

INSTRUMENTS USED FOR MEASURING DIABETES BURNOUT: SCOPE REVIEW PROTOCOL

INSTRUMENTOS UTILIZADOS PARA MENSURAÇÃO DO DIABETES BURNOUT: PROTOCOLO DE REVISÃO DE ESCOPO

INSTRUMENTOS UTILIZADOS PARA MEDIR EL AGOTAMIENTO POR DIABETES: PROTOCOLO DE REVISIÓN DEL ALCANCE

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Submission: 17-05-2026

Approval: 24-08-2026

ABSTRACT

Diabetes burnout is characterized as a state of physical, emotional, and mental exhaustion related to the continuous demands of diabetes mellitus management, which may compromise self-care, therapeutic adherence, and the quality of life of individuals affected by the disease. Despite the growing scientific interest in the topic, systematic evidence regarding the instruments used for its measurement remains limited. Therefore, this study aims to map the instruments used in the scientific literature to assess diabetes burnout in clinical and research settings. This is a scoping review protocol developed in accordance with the recommendations of the Joanna Briggs Institute (JBI) and the PRISMA-ScR checklist, registered on the Open Science Framework platform. The research question was developed based on the PCC strategy, considering people with diabetes mellitus, diabetes burnout measurement instruments, and clinical and research contexts. Primary studies and gray literature published in Portuguese, English, or Spanish will be included, with no time restrictions. Searches will be conducted in national and international databases, as well as gray literature sources. Study selection will be carried out by independent reviewers using Rayyan®, and data extraction will be performed through an instrument adapted from the JBI. It is expected that this protocol will provide breadth and transparency in the mapping and systematization of the instruments used to assess diabetes burnout in the scientific literature. The results may contribute to strengthening research in this field and support professionals and researchers in selecting the most appropriate instruments for the assessment of this construct.

Key Words: Diabetes Mellitus; Burnout, Psychological; Mental Health; Validation Studies as Topic.

RESUMO

O diabetes burnout caracteriza-se como um estado de esgotamento físico, emocional e mental relacionado às demandas contínuas do manejo do diabetes mellitus, podendo comprometer o autocuidado, a adesão terapêutica e a qualidade de vida das pessoas acometidas pela doença. Apesar do crescente interesse científico sobre o tema, ainda são limitadas as evidências sistematizadas acerca dos instrumentos utilizados para sua mensuração. Assim, este estudo tem como objetivo mapear os instrumentos disponíveis na literatura científica para avaliar o diabetes burnout nos contextos clínicos e de pesquisa. Trata-se de um protocolo de revisão de escopo elaborado conforme as recomendações do Joanna Briggs Institute (JBI) e do checklist PRISMA-ScR, registrado na plataforma Open Science Framework. A questão de pesquisa foi construída a partir da estratégia PCC, considerando pessoas com diabetes mellitus, instrumentos de mensuração do diabetes burnout e os contextos clínicos e de pesquisa. Serão incluídos estudos primários e literatura cinzenta, publicados em português, inglês ou espanhol, sem delimitação temporal. As buscas serão realizadas em bases de dados nacionais e internacionais, além de fontes de literatura cinzenta. A seleção dos estudos será conduzida por revisores independentes, utilizando o Rayyan®, e a extração dos dados ocorrerá por meio de instrumento adaptado do JBI. Espera-se que o presente protocolo possibilite amplitude e transparência no mapeamento e a sistematização dos instrumentos utilizados para avaliação do diabetes burnout na literatura científica. Os resultados poderão contribuir para o fortalecimento das pesquisas na área e apoiar profissionais e pesquisadores na escolha de instrumentos mais adequados para avaliação desse construto.

Palavras-chave: Diabetes Mellitus; Esgotamento Psicológico; Saúde Mental; Estudos de Validação como Assunto.

