



Clinicians' Barriers to Screening and Diagnosing Diabetes Distress in Patients with Type 1 and 2 Diabetes Mellitus: A systematic review

Musa Lewis Nhlabatsi^{1*}, Edwin R. van Teijlingen², and Vanora A. Hundley²

¹Faculty of Health & Social Sciences, Bournemouth University, Bournemouth, United Kingdom and ²Centre for Midwifery, Maternal & Perinatal Health, Faculty of Health & Social Sciences Bournemouth University, Bournemouth, United Kingdom

*Corresponding author: Musa Lewis Nhlabatsi. Email: lewienhlabatsi@gmail.com

DOI: <https://dx.doi.org/10.4314/ajhs.v36i5.2>

Abstract

BACKGROUND

People with diabetes commonly experience diabetes distress which is associated with adverse health outcomes. Although diabetes distress assessment tools are available, the condition is underdiagnosed in primary and specialised clinical settings.

OBJECTIVES

The systematic review aimed to identify and analyse barriers that clinicians encounter when screening for diabetes distress in patients with type 1 and 2 Diabetes Mellitus.

METHODS

Four databases, PubMed, ESCOB, PsycINFO and Scopus, were searched to identify relevant studies which were mapped narratively using thematic analysis. Quantitative, qualitative and mixed methods studies published in English were considered for inclusion in this systematic review without geographic limitations.

RESULTS

Our search identified 1579 studies, and four primary studies from three countries met the inclusion criteria. These studies reported five barriers, which included (1) lack of knowledge; (2) lack of time; (3) lack of accessibility to mental health services; (4) lack of motivation; and (5) patients' denial of their diabetes distress. The two most reported barriers were lack of knowledge and time.

CONCLUSIONS

The review identified critical barriers to the underdiagnosis of diabetes distress by clinicians. Further, it highlights the need for policymakers and organisations to conduct pragmatic research to understand clinicians' experiences when assessing diabetes distress in various healthcare settings to improve diabetes management.

Keyword: Barriers; Diabetes distress; Screening; Diagnosing; Type 1 and 2 Diabetes Mellitus

[*Afr. J. Health Sci.* 2023 36 (5): 493-504]

Introduction

Globally, approximately 537 million adults between the ages 20 and 79 years are diagnosed with Diabetes mellitus (DM), and the projection is that by 2030 and 2045, people living with diabetes will be nearly 643 and 783 million, respectively (1). Hence, diabetes is a significant challenge in health systems worldwide, and it will be the seventh leading cause of mortality by 2030 (2, 3). Additionally, one-third of adults with type 2 diabetes suffer from diabetes distress (4). Diabetes distress refers to the emotional reaction to the persistent

burden of living with DM, self-care management, and the possibility of lifelong diabetic complications (5, 6, 7). It was introduced in the public health field in 1995 by a team of psychiatrists and psychologists at the Joslin Diabetes Centre in the United States of America (USA) (8, 9). Diabetes distress develops when diabetic patients constantly experience the burden of frustration, worry, and anger due to difficulties they are confronted with in maintaining the glycaemic index within the norm (10, 11, 12).



Diabetes distress differs from depression because it entails the negative emotional response experienced by people with diabetes, whilst clinical depression is a serious mood disorder which is not a disease-specific condition and is characterised by sadness or anhedonia with additional symptoms of decreased energy, reduced ability to think, significant change in appetite, feeling of worthlessness, insomnia and suicidal ideation (13). Ample literature suggests that depression may result from untreated diabetes distress among people with diabetes (14, 15, 16). Several studies established that diabetes distress is more prevalent in our societies. For instance, recent studies showed a prevalence of 46% (17) and 48.6% (18), while others reported as low as 36% (19) and as high as 63% (20). Interestingly, diabetes distress is associated with high glycated haemoglobin (HbA_{1c}), which can predispose patients with type 1 and 2 diabetes to unwanted complications of diabetes (21, 22, 23, 24). Further, the literature suggests that untreated diabetes is a risk of mortality, diabetes-associated complications, poor disease management, and poor quality of life in clients with DM (25, 26).

