological variables are potentially influential in the occurrence, maintenance, and recovery from CVD[3,11]. Assuming the concept of resilience (psychological variable), it must be analyzed critically, from the complexity of the phenomenon, comprehending its relationships and insertions, and not under an exclusively individual aspect. In the individualizing perspective, resilience has the status of an "entity", not linked to a process[6,8].

Older resilience assessment measures, such as the scales of Wagnild & Young (1993) and the CD-RISC (2003), instead of assessing resilience as the ability to recover from and adapt to stress, evaluated protective factors or resources that involve personal characteristics and coping sty-
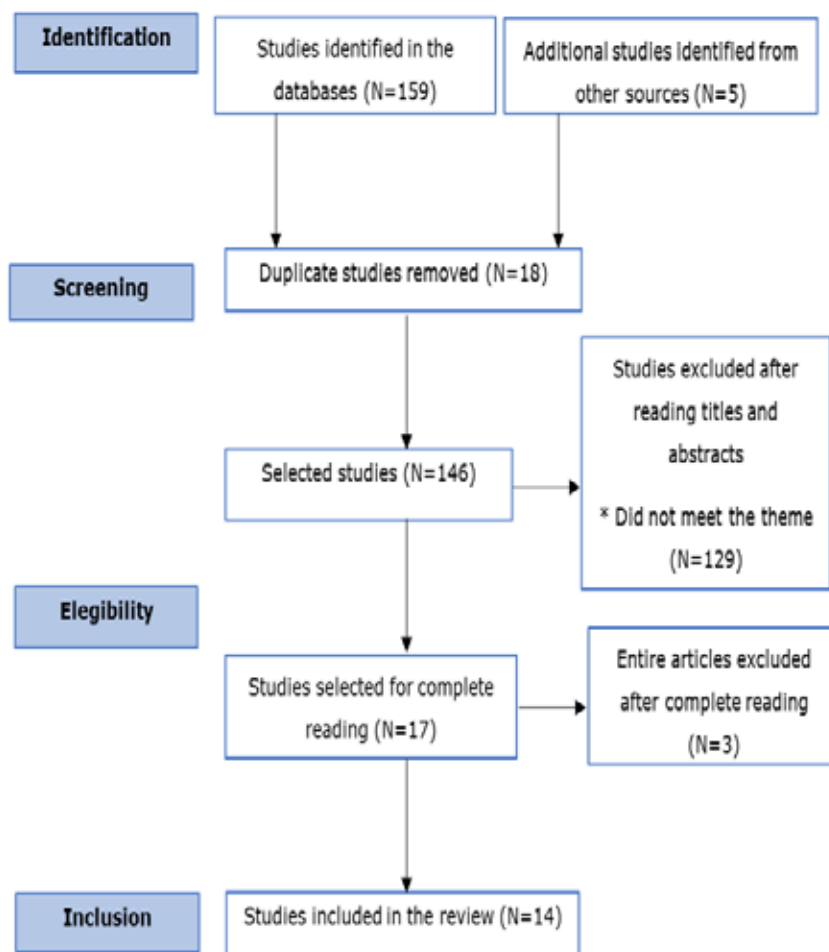
Figure 1 - Flowchart of the search and eligibility of studies. Rio de Janeiro, RJ, Brazil, 2021
Source: Adapted from PRISMA-ScR, 2015.

les[9,12]. These instruments contain domains that clearly involve individual characteristics.

Two different categories that figure as fundamentally important components in resilience must be reflected on, but should not be confused with the concept of resilience: the risk factors (negative adaptation patterns) and the protective factors (positive adaptation patterns). Among the psychological risk factors for CVD is stress, which can lead to increased adrenaline, hemodynamic, neuroendocrine, and immunological changes. The psychological protective factors include the ability to adapt and resist to stressful situations, revealing resilience as a protective factor[2].

A systematic review[8] that aimed to understand how national researchers have evaluated resilience identified that 90% of the 31 studies included assessed constructs associated with, and/or underlying characteristics of resilience, and not the construct itself.