RESUMEN

El burnout en diabetes se caracteriza como un estado de agotamiento físico, emocional y mental relacionado con las demandas continuas del manejo de la diabetes mellitus, pudiendo comprometer el autocuidado, la adherencia terapéutica y la calidad de vida de las personas afectadas por la enfermedad. A pesar del creciente interés científico sobre el tema, todavía son limitadas las evidencias sistematizadas acerca de los instrumentos utilizados para su medición. Así, este estudio tiene como objetivo mapear los instrumentos utilizados en la literatura científica para evaluar el burnout en diabetes en contextos clínicos y de investigación. Se trata de un protocolo de revisión de alcance elaborado conforme a las recomendaciones del Joanna Briggs Institute (JBI) y de la lista de verificación PRISMA-ScR, registrado en la plataforma Open Science Framework. La pregunta de investigación fue construida a partir de la estrategia PCC, considerando personas con diabetes mellitus, instrumentos de medición del burnout en diabetes y los contextos clínicos y de investigación. Se incluirán estudios primarios y literatura gris publicados en portugués, inglés o español, sin restricción temporal. Las búsquedas se realizarán en bases de datos nacionales e internacionales, además de fuentes de literatura gris. La selección de los estudios será realizada por revisores independientes utilizando Rayyan®, y la extracción de los datos se llevará a cabo mediante un instrumento adaptado del JBI. Se espera que este protocolo proporcione amplitud y transparencia en el mapeo y la sistematización de los instrumentos utilizados para la evaluación del burnout en diabetes en la literatura científica. Los resultados podrán contribuir al fortalecimiento de las investigaciones en esta área y apoyar a profesionales e investigadores en la selección de instrumentos más adecuados para la evaluación de este constructo.

Palabras Clave: Diabetes Mellitus; Agotamiento Psicológico; Salud Mental; Estudios de Validación como Tema.

INTRODUCTION

Diabetes Mellitus (DM) is a chronic condition with high global prevalence that requires continuous, complex, lifelong management. Its treatment involves glycemic monitoring, medication use, dietary adjustments, and regular physical activity a set of daily demands that directly impact the routine, quality of life, and well-being of people with DM.¹

Beyond clinical repercussions, diabetes care encompasses significant psychosocial dimensions, as the constant need for self-care can lead to emotional exhaustion, feelings of frustration, and difficulties in maintaining therapeutic regimens. The ongoing burden of demands, restrictions, and responsibilities associated with disease control can negatively affect the experience of living with diabetes, influencing both treatment engagement and the individual's perception of their ability to manage the condition.²

In this context, discussions regarding "diabetes burnout" have emerged; this phenomenon has gained prominence in the literature as a response to the exhaustion caused by the continuous demands of diabetes care. Diabetes burnout is characterized by a state of physical, emotional, and mental exhaustion, associated with disengagement from self-care practices and a perceived loss of control over disease management. These dimensions reflect the daily burden experienced by people with diabetes and are considered crucial for understanding self-care behaviors, treatment adherence, and health outcomes.^{3,4}

Studying diabetes burnout is significant due to the impact this phenomenon can have on self-care behavior, glycemic control, and the quality of life of people with diabetes. Furthermore, early recognition of this condition can facilitate the planning of interventions better tailored to the emotional and behavioral needs of this population, contributing to more comprehensive, person-centered care. Thus, the use of valid and reliable instruments to assess diabetes burnout is fundamental for clinical practice and research.⁵

Despite growing scientific interest in diabetes burnout, the body of scientific literature regarding its measurement remains limited. In this context, it is important to systematize the evidence on the instruments available in the literature for assessing diabetes burnout including their characteristics and psychometric properties thereby fostering a better understanding of these tools and supporting future research and clinical applications.^{3,6}

This mapping exercise may also help identify knowledge gaps, inform future investigations, and assist professionals and researchers in selecting the most appropriate instruments to assess this phenomenon. To this end, a search was conducted in *JBI Evidence Synthesis* and the Cochrane Library to check for existing protocols and reviews related to the proposed topic. To date, no systematic or scoping reviews whether published or currently underway have been identified that focus on mapping the instruments used to measure

diabetes burnout and their psychometric characteristics.

Given this background, the aim of this study is to map the instruments available in the scientific literature for measuring diabetes burnout in clinical and research settings.

METHODS

Protocol and Register

This is a scoping review, an approach that allows for the identification and organization of key concepts and available sources of evidence in the field, as well as the identification of knowledge gaps that may be explored in future studies.⁷

The study will be conducted in the following stages: 1) definition and alignment of the objective and research question; 2) development and alignment of inclusion criteria with the objective; 3) description of the planned approach for the evidence search; 4) evidence search; 5) study selection; 6) data extraction; 7) data analysis; 8) presentation of results; and 9) synthesis of evidence in relation to the review objective, establishing conclusions and implications for practice and research.⁷

Recommendations from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR) checklist will be used to draft the review.^{8,9} The protocol was developed in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P)¹⁰ guidelines¹⁰ adapted for scoping reviews and prospectively registered on the Open Science

Framework platform on May 16, 2026 (<https://osf.io/emy6v>).

Research question

The research question for this study was formulated based on the PCC mnemonic strategy used to guide scoping reviews. In this study, P (Population) refers to people with diabetes mellitus; C (Concept) refers to instruments for measuring diabetes burnout; and C (Context) encompasses both health services and the field of scientific research. Thus, the following question was formulated: What instruments are available in the scientific literature to measure diabetes burnout in clinical and research settings?