For the past 25 years, the International Diabetes Federation (IDF) has recommended implementing a patient-centred care approach to manage diabetes wherein the well-being, attitudes, beliefs and worries related to diabetes are periodically assessed, and referrals to mental health professionals are arranged as per clients' needs (27). Subsequently, the Diabetes Distress Scale (DDS) and the Problem Areas in Diabetes Scale (PAID) were introduced to assess diabetes distress in patients with DM in the clinical area (28, 29). In addition, several researchers indicate that early screening, prevention, and treatment of diabetes distress results in improved quality of life and enhanced diabetes self-management in people with type 1 and 2 diabetes mellitus (4, 30, 31). Many healthcare systems have incorporated routine diabetes distress monitoring and psychological care in their national clinical care guidelines of diabetes management as recommendations

from research outputs (32, 33). Despite the mandatory screening for diabetes distress, there is a suboptimal diagnosis of the condition by healthcare workers in the clinical area (29, 34). The neglect of diabetes distress assessment by healthcare professionals shows that diabetes clients constantly experience dehumanising care in our healthcare systems (30, 35). The review will contribute to the comprehensive understanding of clinicians' barriers to screening diabetes distress, thus assisting healthcare providers in enacting policies and clinical guidelines to improve the quality of life of people with DM. Therefore, the primary aim of the systematic review is to identify and analyse barriers that clinicians encounter when screening for diabetes distress in patients with type 1 and 2 Diabetes Mellitus.

Materials and methods

Search strategy

The electronic literature search mainly mapped existing literature on diabetes distress using the PICO framework (36). We used the following PICO: Population = clinicians, Interest = barriers to screening and diagnosing, Context = diabetes distress, and O = identified barriers. We designed the search strategy collaboratively with the librarian to ensure rigour. The following databases, PubMed, ESCOB, PsycINFO and Scopus, were systematically searched for articles on clinicians' barriers to screening and diagnoses of diabetes distress. These databases are reputable for publishing peer-reviewed health and social sciences articles. Hence, the robustness of the review was guaranteed (37). The search continued until March 2023. Several search terms were tested but were not yielding substantial articles. Eventually, the databases were searched using search terms: Barr* OR Challeng*, screen* OR Diagnos* OR Assess*, Diabet* and distress* OR "Diabetes-specific distress" OR "Diabetes-related distress". However, the rationale for excluding clinicians from the search terms was to avoid confining the search to a specific cadre of healthcare workers. The literature search span followed

the inclusion and exclusion criteria that is illustrated in Table 1. Finally, the snowball search strategy was utilised to find further relevant papers from the reference list of included articles, and their full texts were screened to guarantee that all the crucial articles

were included in the review (38). The search strategy and reporting of the review will observe the PRISMA statement for Preferred Reporting Items for Systematic Reviews and Meta-Analyses (39).

Table 1:

Inclusion and exclusion criteria using the PICO framework (36).

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> • Studies focussing on Type 1 & 2 diabetes 	<ul style="list-style-type: none"> • Studies published before 1995
<ul style="list-style-type: none"> • Studies from any country 	<ul style="list-style-type: none"> • Studies on gestational diabetes
<ul style="list-style-type: none"> • Peer-reviewed studies 	
<ul style="list-style-type: none"> • Studies written in English 	