The DRS scale was developed in an attempt to measure dispositional resilience (resistance), that is, resilience as a personality trait(s). However, the authors themselves indicate a potential limitation of the scale by relating resilience to some personality traits, not understanding it as a dynamic process that is developed over a lifetime[13]. Some criticisms involve the observation that scales that propose to evaluate resilience as a personality trait are not effective[9].

The BRS seems to have a singular place in behavioral medicine research, as it appears to be the only measure that specifically assesses resilience at its original: recovering from stress. When studying people who are already ill, assessing the specific ability to recover may be more important than assessing the capacity to resist illness, and in turn have a more direct relationship to positive health outcomes[12,14]. In this review, three of the 14 included studies used the BRS; none of them were performed in Brazil[15-17].

Year/ Country	Title	Type of study	Objectives	Participants	Instrument used
2015 Norway	Psychological hardiness predicts cardiovascular health	Not presented	To evaluate the association of psychological hardiness and CVD indicators	Students of a university with lipidogram evaluation (N=373)	Dispositional Resilience Scale (DRS)-15
2016 Brazil	Anxiety, depression, resilience, and self-esteem in individuals with cardiovascular diseases	Cross-sectional	To evaluate whether there is a relationship between anxious, depressive symptoms, resilience, and self-esteem with the participants' characteristics	Hospitalized patients with CVD of clinical and surgical etiology (N=120)	Wagnild & Young's Resilience Scale
2016 Switzerland	Association of Trait Resilience with Peritraumatic and Posttraumatic Stress in Patients with Myocardial Infarction	Randomized clinical trial	To replicate that trait resilience is associated with reduced levels of post-traumatic stress	Consecutive AMI patients evaluated three months after hospitalization (N=98)	Wagnild & Young's Resilience Scale adapted for use in Germany
2016 United Kingdom	Developing a novel peer support intervention to promote resilience after stroke	Mixed Methods: Scoping Review, Systematic and Qualitative Research	To develop and evaluate a new intervention for promoting resilience in patients after stroke	Stroke survivors > 60 years (N=22)	The Brief Resilience Scale (BRS)
2016 USA	Low psychological resilience is associated with depression in patients with cardiovascular disease	Cross sectional	To examine the relationship between psychological resilience and symptoms of depression in non-acute heart disease outpatients	Adult heart disease patients followed on outpatient clinic (N=419)	Short form of Sense of Coherence Scale (SOC13)
2016 Brazil	Resilience in patients with ischemic heart disease	Cross-sectional	To investigate resilience in individuals with ischemic heart disease	Patients (35 to 65 years), hospitalized with diagnosis of AMI (67) and patients without diagnosis of AMI (66) (N=133)	Wagnild & Young's Resilience Scale adapted for use in Brazil