Inclusion criteria

Included studies must meet the criteria defined by the PCC mnemonic. Scientific publications derived from primary or secondary studies will be included, provided they are available in full text; published in English, Spanish, or Portuguese; have no time restrictions; and present instruments used to measure diabetes burnout.

Grey literature including dissertations and theses will be included, provided it meets the established eligibility criteria, in order to broaden the scope of the search and reduce potential publication bias. Efforts will be made to obtain studies that are not freely available in their entirety.

Exclusion criteria

Duplicate publications will be excluded, as well as editorials, reviews, opinion pieces, reflection papers, undergraduate capstone projects, letters to the editor, journalistic reports, and study protocols. Studies addressing exclusively other psychological constructs unrelated to diabetes burnout, or those that do not answer the review's guiding question, will also be excluded.

Search strategy

The formulation and implementation of the search strategy followed three procedural steps. An expert researcher searched for terms corresponding to the study's PCC mnemonic in

the Medical Subject Headings (MeSH) database, the Health Sciences Descriptors (DeCS) thesaurus, and the Emtree controlled vocabulary.

Subsequently, the strategies were constructed and pilot-tested. Construction involved the use of Boolean operators (AND and/or OR) to combine standard terms with their alternative terms. This process followed the methodology proposed by Araújo¹¹ for constructing search strategies based on the guiding question's key terms: extracting and converting them into descriptors, compiling alternative terms, and combining and unifying them into a single search command (Chart 1).

Chart 1 - Extraction and combination of descriptors related to the research question based on the PCC acronym. Fortaleza, CE, Brazil, 2026.

Research question	Which instruments have been used in the scientific literature to measure diabetes burnout in clinical and research contexts?		
	Population	Concept	Context
Extraction	People with diabetes mellitus	Diabetes burnout measurement instruments	Clinical and research contexts
Conversion	Diabetes Mellitus; Diabetes Mellitus, Type 1; Diabetes Mellitus, Type 2	Diabetes Burnout / Mental Health / Burnout, Psychological / Validation Studies as Topic / measurement development	Healthcare services and scientific research

Combination	Diabetes Mellitus OR Diabetes Mellitus, Type 1 OR Diabetes Mellitus, Type 2	Diabetes Burnout AND Mental Health OR Burnout, Psychological AND Validation Studies as Topic / measurement development	Clinical and research contexts
Construction	Diabetes Mellitus OR Diabetes Insipidus OR Diet, Diabetic OR Prediabetic State OR Scleredema Adulorum OR Glycation End Products, Advanced OR Glucose Intolerance OR Gastroparesis OR Diabetes Mellitus, Type 1 OR Type 1 Diabetes OR Diabetes, Type 1 OR Diabetes Mellitus, Insulin-Dependent OR Diabetes Mellitus, Insulin Dependent OR Insulin-Dependent Diabetes Mellitus OR Diabetes Mellitus, Juvenile-Onset OR Diabetes Mellitus, Juvenile Onset OR Juvenile-Onset Diabetes Mellitus OR IDDM OR Diabetes Mellitus, Type I OR Diabetes Mellitus, Sudden-Onset OR Diabetes Mellitus, Sudden Onset OR Sudden-Onset Diabetes Mellitus OR Type 1 Diabetes Mellitus OR Diabetes Mellitus, Insulin-Dependent, 1 OR Insulin-Dependent Diabetes Mellitus 1 OR Insulin Dependent Diabetes Mellitus 1 OR Juvenile-Onset Diabetes OR Diabetes, Juvenile-Onset OR Juvenile Onset Diabetes OR Diabetes, Autoimmune OR Autoimmune Diabetes OR Diabetes Mellitus, Brittle OR Brittle Diabetes Mellitus OR Diabetes Mellitus, Ketosis-Prone OR Diabetes Mellitus, Ketosis Prone OR Ketosis-	Diabetes Burnout AND Mental Health OR Health, Mental OR Mental Hygiene OR Hygiene, Mental OR Burnout, Psychological OR Psychological Burnout OR Burn-out OR Burn out OR Psychological Burn-out OR Burn-out, Psychological OR Psychological Burn out OR Burnout OR Burnout Syndrome OR Burn-out Syndrome OR Burn out Syndrome OR Burnout, Student OR Burnout, School OR School Burnout OR Student Burnout	