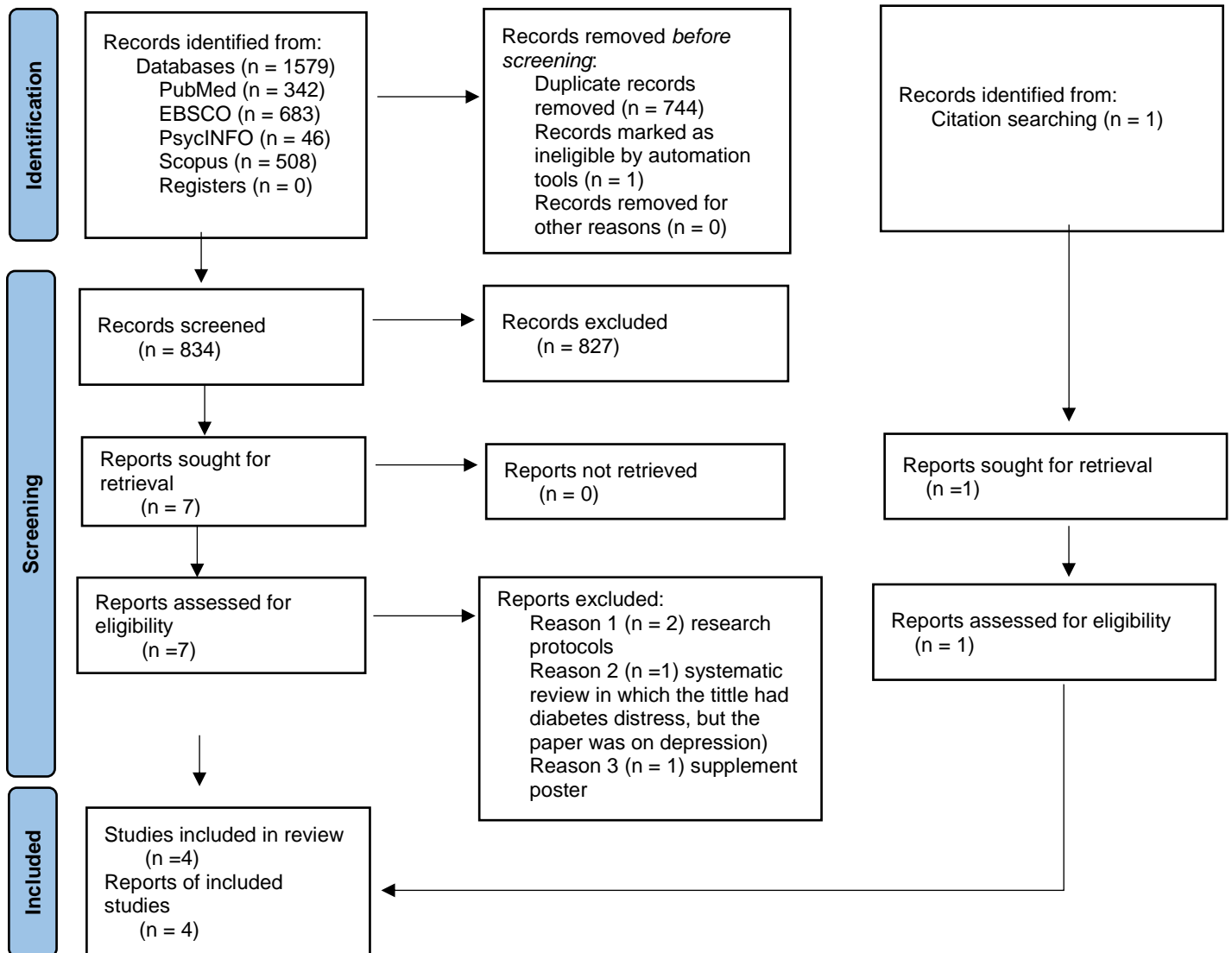


Figure 1.

PRISMA flow diagram of the study selection process (39).

Selection process

Studies with citations that met the inclusion criteria were imported to Endnote, a reference management software (40). Then, studies were screened in two stages. In the initial stage, they were screened based on the title and abstract, while in the subsequent phase, screening was based on full text. In both screening phases articles, we included papers that met the inclusion criteria for data extraction. Importantly, conflicting papers were discussed by the lead author and the two co-authors, ensuring that all relevant studies were included in the systematic review (41, 42).

Data extraction

The data were summarised using a standardised data abstraction form in a structured narrative approach. The following information regarding the study was extracted: the author, year, country, methodology, sample and the barriers to screening diabetes distress. Before data extraction, the Joanna Briggs Institute (JBI) Critical Appraisal and the MMAT appraisal tools were used to assess the included studies' internal validity so that the articles included in the review were not biased (43, 44). In essence, the quality assessment of the articles was utilised to evaluate the methodological quality to inform further analysis in the review.

Table 2:

Characteristics of the Included Studies

Citation/study	Country	Method	Sample	Barriers
Brodar <i>et al.</i> (2023) (51)	USA	Qualitative- semi-structured interviews	Medical providers (n = 11)	(1) Lack of time (2) lack of accessibility to mental health services. (3) Lack of knowledge
McMorrow <i>et al.</i> 2022 (52)	Australia	Quantitative cross-sectional online survey	General practitioners (n = 240)	(1) Lack of motivation (2) Lack of knowledge (3) lack of time
Mach <i>et al.</i> (2023) (49)	Canada	Mixed-methods-focus group sessions and structured survey	Nurses and Registered Dietitians (n = 7)	(1) patients' denial of their diabetes distress (2) lack of accessibility to mental health services. (3) lack of knowledge (4) Lack of time
Yared <i>et al.</i> (2020) (50)	Canada	Quantitative-Survey	Endocrinologists and Diabetes educators (n = 45)	(1) lack of time (2) lack of knowledge

Results

Study selection

A total of 1579 citations were identified through a database search. After removing 745 duplicates, we screened 834 articles by title and abstract, leaving seven articles for full-text screening. Through full-text screening, four articles were eligible for inclusion. We also searched the references of the included papers, which yielded one extra study that fulfilled the inclusion criteria. We excluded four studies from our review (45, 46, 47, 48). A PRISMA flowchart of the study selection is presented in Figure 1.