Year/Country	Title	Type of study	Objectives	Participants	Instrument used
2016 Brazil	The face is no index to the heart: the influence of resilience in adherence to treatment of heart failure.	Quantitative and Qualitative Approach	To evaluate the influence of resilience on treatment adherence	Patients followed in a HF outpatient clinic (N=50)	Resilience Scale (RS-14)
2018 Spain	Influence of gender on protective and vulnerability factors, adherence, and quality of life in patients with cardiovascular disease	Cross-sectional	To analyze gender differences on protective factors, vulnerability, treatment adherence, and QoL in patients with CVD	91 men and 107 women (N= 198)	Connor-Davidson Resilience Scale (CD-RISC)
2018 USA	Resilience in African American Women at Risk for Cardiovascular Disease: an Exploratory Study	Cross-sectional	To analyze the predictors of resilience in African-American women at risk for CVD	African-American women at risk for CVD (N=104)	Connor–Davidson Resilience Scale
2019 China	Associations of psychological distress with positive psychological variables and activities of daily living among stroke patients: a cross-sectional study	Cross-sectional	To investigate the prevalence of psychological illness in stroke patients, and identify the associations of psychological distress with positive psychological variables and ADLs	Stroke patients recruited by convenience from community hospitals (N=710)	Wagnild & Young's Resilience Scale, Chinese version
2019 USA	Stress, Resilience, and Cardiovascular Disease Risk Among Black Women: Results From the Women's Health Initiative	Documentary analysis of a cohort	To investigate the associations of stressful life events and social strain with CVD incidents among African American women	African-American women (N=10,785)	The Brief Resilience Scale (BRS)
2020 Taiwan	Resilience among older cardiovascular disease patients with probable sarcopenia	Cross-sectional	To investigate the factors associated with resilience among older adults with cardiovascular disease and probable sarcopenia.	Outpatients, older adults, with CVD and probable sarcopenia (N=267)	Wagnild & Young's Resilience Scale adapted for use in China
2020 USA	Resilience and CVD-protective Health Behaviors in Older Women: Examining Racial and Ethnic Differences in a Cross-Sectional Analysis of the Women's Health Initiative	Cross-sectional	To investigate the associations between resilience and CVD-related risk factors such as diet, smoking, physical activity, sleep, and alcohol consumption	Older American women, of diverse race and ethnicity, enrolled in the Women's Health Initiative (N=77,395)	The brief resilience scale (BRS)

Year/ Country	Title	Type of study	Objectives	Participants	Instrument used
2020 Germany	Effects of age on trait resilience in a population-based cohort and two patient cohorts	Longitudinal cohort	To analyze the level of stability and change in trait resilience with age; to evaluate associations of sociodemographic personality factors with trait resilience	Three cohorts: patients hospitalized for an acute episode of depression with CVD (N=1544)	Wagnild & Young's Resilience Scale adapted for use in Germany

Figure 2 - Characteristics of the included studies. Rio de Janeiro, RJ, Brazil, 2021
Source: Developed by the authors, 2021.

The BRS adopts an outcome-oriented approach that defines resilience in terms of how well someone recovers from stress and is a six-question instrument that is quick to be answered[16]. However, the BRS should contain questions considering support networks and not focused only on the individual, as can be seen in the questions that compose it: "Do I have a tendency to recover quickly after difficult times? Do I have difficulty coping with stressful events? Do I take a long time to recover from a stressful event? Is it difficult for me to react when something bad happens? Do I usually go through difficult times with very few problems? Do I usually take a long time to overcome setbacks in my life?".

Recent studies are interested in individuals or groups that transcend the scope of coping with a stressful situation and are able to evolve and develop from it, in a movement of positive learning from the traumatic or adverse experience to which they are exposed[2,18]. When dealing with a chronic disease, resilience can contribute to mitigating the negative impact of the physical, social, emotional, and economic consequences experienced. What do you want to use it for? Which group do you want to assess?[4]

A study evaluating markers of vulnerability in health of patients with heart failure (HF), showed three dimensions to which these individuals are exposed: Human person, Co-presences, and Care. The "Human Person" dimension includes: socioeconomic and demographic status, clinical profile, learning, health behaviors, and mental health. The "Co-presences" dimension includes social support and family bonds. The "care" dimension includes health technologies, costs, and health services[19]. Such studies are essential to identifying variables that may influence treatment adherence and quality of life.

The constitutive and operational definitions of the "Co-Presence" markers regarding social support must include the instrumental, emotional, informational, and autonomy support needs of the patient. And, when reflecting on family support, the family relationships, monitoring, and family functioning must be accounted for. In addition, mental health variables such as disease acceptance, beliefs about treatment, and dispositional optimism are fundamental markers for treatment evaluation[19]. Recent studies indicate that married patients with HF present a better emotional state when facing the disease[20,21], while earlier studies[22,23] state that the sources of support can be people living close to the HF patient, whether or not they live with him.