	Prone Diabetes Mellitus OR Diabetes Mellitus, Type 2 OR Diabetes Mellitus, Adult-Onset OR Adult-Onset Diabetes Mellitus OR Diabetes Mellitus, Adult Onset OR Diabetes Mellitus, Ketosis-Resistant OR Diabetes Mellitus, Ketosis Resistant OR Ketosis-Resistant Diabetes Mellitus OR NIDDM OR Diabetes Mellitus, Maturity-Onset OR Diabetes Mellitus, Maturity Onset OR Diabetes Mellitus, Non Insulin Dependent OR Diabetes Mellitus, Non-Insulin-Dependent OR Non-Insulin-Dependent Diabetes Mellitus OR Diabetes Mellitus, Noninsulin Dependent OR Diabetes Mellitus, Noninsulin-Dependent OR Diabetes Mellitus, Slow-Onset OR Diabetes Mellitus, Slow Onset OR Slow-Onset Diabetes Mellitus OR Diabetes Mellitus, Stable OR Stable Diabetes Mellitus OR Diabetes Mellitus, Type II OR Maturity-Onset Diabetes OR Diabetes, Maturity-Onset OR Maturity Onset Diabetes OR Maturity-Onset Diabetes Mellitus OR Maturity Onset Diabetes Mellitus OR MODY OR Maturity-onset diabetes of the young OR Noninsulin-Dependent Diabetes Mellitus OR Noninsulin Dependent Diabetes Mellitus OR Type 2 Diabetes OR Diabetes, Type 2 OR Type 2 Diabetes Mellitus	AND Validation Studies as Topic OR measurement development	
Use	"Diabetes Mellitus"[Mesh] OR (Diabetes Mellitus) OR (Diabetes Insipidus) OR (Diet, Diabetic) OR (Prediabetic State) OR (Scleredema Adultorum) OR (Glycation End Products, Advanced) OR (Glucose Intolerance) OR (Gastroparesis) OR "Diabetes Mellitus, Type 1"[Mesh] OR (Diabetes Mellitus, Type 1) OR (Type 1 Diabetes) OR (Diabetes, Type 1) OR (Diabetes Mellitus, Insulin-Dependent) OR (Diabetes Mellitus, Insulin Dependent) OR (Insulin-Dependent Diabetes Mellitus) OR (Diabetes Mellitus,		

Juvenile-Onset) OR (Diabetes Mellitus, Juvenile Onset) OR (Juvenile-Onset Diabetes Mellitus) OR (IDDM) OR (Diabetes Mellitus, Type I) OR (Diabetes Mellitus, Sudden-Onset) OR (Diabetes Mellitus, Sudden Onset) OR (Sudden-Onset Diabetes Mellitus) OR (Type 1 Diabetes Mellitus) OR (Diabetes Mellitus, Insulin-Dependent, 1) OR (Insulin-Dependent Diabetes Mellitus 1) OR (Insulin Dependent Diabetes Mellitus 1) OR (Juvenile-Onset Diabetes) OR (Diabetes, Juvenile-Onset) OR (Juvenile Onset Diabetes) OR (Diabetes, Autoimmune) OR (Autoimmune Diabetes) OR (Diabetes Mellitus, Brittle) OR (Brittle Diabetes Mellitus) OR (Diabetes Mellitus, Ketosis-Prone) OR (Diabetes Mellitus, Ketosis Prone) OR (Ketosis-Prone Diabetes Mellitus) OR "Diabetes Mellitus, Type 2"[Mesh] OR (Diabetes Mellitus, Type 2) OR (Diabetes Mellitus, Adult-Onset) OR (Adult-Onset Diabetes Mellitus) OR (Diabetes Mellitus, Adult Onset) OR (Diabetes Mellitus, Ketosis-Resistant) OR (Diabetes Mellitus, Ketosis Resistant) OR (Ketosis-Resistant Diabetes Mellitus) OR (NIDDM) OR (Diabetes Mellitus, Maturity-Onset) OR (Diabetes Mellitus, Maturity Onset) OR (Diabetes Mellitus, Non Insulin Dependent) OR (Diabetes Mellitus, Non-Insulin-Dependent) OR (Non-Insulin-Dependent Diabetes Mellitus) OR (Diabetes Mellitus, Noninsulin Dependent) OR (Diabetes Mellitus, Noninsulin-Dependent) OR (Diabetes Mellitus, Slow-Onset) OR (Diabetes Mellitus, Slow Onset) OR (Slow-Onset Diabetes Mellitus) OR (Diabetes Mellitus, Stable) OR (Stable Diabetes Mellitus) OR (Diabetes Mellitus, Type II) OR (Maturity-Onset Diabetes) OR (Diabetes, Maturity-Onset) OR (Maturity Onset Diabetes) OR (Maturity-Onset Diabetes Mellitus) OR (Maturity Onset Diabetes Mellitus) OR (MODY) OR (Maturity-onset diabetes of the young) OR (Noninsulin-Dependent Diabetes Mellitus) OR (Noninsulin Dependent Diabetes Mellitus) OR (Type 2 Diabetes) OR (Diabetes, Type 2) OR (Type 2 Diabetes Mellitus) OR (Diabetes Burnout) AND "Mental Health"[Mesh] OR (Mental Health) OR (Health, Mental) OR (Mental Hygiene) OR (Hygiene, Mental) OR "Burnout, Psychological"[Mesh] OR (Burnout, Psychological) OR (Psychological Burnout) OR (Burn-out) OR (Burn out) OR (Psychological Burn-out) OR (Burn-out, Psychological) OR (Psychological Burn out) OR (Burnout) OR (Burnout Syndrome) OR (Burn-out Syndrome) OR (Burn out Syndrome) OR (Burnout, Student) (Burnout, School) OR (School Burnout) OR (Student Burnout) AND "Validation Studies as Topic"[Mesh] OR (Validation Studies as Topic) OR (measurement development)