Study characteristics

The papers included in the review were published between 2020 and 2023, and the geographic range of the manuscripts only covered high-income countries. Two studies were carried out in Canada (49, 50), one in the USA (51) and one in Australia (52). One quantitative study was conducted in a medical centre involving eleven medical providers utilising semi-structured interviews to collect data (51). Another article was a mixed-methods study in two diabetes clinics with seven nurses and registered dietitians collectively, and data collection was through structured surveys and focused group sessions (49).

One of the Canadian studies (50) used a quantitative survey of 45 clinicians who were endocrinologists and diabetes educators based in 13 clinics. Lastly, a quantitative cross-sectional online survey was conducted among 240 general practitioners listed on a medical publishing company database (52). An overview of the included studies is provided in Table 2.

Quality assessment

The quality appraisal of the two quantitative studies (50, 52) and the one qualitative study (51) was conducted with the aid of the appropriate JBI appraisal tool. The MMAT quality assessment tool for the mixed-methods approach was utilised to appraise the mixed-method study (43). These appraisal tools provided a structural framework for assessing the rigour of selected studies (53, 54). This appraisal aimed to establish whether the quality of studies impacted their contribution to the overall synthesis. Further, studies were not excluded based on their appraisal quality. Instead, the appraisal process was utilised to test the contributions of the articles in answering the research question. Overall, the quality of the included studies was good. Table 3 outlines the methodological assessment scores of the included studies. Only one study, Brodar *et al.* (51), did not meet all the criteria. The two areas missing were a statement locating the researcher culturally or theoretically and the influence of the researcher on the research, and vice-versa.

Barriers to screening and diagnosing diabetes distress

The evidence synthesis of the analysed barriers to screening diabetes distress includes lack of knowledge, lack of time, lack of accessibility to mental health services, lack of motivation and patients' denial of their diabetes distress, as illustrated by theme in Table 4.

Lack of knowledge

The lack of knowledge on diabetes distress was cited as a barrier to screening the condition (49, 50, 51, 52). The participants reported a lack of understanding of diabetes distress, the benefits of screening and the use of psychosocial assessment tools. These were said to be the main reasons why clinicians were not assessing diabetes distress:

“I’m aware of PAID, and I’m sure there are other diabetes distress scores with good evidence for validity, but I have no experience with them and so they aren’t part of my usual routine in diabetes management.” (McMorrow et al. 2022, Page 695)

“The PAID brought out more topics in conversation. I had a patient who, I thought only needed the basic nutrition information, but during the conversation, the patient said that he wanted to know more detailed information.” (Mach et al. 2023, Page 54)

“I currently do not see the benefit of using this scale in my practice” (Yared et al. 2020, Page 517)

“No one talks about it in the context of patient care.” (Brodar et al. 2022, Page 98)

Table 3:

Assessment of methodological quality of included studies.

Completed JBI checklist										
Qualitative citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Brodar <i>et al.</i> (2023) (51)	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Y Yes, N No, ? Can't tell, N/A Not applicable.										
Completed JBI checklist										
Quantitative citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8		
McMorrow <i>et al.</i> (2022) (52)	Y	Y	Y	Y	N/A	N/A	Y	Y		
Yared <i>et al.</i> (2020) (50)	Y	Y	Y	Y	N/A	N/A	Y	Y		
Y Yes, N No, ? I can't tell, N/A Not applicable.										
Completed MMAT checklist										
Mixed-method citation	S1	S2	Q1	Q2	Q3	Q4	Q5			
Mach <i>et al.</i> (2020) (49)	Y	Y	Y	Y	Y	Y	Y			
Y Yes, N No, ? Can't tell										

Lack of time

Healthcare workers cited the lack of time as a hindrance in screening diabetes distress (49, 50, 51, 52). Some healthcare workers relayed that it was time-consuming to conduct the psychosocial assessment in patients with DM:

“Many of these patients have comorbidities. We’re barely able to make time to address that.” (Brodar et al. 2022, Page 98)

“Time factor. Too many other diabetic complications to manage.” (McMorrow et al. 2022, Page 695)

“The patient may want to spend the whole time talking about a different issue and delay the main goal of the appointment.” (Mach et al. 2023, Page 54)

“Lack of time” (Yared et al. 2020, Page 517)

Lack of accessibility to mental health services

Another factor that impeded the evaluation of diabetes distress was the lack of mental health services to refer clients diagnosed with the condition (49, 51). When there was a need to refer diagnosed patients with diabetes distress, outside mental services were used:

“You’re opening up a big can of worms...do we have support systems?” (Brodar et al. 2022, Page 98)

“There is still a disconnect regarding referrals because they may have to go outside for help.” (Mach et al. 2023, Page 54)

Table 4:
Barriers to screening and diagnosing diabetes distress.