Many times, patients with HF need care for activities of daily living, and it is essential to have someone close to them most of the time, in this case the spouse. This care is related to physical impairment (fatigue, dyspnea), resulting in the loss of self-care and self-esteem, producing uncomfortable feelings such as embarrassment, feelings of worthlessness, and sadness. The level of resilience can be affected depending on the existing support network.

This review showed that most studies assessing resilience in individuals with CVD are recent, but still consider instruments with domains that do not corroborate the currently accepted concept of resilience[2, 24-33].

A methodological review study of resilience scales reviewed 15 measurement instruments. Among the instruments used, the Wagnild & Young, CD-RISC, and BRS scales received better psychometric evaluations, however, the conceptual and theoretical adequacy was questionable. The findings showed that no current "gold standard" exists for resilience measures[34].

Instruments	Domains	Attributes
Dispositional Resilience Scale (DRS)-15	1. Commitment 2. Control 3. Challenge	The DRS is a measure of hardiness, a personality trait that influences how people cope with stressful circumstances. 1. Sense of meaning and purpose for self, others, and work. 2. Sense of autonomy and ability to influence one's own destiny. 3. Sense of enthusiasm for life that leads one to perceive changes as exciting rather than threats to safety or survival.
Wagnild & Young's Resilience Scale	1. Equanimity 2. Perseverance 3. Self-reliance 4. Meaningfulness 5. Existential aloneness	Assessment of protective factors or resources that encompass personal attributes and forms of coping. 1. Readiness to face whatever comes, related to sense of humor 2. Ability to remain confident in one's individual strengths and capabilities 3. Association to problem-solving skills and to people accepting their own capabilities and limitations. 4. Belief that life has a purpose 5. Perception that each person is unique.
The Brief Resilience Scale (BRS)	1. Ability to recover from stress	Scale with six items: three positive and three negative coping items. 1. Assessment of the ability to recover or bounce back from stress.
Short form of Sense of Coherence Scale (SOC13)	1. Comprehensibility 2. Manageability 3. Meaningfulness	Determining how a person copes with stress. 1. Belief that the world is orderly, rational, and predictable; 2. Belief that one has the resources to meet demands; 3. Belief that challenges are worth facing.
The resilience scale (RS-14)	1. Equanimity 2. Perseverance 3. Self-reliance 4. Meaningfulness 5. Existential aloneness	Instrument of Wagnild & Young's Scale shortened from 25 items to 14 items. The current version of the SR-14 contains five items referring to self- reliance, three referring to meaningfulness, two referring to equanimity, two referring to perseverance, and two referring to existential aloneness.
Connor-Davidson resilience scale (CD-RISC)	1. Personal competence 2.Trust in one's instincts and tolerance of adversity 3.Positive acceptance of change 4.Control 5.Spirituality	Self-assessment of stress coping capacity. The scale was developed on the concepts of toughness, adaptation, and hardiness on stress. 1) Idea of personal competence, high standards, and tenacity; 2) trust in one's instincts, tolerance of negative affect, and strengthening effects of stress; 3) having a positive acceptance of change and secure relationships; 4) control of situations; 5) how spirituality influences resilience.

Figure 3 - Instruments used in the included studies. Rio de Janeiro, RJ, Brazil, 2021
Source: Developed by the authors, 2021.

As resilience is a construct under development, both nationally and internationally, few instruments that assess resilience related specifically to chronic diseases are available.

CONCLUSION

Six resilience assessment instruments were identified in this review, four of them validated for use in Brazil, none of them specific for assessment of resilience in chronic diseases. These instruments have varied domains and attributes, however, there is no doubt that all of them address issues about coping with stressful situations via individual characteristics.

Measurement instruments that assess the construct itself, with good psychometric analysis, and that consider the vulnerabilities to which patients with CVD are exposed, their social context, and how they cope with stressful situations, seems to be a promising approach for assessment of resilience in an expanded and specific manner for positive health outcomes.