Source: adapted from Araújo 11

A pilot test was conducted using the Medical Literature Analysis and Retrieval System Online (Medline), Excerpta Medica dataBASE (Embase), and Virtual Health Library

(VHL) databases to evaluate their operationality and search feasibility. Table 2 presents the search strategies developed based on the MeSH, DeCS, and Emtree thesauri.

Chart 2 – Search strategies using descriptors from the MeSH, DeCS, and Emtree thesauri. Fortaleza, CE, Brazil, 2026.

Descriptors MeSH

"Diabetes Mellitus"[Mesh] OR (Diabetes Mellitus) OR (Diabetes Insipidus) OR (Diet, Diabetic) OR (Prediabetic State) OR (Scleredema Adultorum) OR (Glycation End Products, Advanced) OR (Glucose Intolerance) OR (Gastroparesis) OR "Diabetes Mellitus, Type 1"[Mesh] OR (Diabetes Mellitus, Type 1) OR (Type 1 Diabetes) OR (Diabetes, Type 1) OR (Diabetes Mellitus, Insulin-Dependent) OR (Diabetes Mellitus, Insulin Dependent) OR (Insulin-Dependent Diabetes Mellitus) OR (Diabetes Mellitus, Juvenile-Onset) OR (Diabetes Mellitus, Juvenile Onset) OR (Juvenile-Onset Diabetes Mellitus) OR (IDDM) OR (Diabetes Mellitus, Type I) OR (Diabetes Mellitus, Sudden-Onset) OR (Diabetes Mellitus, Sudden Onset) OR (Sudden-Onset Diabetes Mellitus) OR (Type 1 Diabetes Mellitus) OR (Diabetes Mellitus, Insulin-Dependent, 1) OR (Insulin-Dependent Diabetes Mellitus 1) OR (Insulin Dependent Diabetes Mellitus 1) OR (Juvenile-Onset Diabetes) OR (Diabetes, Juvenile-Onset) OR (Juvenile Onset Diabetes) OR (Diabetes, Autoimmune) OR (Autoimmune Diabetes) OR (Diabetes Mellitus, Brittle) OR (Brittle Diabetes Mellitus) OR (Diabetes Mellitus, Ketosis-Prone) OR (Diabetes Mellitus, Ketosis Prone) OR (Ketosis-Prone Diabetes Mellitus) OR "Diabetes Mellitus, Type 2"[Mesh] OR (Diabetes Mellitus, Type 2) OR (Diabetes Mellitus, Adult-Onset) OR (Adult-Onset Diabetes Mellitus) OR (Diabetes Mellitus, Adult Onset) OR (Diabetes Mellitus, Ketosis-Resistant) OR (Diabetes Mellitus, Ketosis Resistant) OR (Ketosis-Resistant Diabetes Mellitus) OR (NIDDM) OR (Diabetes Mellitus, Maturity-Onset) OR (Diabetes Mellitus, Maturity Onset) OR (Diabetes Mellitus, Non Insulin Dependent) OR (Diabetes Mellitus, Non-Insulin-Dependent) OR (Non-Insulin-Dependent Diabetes Mellitus) OR (Diabetes Mellitus, Noninsulin Dependent) OR (Diabetes Mellitus, Noninsulin-Dependent) OR (Diabetes Mellitus, Slow-Onset) OR (Diabetes Mellitus, Slow Onset) OR (Slow-Onset Diabetes Mellitus) OR (Diabetes Mellitus, Stable) OR (Stable Diabetes Mellitus) OR (Diabetes Mellitus, Type II) OR (Maturity-Onset Diabetes) OR (Diabetes, Maturity-Onset) OR (Maturity Onset Diabetes) OR (Maturity-Onset Diabetes Mellitus) OR (Maturity Onset Diabetes Mellitus) OR (MODY) OR (Maturity-onset diabetes of the young) OR (Noninsulin-Dependent Diabetes Mellitus) OR (Noninsulin Dependent Diabetes Mellitus) OR (Type 2 Diabetes) OR (Diabetes, Type 2) OR (Type