Barriers	Data extracts quotes from health professionals	Citations			
		(49)	(50)	(52)	(51)
Lack of knowledge of diabetes distress	<p>“I’m aware of PAID, and I’m sure there are other diabetes distress scores with good evidence for validity, but I have no experience with them and so they aren’t part of my usual routine in diabetes management.”</p> <p>“No one talks about it in the context of patient care.”</p> <p>“The PAID brought out more topics in conversation. I had a patient who I thought only needed the basic nutrition information, but during the conversation, the patient said that he wanted to know more detailed information.”</p> <p>“I currently do not see the benefit of using this scale in my practice.”</p>	X	X	X	X
Lack of time	<p>“Many of these patients have comorbidities. We’re barely able to make time to address that.”</p> <p>“Time factor. Too many other diabetic complications to manage.”</p> <p>“The patient may want to spend the whole time talking about a different issue and delay the main goal of the appointment.”</p>	X		X	X
	“Lack of time”		X		
Lack of accessibility to mental health services	<p>“You’re opening up a big can of worms...do we have support systems?”</p> <p>“There is still a disconnect regarding referrals because they may have to go outside for help.”</p>	X			X
Lack of motivation	“I do not receive enough reimbursement for diagnosing diabetes distress.”			X	
Patients' denial of their diabetes distress	<p>“Patients deny their diabetes distress and are unwilling to seek professional help.”</p> <p>“50 % of the time, patients are unwilling to talk about it.”</p>	X			X

X denotes a barrier.



Lack of motivation

The lack of motivation was viewed as a barrier to screening for diabetes distress in the clinical area (52).

“I do not receive enough reimbursement for diagnosing diabetes distress.”
(McMorrow et al. 2022, Page 695)

Patients' denial of their diabetes distress

Finally, healthcare workers expressed that patients were unwilling to speak about diabetes distress (49):

“Patients deny their diabetes distress and are unwilling to seek professional help”
(Mach et al. 2023, Page 54)

“50 % of the time, patients are unwilling to talk about it.” (Brodar et al. 2022, Page 98)

Discussion

The key finding of this systematic review is that there is very little literature on clinicians' barriers to screening and diagnosing diabetes distress in people with Type 1 and 2. In this review, only four studies met the inclusion criteria from over 1579 citations in the primary biomedical bibliographical databases. This review has identified five barriers related to the assessment of diabetes distress by healthcare professionals. However, with the limited literature, it is challenging to generalise the findings to the broader population. At the same time, Africa has experienced an exponential increase in people diagnosed with diabetes in the past ten years (1). Also, diabetes distress is a growing public health problem in the continent, but there is limited literature on the psychosocial aspect of DM (55).

Interestingly, the prominently reported barriers in the review were the lack of knowledge and time (49, 50, 51, 52) despite studies employing varying methodologies, data collection tools, and study populations. Likewise, previous studies assessing healthcare workers' barriers to screening for other conditions reported similar barriers (56, 57).

Notably, healthcare workers revealed that the deficiency in knowledge of diabetes-related distress was attributed to inadequate training on diabetes distress and screening tools. If the knowledge gap of diabetes distress is not effectively addressed in the clinical area, the condition will remain underdiagnosed and a dreadful burden to people with DM. Introducing training programs on diabetes distress assessment tools could scale up the psychosocial screening of diabetic patients by clinicians. Currently, the psychosocial assessment tools are filled during clinical consultations, which lengthens the consultation period. As a result, health professionals prioritise the medical side of care and neglect the psychosocial assessment of patients with diabetes. This omission subjects patients to sub-optimal care since psychosocial conditions like diabetes-related distress are left undiagnosed and untreated, yet the psychosocial care guidelines by the American Diabetes Association endorse the routine screening of diabetes distress in clinical settings (58). Providing extra healthcare workers to assist with screening diabetes distress can facilitate the routine psychosocial assessment of clients in primary and specialised diabetic clinical settings. Future research should explore the training needs of health professionals in resource-poor countries and determine effective mechanisms for skilling up clinicians and strengthening the wider healthcare workforce.