We believe that these findings will contribute to the scientific community that provides care to individuals with chronic CVD, by assessing and considering this variable of great importance for coping with the disease. This study will support the development of a specific instrument to assess resilience in individuals with HF, a chronic CVD that is the final pathway for most of these diseases.

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CONFLICT OF INTERESTS

The authors have declared that there is no conflict of interests.

REFERENCES

1. Malta DC, Andrade SSCA, Oliveira TP, Moura L, Prado RR, Souza MFM. Probability of premature death for chronic non-communicable diseases, Brazil and Regions, projections to 2025. Rev Bras Epidemiol. 2019;22:E190030. https://doi.org/10.1590/1980-549720190030

2. Grillo RO. Quem vê cara não vê coração: a influência da resiliência na adesão ao tratamento da Insuficiência Cardíaca [master's thesis on the internet]. Rio de Janeiro (RJ): Programa de Pós-Graduação do Departamento de Psicologia da PUC-Rio, Pontifícia Universidade Católica; 2016 [cited 2021 jan 15]. 121 p. Available from: https://www.maxwell.vrac.puc-rio.br/27264/27264.PDF

3. Pinto LM. Resiliência em doenças crônicas: associação com ansiedade, depressão, variáveis sociodemográficas e clínicas [master's thesis on the internet]. Brasília (DF): Programa de Pós-Graduação em Psicologia Clínica e Cultura, Universidade de Brasília; 2019 [cited 2021 jan 18]. 87 p. Available from: https://repositorio.unb.br/bitstream/10482/37069/1/2019_LyrisMeruviaPinto.pdf

4. Estela J, Böell W, Maria D, Vieira G, Hegadoren KM. Sociodemographic factors and health conditions associated with the resilience of people with chronic diseases: a cross sectional study. Rev Latino-Am Enferm. 2016;24:e2786. http://dx.doi.org/10.1590/1518-8345.1205.2786

5. Brandão JM, Mahfoud M, Gianordoli-Nascimento IF. The construction of the concept of resilience in psychology: discussing the origins of resilience. Paidéia. 2011;21(49):263–71. https://doi.org/10.1590/S0103-863X2011000200014

6. Nascimento BDPS, Sampaio CRB, Vasconcelos BRT. Resiliência: notas epistemológicas, teóricas e críticas. Rev Amazôn (Online) [Internet]. 2020 [cited 2021 jan 15];25(2):814-845. Available from: https://periodicos.ufam.edu.br/index.php/amazonica/article/view/7805

7. Joanna Briggs Institute (JBI). Joanna Briggs Institute Reviewers' Manual: 2015 edition/ Supplement [Internet]. Adelaide: JBI; 2015 [cited 2021 jan 20]. Available from: https://nursing.lsuhsc.edu/JBI/docs/ReviewersManuals/Scoping-.pdf

8. Oliveira KS, Nakano TC. Avaliação da resiliência em Psicologia: revisão do cenário científico brasileiro. Psicol Pesq [Internet]. 2018 [cited 2021 mar 15];12(1):1–11. Available from: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1982-12472018000100009

9. Oliveira KS, Nakano TC. Avaliação da resiliência: uma revisão internacional. Psicol Ver (Online) [Internet]. 2019 [cited 2021 mar 15];25(19):1021–43. Available from: http://periodicos.pucminas.br/index.php/psicologiaemrevista/article/view/13157/17188

10. Ministério da Saúde (BR), Secretaria de Vigilância em Saúde, Departamento de Análise da Situação de Saúde. Plano de ações estratégicas para o enfrentamento das doenças crônicas não transmissíveis (DCNT) no Brasil [Internet]. Brasília (DF): Ministério da Saúde; 2020 [cited 2021 mar 20]. Available from: https://antigo.saude.gov.br/images/pdf/2020/October/01/Plano-DANT-vers--o--Consulta-p--blica.pdf