2 Diabetes Mellitus) OR (Diabetes Burnout) AND "Mental Health"[Mesh] OR (Mental Health) OR (Health, Mental) OR (Mental Hygiene) OR (Hygiene, Mental) OR "Burnout, Psychological"[Mesh] OR (Burnout, Psychological) OR (Psychological Burnout) OR (Burn-out) OR (Burn out) OR (Psychological Burn-out) OR (Burn-out, Psychological) OR (Psychological Burn out) OR (Burnout) OR (Burnout Syndrome) OR (Burn-out Syndrome) OR (Burn out Syndrome) OR (Burnout, Student) OR (Burnout, School) OR (School Burnout) OR (Student Burnout) AND "Validation Studies as Topic"[Mesh] OR (Validation Studies as Topic) OR (measurement development)

Health Sciences Descriptors (DeCS)

MH: "Diabetes Mellitus" OR (Diabetes Mellitus) OR (Diabetes Mellitus) OR (Diabete) OR (Diabete Melito) OR (Diabetes) OR (Diabetes Melito) OR MH: " Diabetes Mellitus Tipo 1" OR (Diabetes Mellitus Tipo 1) OR (Diabetes Mellitus, Type 1) OR (Diabetes Mellitus Insulinodependente) OR (Diabetes Mellitus de Início na Juventude) OR (Diabetes Mellitus de Início Súbito) OR (Diabetes Mellitus 1 Dependente de Insulina) OR (Diabetes Mellitus Tipo I) OR (DMID) OR (Diabetes do Tipo 1) OR (Diabetes Tipo 1) OR (Diabetes Mellitus com Tendência à Cetose) OR (Diabetes Autoimune) OR (Diabetes Mellitus Instável) OR MH: "Diabetes Mellitus Tipo 2" OR (Diabetes Mellitus Tipo 2) OR (Diabetes Mellitus, Type 2) OR (Diabetes Mellitus não Insulino-Dependente) OR (MODY) OR (Diabetes do Tipo 2) OR (Diabetes Tipo 2) OR (Diabetes Mellitus não Insulinodependente) OR (Diabetes Mellitus não Dependente de Insulina) OR (Diabetes Mellitus de Início no Adulto) OR (Diabetes Mellitus de Início na Maturidade) OR (Diabetes Mellitus de Início Gradativo) OR (Diabetes Mellitus Resistente a Cetose) OR (Diabetes Mellitus Estável) OR (DMNID) OR (Diabetes Mellitus do Tipo MODY) OR (Diabetes Mellitus Tipo II) OR (esgotamento por diabetes) OR MH: C18.452.394.750\$ OR MH: C19.246\$ MH: C18.452.394.750.124\$ MH: C19.246.267\$ MH: C20.111.327\$ MH: C18.452.394.750.149\$ MH: C19.246.300\$ AND MH: "Saúde Mental" OR (Salud Mental) OR (Mental Health) OR (Higiene Mental) OR MH: "Esgotamento Psicológico" OR (Agotamiento Psicológico) OR (Burnout, Psychological Burnout) OR (Síndrome do Esgotamento) OR (Burn-out) OR (Exaustão do Estudante) OR (Exaustão da Escola) OR (Esgotamento da Escola) OR (Esgotamento do Estudante) OR (Esgotamento Parental) OR (Burnout Parental) OR MH: F02.418\$ OR MH: N01.400.500\$ OR MH: SP2.770.825\$ OR MH: F01.145.126.990.367\$ OR MH: F02.830.900.333\$ AND MH: "Estudos de Validação como Assunto" OR (Estudios de Validación como Asunto) OR (Validation Studies as Topic) OR (desenvolvimento de medição) OR MH: E05.337.925\$ OR MH: N05.715.360.335.500\$ OR MH: SP5.312.445.300\$