Another identified barrier is the lack of mental health services (49, 51). The clinicians reported a disconnect in patient care, alluding to the unavailability of mental health services facilities within primary and specialised diabetes departments. Then, patients are referred to unfamiliar settings, resulting in failed appointments. Eventually, healthcare workers neglect to assess for diabetes distress. Similarly, previous studies on mental healthcare revealed that distance constraints hindered the accessibility to mental health services in communities (59, 60). Therefore, this emphasises the urgent need for a



strengthened referral system to mental health institutions. This recommendation is congruent with the World Health Organization's target to increase access to mental health care for 100 million more people by 2030 (61). Moreover, a long-term plan of introducing mental health services within diabetic departments could be a solution to improve the quality of life of diabetic patients. Thus, African countries should try improving the screening and management of diabetic-specific distress.

Additionally, one study (49) indicated that patients' denial of their diabetes distress was a barrier among nurses and registered dietitians to screening for the condition. While another study (51) established that patients are unwilling to talk about diabetes distress. Likewise, several studies investigating terminal illnesses revealed that denial of the condition is a widespread reaction among patients (62, 63, 64). The study established that the denial was ascribed to the discomfort of being diagnosed with diabetes distress. In the staff focus groups, the clinicians revealed that the extent of denial results in these clients' unwillingness to seek professional assistance. Subsequently, the health workers disregard the screening and provision of psychosocial assistance to these patients. Hence, investing in patients' health education programmes can effectively raise awareness of diabetes distress in people with DM.

Finally, the lack of motivation by healthcare workers was reported as an impediment to assessing diabetes-related distress (52). This finding is consistent with prior research that revealed the challenge of lack of motivation among healthcare workers in the workplace (65, 66). In the online surveys, the study population of clinicians revealed that financial compensation and social influence could increase their enthusiasm for psychosocial screening in diabetic patients. This suggests that motivation enables healthcare professionals to integrate diabetes distress screening in routine care for diabetes management in healthcare systems. Providing reasonable remuneration and rewards for

clinicians in diabetic departments could improve the psychosocial care of patients.

Research to date on diabetes distress has been located in high-income countries, making the application of results in Africa challenging. For middle-income and low-income countries to achieve the integration of psychosocial care of diabetes patients in their healthcare systems, future research needs to focus on investigating the hindrances to routine screening for diabetes distress. These future investigations will help create awareness and ensure an understanding of the clinicians' barriers to screening for diabetes-related distress specific to these countries. Subsequently, it will enable policymakers and health providers to enact policies and specialised training programs that will improve the routine management of diabetes in clinical settings.

Limitations and strengths

The review is restricted to the geographic representation of the included studies since it only found studies from a few high-income countries. Therefore, the review findings may be biased because they do not represent low-income countries. Moreover, only studies published in English were included in the review due to the unavailability of translation resources. Also, papers published in other languages besides English were excluded from the review. Subsequently, this has implications in the generalisability of findings drawn in this systematic review to countries where the English language is not a medium of instruction. The strengths of the review are its novelty, the systematic search of relevant papers and reporting findings using the PRISMA framework. Additionally, the snowballing search strategy was applied to identify papers from the reference list of articles that met the review's inclusion criteria, and they were screened to guarantee that relevant papers were not excluded.

Conclusion

This systematic review provides an initial framework of the constraints restricting



clinicians from screening and assessing diabetic distress in the clinical area. Unquestionably, the available evidence indicates that routine screening and treatment of diabetes distress can improve the quality of life of people with diabetes. Future studies in middle-income and low-income countries are needed to understand the gaps in the screening of diabetes distress. Further, understanding the barriers to psychosocial assessment in diabetic patients is critical in assisting policymakers and health providers in formulating policies and specialised training programs to improve diabetes management in the clinical area. Lastly, the review suggests that educating diabetic patients on diabetes distress will create awareness of the importance of psychosocial and mental health in people with diabetes.

Acknowledgements. The primary author would like to acknowledge the Foreign, Commonwealth and Development Office (FCDO) for the Chevening Scholarship award to study at Bournemouth University in the UK.

Availability of data statement

The papers in this review are available online, peer-reviewed and published. Should the reader experience difficulty accessing the individual papers, copies are available from the first author.

Ethical permission. No ethical considerations are associated with this review since data was sourced from published articles.

Source of funding. The review itself was not funded.

Declaration of competing interest. The authors have no conflict of interest to declare.

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