11. Soares MRZ, Ferreira RER, Carvalho FA, Santos DR dos. Psicocardiologia: análise de aspectos relacionados à prevenção e ao tratamento de doenças cardiovasculares. Rev Bras Ter Comport Cogn [Internet]. 2016 [cited 2021 may 20];18(1):59–71. Available from: http://rbtcc.webhostusp.sti.usp.br/index.php/RBTCC/article/view/832

12. Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The brief resilience scale: assessing the ability to bounce back. Inter J Behav Med [Internet]. 2008 [cited 2021 may 11];15(3):194–200. Available from: https://link.springer.com/article/10.1080/10705500802222972

13. Solano JPC. Adaptação e validação de escalas de resiliência para o contexto cultural brasileiro: escala de resiliência disposicional e escala de Connor-Davidson [dissertation on the internet]. São Paulo (SP): Faculdade de Medicina de São Paulo, Universidade de São Paulo; 2016 [cited 2021 apr 21]. 207 p. Available from: https://teses.usp.br/teses/disponiveis/5/5152/tde-23082016-092756/publico/JoaoPauloConsentinoSolano.pdf

14. Almeida MH, Dias S, Xavier M, Torgal J. Validação Exploratória e Confirmatória da Escala de Resiliência Connor-Davidson (CD-RISC-10) numa Amostra de Inscritos em Centros de Emprego. Acta Med Port. 2020;33(2):124-132. https://doi.org/10.20344/amp.12243

15. Sadler E, Sarre S, Tinker A, Bhalla A, McKevitt C. Developing a novel peer support intervention to promote resilience after stroke. Health Soc Care Community. 2017;25(5):1590–600. https://doi.org/10.1111/hsc.12336 [included in the review]

16. Felix AS, Lehman A, Nolan TS, Sealy--Jefferson S, Breathett K, Hood DB et al. Stress, resilience, and cardiovascular disease risk among black women: Results from the women's health initiative. Circ Cardiovasc Qual Outcomes [Internet]. 2019 [cited 2021 maio 10];12(4):1–14. Available from: https://www.ahajournals.org/doi/full/10.1161/CIRCOUTCOMES.118.005284 [included in the review]

17. Springfield S, Qin F, Hedlin H, Eaton CB, Rosal MC, Taylor H et al. Resilience and CVD--protective health behaviors in older women: Examining racial and ethnic differences in a cross-sectional analysis of the women's health initiative. Nutrients. 2020;12(7):1–18. https://doi.org/10.3390/nu12072107 [included in the review]

18. Vasconcelos AO, Batista VC, Back IR, Miguel MEGB, Marquete VF, Marcon SS. Avaliação da resiliência de Pessoas com condições crônicas e cuidadores. Rev Enferm UFPE Online. 2019;13(3):690–6. https://doi.org/10.5205/1981-8963-v13i03a239188p690-696-2019

19. Cestari VRF, Florêncio RS, Pessoa VLMP, Moreira TMM. Validação dos marcadores da vulnerabilidade em saúde da pessoa com insuficiência cardíaca. Rev Eletrônica Acervo Saúde. 2021;13(5):1–11. https://doi.org/10.25248/reas.e7282.2021

20. Sousa MM, Oliveira JS, Soares MJGO, Bezerra SMMS, Araujo AA, Oliveira SHS. Association of social and clinical conditions to the quality of life of patients with heart failure. Rev Gaúch Enferm. 2017;38(2):1–8. http://dx.doi.org/10.1590/1983-1447.2017.02.65885

21. Souza TCTOA, Correia DMS, Nascimento DC, Christovam BP, Batista DCS, Cavalcanti ACD. The difficult daily life of heart failure bearing patients. J Res Fundam Care Online [Internet]. 2019 [cited 2021 jun 10];11(5):1340–6. Available from: http://www.seer.unirio.br/index.php/cuidadofundamental/article/view/8060

22. Dantas RAS, Pelegrino VM, Garbin LM. Avaliação do apoio social e sua relação com variáveis sociodemográficas de pacientes com insuficiência cardíaca em seguimento ambulatorial. Ciênc Cuid Saúde [Internet]. 2007 out/dez [cited 2021 jun 13];6(4):456-462. Available from: https://periodicos.uem.br/ojs/index.php/CiencCuidSaude/article/view/3680/2683