Descriptors *Emtree*

'diabetes mellitus'/exp OR 'diabetes' OR 'diabetic' OR 'diabets' OR 'unspecified diabetes mellitus' OR 'diabetes mellitus' OR 'insulin dependent diabetes mellitus'/exp OR 'diabetes mellitus type 1' OR 'diabetes mellitus type I' OR 'diabetes mellitus, insulin dependent' OR 'diabetes mellitus, insulin-dependent' OR 'diabetes mellitus, juvenile onset' OR 'diabetes mellitus, type 1' OR 'diabetes mellitus, type I' OR 'diabetes type 1' OR 'diabetes type I' OR 'diabetes, juvenile' OR 'DM 1' OR 'early onset diabetes mellitus' OR 'IDDM' OR 'IDDM1' OR 'insulin dependent diabetes' OR 'insulin-dependent diabetes mellitus' OR 'juvenile diabetes' OR 'juvenile diabetes mellitus' OR 'juvenile onset diabetes' OR 'juvenile onset diabetes mellitus' OR 'mckusick 22210' OR 'T1DM' OR 'type 1 diabetes' OR 'type 1 diabetes mellitus' OR 'type I diabetes' OR 'type I diabetes mellitus' OR 'insulin dependent diabetes mellitus' OR 'non insulin dependent diabetes mellitus'/exp OR 'adult onset diabetes' OR 'adult onset diabetes mellitus' OR 'diabetes mellitus type 2' OR 'diabetes mellitus type ii' OR 'diabetes mellitus, maturity onset' OR 'diabetes mellitus, non insulin dependent' OR 'diabetes mellitus, non-insulin-dependent' OR 'diabetes mellitus, type 2' OR 'diabetes mellitus, type II' OR 'diabetes type 2' OR 'diabetes type II' OR 'diabetes, adult onset' OR 'dm 2' OR 'insulin independent diabetes' OR 'insulin independent diabetes mellitus' OR 'ketosis resistant diabetes mellitus' OR 'maturity onset diabetes' OR 'maturity onset diabetes mellitus' OR 'niddm' OR 'NIDDM (non insulin dependent diabetes mellitus)' OR 'non insulin dependent (type 2) diabetes mellitus' OR 'non insulin dependent diabetes' OR 'non-insulin-dependent diabetes mellitus' OR 'noninsulin dependent (type 2) diabetes mellitus' OR 'noninsulin dependent diabetes' OR 'noninsulin dependent diabetes mellitus' OR 'T2DM' OR 'TIIDM' OR 'type 2 (insulin independent) diabetes' OR 'type 2 diabetes' OR 'type 2 diabetes mellitus' OR 'type II diabetes' OR 'type II diabetes mellitus' OR 'non insulin dependent diabetes mellitus' OR 'diabetes burnout' AND 'mental health'/exp OR 'condition, mental' OR 'health, mental' OR 'mental care' OR 'mental condition' OR 'mental factor' OR 'mental help' OR 'mental service' OR 'mental state' OR 'mental status' OR 'mental status schedule' OR 'psychic health' OR 'mental health' OR 'burnout'/exp OR 'burn-out' OR 'burn-out syndrome' OR 'burnout syndrome' OR 'burnout, psychological' OR 'psychological burn-out' OR 'psychological burnout' OR 'burnout' AND 'validation study'/exp OR 'validation studies' OR 'validation studies as topic' OR 'validation study' OR 'measurement development'

Source: Author's own work

Finally, the last stage will involve searching the following databases: Medline (via PubMed), Embase, Scopus, Web of Science, CINAHL, and LILACS and BDENF (via the Virtual Health Library/BVS); as well as Google

Scholar and the Theses and Dissertations Portal of the Coordination for the Improvement of Higher Education Personnel (Capes) for gray literature.

The search strategy developed for Medline will serve as a reference and be adapted for the other databases, respecting the specific characteristics of each. For Web of Science and CINAHL, standardized descriptors and equivalent free-text terms will be used, taking into account their specific indexing practices.

LILACS and BDENF will be accessed via the Virtual Health Library (BVS), using the same search strategy due to the similarity of their controlled vocabularies. For Embase, a strategy utilizing Emtree vocabulary terms will be employed; this will be adapted for Scopus, given the similarity in their subject coverage.

Regarding gray literature, the search will be conducted on Google Scholar and the Capes Theses and Dissertations Portal, using standardized descriptors and keywords, with adaptations made to accommodate the operational limitations of these search tools.

Although “diabetes burnout” and “measurement development” are not indexed as controlled descriptors in the MeSH, DeCS, and Emtree vocabularies, these terms were included as free-text keywords because they correspond to the terminology used in studies related to the construct. It was observed that the identified articles predominantly use the expressions “diabetes burnout” and “measurement development” in titles, abstracts, and keywords, despite the lack of standardization in bibliographic indexing systems. Thus, the use of free-text terms proved necessary to increase the sensitivity of the search strategy and enable the retrieval of potentially relevant studies.

As planned, a reverse search will be conducted for studies that, for some reason, were not captured by the initial search strategies. This reverse search involves identifying and selecting such articles and papers from the reference lists of the works initially retrieved. This ensures that every effort has been made to include as many studies as possible that could potentially be part of the review.

Article selection

Following the search strategies, the retrieved records will be exported to the Rayyan® reference screening tool to facilitate the PRISMA-ScR flowchart process for identifying, screening, and selecting the studies to be included in the review⁸. A team of three reviewers (MMB, VALF, and LVO) will conduct the selection, beginning with the identification and removal of duplicates. Subsequently, the reviewers will read the article titles and abstracts and discuss any disagreements. Discrepancies regarding article eligibility will be resolved by a simple majority vote (2/3) among the reviewers.

Articles deemed suitable after the title and abstract review will be read in full by the three reviewers, who will then meet to discuss their assessments. In the event of disagreements, a simple majority vote (2/3) will again determine the articles' eligibility. Finally, articles selected for inclusion in the review will be imported into the Zotero® reference management software, and the data extraction process will follow.

Data extraction

Data extraction will be conducted using a standardized instrument from the Joanna Briggs Institute (JBI), adapted to the objectives of this scoping review. The extraction form will be structured in Microsoft Word and will cover study identification variables, methodological characteristics, and information regarding the instruments used to assess diabetes burnout.

The characteristics of the identified studies and instruments will include the target population, type of diabetes assessed, application setting, country, year and language of instrument development, study type, number of items, dimensional structure, instrument purpose (development, validation, or cross-cultural adaptation), and psychometric methods employed to assess measurement properties. Information regarding evidence of the instruments' validity and reliability will also be collected when available.

The extraction phase will be carried out by two independent reviewers (MMB and VALF), with a third reviewer (LVO) responsible for resolving any discrepancies. At the end of the process, the reviewers will meet to discuss the findings, identify knowledge gaps, and synthesize the mapped evidence.

Data analysis

Data analysis will be conducted descriptively, following the Joanna Briggs Institute (JBI) approach for scoping reviews.

Studies will be organized into a narrative synthesis and mapping tables, taking into account methodological characteristics and the features of the identified instruments.

Instruments will be grouped into categories based on their purpose and structural characteristics. Information regarding psychometric properties will be considered whenever available. This stage will follow a data charting process, without performing statistical synthesis or analytical inference.

Presentation of results

Data will be extracted, mapped, and synthesized into charts and tables, organized to present the key characteristics of the studies included in the review including identification details, methodological information, and data related to diabetes burnout measurement instruments. This organization will provide an overview of the analyzed material and its contribution to mapping the instruments available in the scientific literature.

A descriptive synthesis of the findings will be conducted, covering the characteristics of the identified instruments, their psychometric properties (where available), application contexts, and the main recommendations from the included studies.

The data will be organized through categorization based on the methodological similarity (development, validation, or cross-cultural adaptation) and functionality of the instruments specifically regarding instrument

types, purposes, and structural characteristics. This categorization will follow the mapping approach proposed for scoping reviews, without aiming to conduct an in-depth interpretive synthesis.

The study will not require submission to or approval by a Research Ethics Committee, as it relies exclusively on secondary data in the public domain, in accordance with the ethical principles established in Resolution No. 466/2012 of the National Health Council.

CONCLUSION

This scoping review protocol is expected to provide breadth and transparency in mapping and systematizing the instruments used to assess diabetes burnout in the scientific literature. The synthesis of this evidence may contribute to understanding the different approaches to measuring the construct, considering methodological characteristics, dimensions assessed, intended uses, and psychometric properties of the identified instruments.

By gathering and describing the available instruments, this review may support researchers and professionals in selecting the most appropriate tools for use in research and clinical practice. Finally, the results may contribute to strengthening scientific production in the area, offering support for future investigations, validation processes, and cross-cultural adaptation, as well as for the development of instruments applicable to different cultural and care contexts.

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Funding

There is no external funding for this research. The costs are borne by the authors.

Data availability statement

No datasets were generated in this study. The information presented is described in the body of the article.

Conflict of interest statement

None to declare.

Authorship criteria

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Scientific Editor: Ítalo Arão Pereira Ribeiro.

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