23. Sayers SL, Riegel B, Pawlowski S, Coyne JC, Samaha FF. Social support and self-care of patients with heart failure. Ann Behav Med. 2008;35(1):70–9. https://doi.org/10.1007/s12160-007-9003-x

24. Bartone PT, Valdes JJ, Sandvik A. Psycho- logical hardiness predicts cardiovascular he- alth. Psychol Health Med. 2016;21(6):743–9. https://doi.org/10.1080/13548506.2015.11 20323 [included in the review]

25. Carvalho IG, dos Santos Bertolli E, Paiva L, Rossi LA, Dantas RAS, Pompeo DA. Anxie- ty, depression, resilience and self-esteem in individuals with cardiovascular diseases. Rev Latino-Am Enferm. 2016;24:e2836. https:// doi.org/10.1590/1518-8345.1405.2836 [in- cluded in the review]

26. Meister RE, Princip M, Schnyder U, Barth J, Znoj H, Schmid JP et al. Asso- ciation of trait resilience with peritrauma- tic and posttraumatic stress in patients with myocardial infarction. Psychosom Med. 2016;78(3):327–34. https://doi. org/10.1097/PSY.0000000000000278 [in- cluded in the review]

27. Toukhsati SR, Jovanovic A, Dehghani S, Tran T, Tran A, Hare DL. Low psychological resilience is associated with depression in patients with cardiovascular disease. Eur J Cardiovasc Nurs. 2017;16(1):64–9. https:// doi.org/10.1177/1474515116640412 [inclu- ded in the review]

28. Lemos CMM, Moraes DW, Pellanda LC. Resilience in Patients with Ischemic Heart Disease. Arq Bras Cardiol. 2016;106(2):130- 135. https://doi.org/10.5935/abc.20160012 [included in the review]

29. Alemán JF, Rueda B. Influencia del gé- nero sobre factores de protección y vulne- rabilidad, la adherencia y calidad de vida en pacientes con enfermedad cardiovascular. Aten Prim. 2019;51(9):529–35. https://doi. org/10.1016/j.aprim.2018.07.003 [included in the review]

30. Saban KL, Tell D, Janusek L. Resilience in African American Women at Risk for Car- diovascular Disease: an exploratory study. J Urban Health [Internet]. 2019 [cited 2021 may 10];96:44–49. Available from: https:// link.springer.com/article/10.1007/s11524- 018-00334-0 [included in the review]

31. Wang X, Shang S, Yang H, Ai H, Wang Y, Chang S, et al. Associations of psycholo- gical distress with positive psychological variables and activities of daily living among stroke patients: a cross-sectional study. BMC Psychiatry [Internet]. 2019 [cited 2021 may 10];19(1):1–10. Available from: https:// bmcpsychiatry.biomedcentral.com/arti- cles/10.1186/s12888-019-2368-0 [included in the review]

32. Lee S-Y, Tung H-H, Peng L-N, Chen L-K, Hsu C-I, Huang Y-L. Resilience among ol- der cardiovascular disease patients with probable sarcopenia. Arch Gerontol Geriatr. 2020;86. https://doi.org/10.1016/j.arch- ger.2019.103939 [included in the review]

33. Linnemann P, Wellmann J, Berger K, Teis- mann H. Effects of age on trait resilience in a population-based cohort and two patient co- horts. J Psychosom Res. 2020;136:110170. https://doi.org/10.1016/j.jpsycho- res.2020.110170 [included in the review]

34. Windle G, Bennett KM, Noyes J. A metho- dological review of resilience measurement scales. Health Qual Life Outcomes [Internet]. 2011 [cited 2021 jun 11];9(1):8. Available from: https://hqlo.biomedcentral.com/arti- cles/10.1186/1477-7525-9-8

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