Research Article

The Paradox of Low Diabetes Distress Scores and Poor Glycaemic Control: Exploring Emotional Disengagement Using the Modified Diabetes Distress Scale

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Abstract

Background: Diabetes distress concerns the emotional burden of living with and managing diabetes. Although higher distress is often associated with less favourable glycaemic outcomes, a low distress score does not necessarily explain how a person engages with treatment. A 2026 Indian study of a 20-item Modified Diabetes Distress Scale (mDDS) reported that 32% of its low-distress subgroup had glycated haemoglobin (HbA1c) above 10%. The authors suggested possible emotional disengagement or burnout. This interpretation is clinically intriguing but remains unproven. Objective: To critically examine the low-distress/high-HbA1c discordance reported in the mDDS study; assess the published scale's items, scoring and interpretive limits; and develop a clinically cautious framework for investigating emotional disengagement in Indian adults with type 2 diabetes. Approach: This critical narrative review and methodological appraisal uses the published mDDS article as its index source and situates its findings alongside established diabetes-distress measures, Indian evidence, and contemporary psychosocial-care guidance. No individual-participant data or new psychometric analyses were available. Synthesis: The original report describes a mixed type 1/type 2 diabetes cohort (n=300), but its low-distress finding is not stratified by diabetes type. Its reported categories, mean score and several statements about item composition are internally inconsistent; therefore, the 32% figure should be treated as a reported, hypothesis-generating observation rather than a validated prevalence estimate of disengagement. The printed mDDS addresses emotional burden, affordability, clinician communication, health literacy, family support and daily-life disruption. Yet no item directly measures disengagement, and some positively worded questions require explicit scoring rules. Low distress with high HbA1c may coexist with adaptive acceptance, avoidance, reduced perceived vulnerability, emotional exhaustion, regimen inadequacy or financial and structural constraints. HbA1c alone cannot distinguish these explanations or establish adherence. Conclusion: Discordance between distress scores and glycaemic outcomes warrants explanation, not diagnostic labelling. Before mDDS-based phenotypes or treatment pathways are adopted, the questionnaire and scoring require transparent specification and independent validation against established distress and engagement measures. A prospective, mixed-methods Indian study could determine whether emotional disengagement constitutes a distinct and clinically useful construct in this context.

Keywords: Modified Diabetes Distress Scale; mDDS; diabetes distress; HbA1c; glycaemic control; emotional disengagement; diabetes burnout; self-management; India.

1. Introduction

The clinical vocabulary of diabetes is dominated by numbers: fasting glucose, HbA1c, blood pressure, estimated glomerular filtration rate and lipid concentrations. These indices are essential, yet none directly describes the lived burden of treatment. Individuals must repeatedly make decisions about medicines, food, activity, monitoring and appointments, often within financial and family constraints. Diabetes distress gives a name to the emotional burden arising from these diabetes-specific demands [2,12]. It is related to, but distinguishable from, major depression and general anxiety.

Studies have demonstrated an association between diabetes distress, self-management and glycaemic outcomes, although the relationship is neither deterministic nor uniform [4,17]. A patient may be distressed and highly engaged in care; another may report little distress while HbA1c remains substantially above the individualised target. This discordance is clinically informative because the two observations describe different domains. A distress score reflects a response to questions about emotional burden. HbA1c reflects glycaemic exposure over preceding weeks to months. Neither is a direct measurement of psychological engagement, medication taking or the adequacy of the prescribed regimen.

Khan and Shaikh's 2026 report, *The Need for Development of a Modified Diabetes Distress Scale (mDDS) in India*, provides a concrete Indian example [1]. Among 300 adults with type 1 or type 2 diabetes recruited in Bhagalpur and Mumbai, the authors reported that approximately one-third of those classified as minimally distressed had HbA1c above 10%. They proposed that some patients might be emotionally disengaged rather than resilient. The question is worth pursuing, particularly in settings where care may be interrupted by limited access, out-of-pocket costs, variable health literacy and uneven continuity of counselling [5,6,9–11,16]. Yet a compelling explanation should not be mistaken for an established diagnosis.

This article revisits the mDDS publication at the level of its actual questionnaire, numerical reporting and clinical interpretation. Its argument is that low diabetes distress, emotional disengagement and poor glycaemic control should be conceptualised as distinct, potentially interacting dimensions. Clarifying their relationship may be more valuable than assigning psychological labels solely on the basis of an apparently paradoxical laboratory result.

2. Purpose, Scope and Approach

This article is a critical narrative review with a focused methodological appraisal of the published mDDS study, not a systematic review, secondary analysis or validation study. The index source is the January 2026 publication by Khan and Shaikh [1]. The present examination considers its questionnaire (published on journal pages 163–165), methods and findings (pages 166–168), interpretive matrix and clinical recommendations (pages 169–170), and stated limitations (page 170). The appraisal is based on publicly reported aggregate data and item wording; original participant records, scoring code, factor-loading tables and raw psychometric results were not available.

To place the index report in context, this review uses foundational DDS literature [2–4], an Indian systematic review and studies of contextual barriers [5,6,9,10], validation work on a type 2 diabetes-specific instrument [7,8], international psychosocial-care guidance [12,14,15] and selected intervention evidence [13]. A recent South Asian clinical review [16] provides additional regional context. These sources were selected for relevance and are not claimed to constitute an exhaustive literature search. Statistical checks performed here are simple arithmetic consistency tests of the numbers printed in the index publication; they do not reproduce or correct its analyses.

3. Distress, Engagement and Glycaemic Control: Different Constructs

The Diabetes Distress Scale developed by Polonsky and colleagues contains 17 items addressing emotional burden, physician-related distress, regimen-related distress and interpersonal distress [2]. The widely used DDS-17 asks respondents to rate the severity of diabetes-related problems on a six-point scale. Fisher and colleagues investigated meaningful DDS-17 mean-item thresholds, rather than simple raw-score cut-offs [3]. Those thresholds cannot be transferred to an independently modified instrument without validation.

Diabetes distress describes *felt difficulty*: worry about complications, frustration with self-care or feeling overwhelmed by treatment. Engagement describes participation and attention: discussing concerns, taking part in decisions, using available monitoring information and attempting prescribed care. Adherence is narrower, referring to the degree to which medication or other agreed actions are actually implemented. Glycaemic control represents a metabolic outcome influenced by all these processes, but also by physiology, regimen effectiveness and access to treatment. Depression, demoralisation, avoidant coping and diabetes burnout overlap conceptually with these domains but are not synonyms.

This distinction matters in both directions. A person with high distress may remain vigilant, attend visits and follow treatment carefully; distress does not necessarily imply disengagement. A person with low distress may have strong coping skills, or may be less aware of risk, reluctant to discuss problems, fatigued by past attempts at treatment, or unable to afford medicines. Equating HbA1c above target with 'non-compliance' would ignore therapeutic inertia, disease progression, affordability, competing demands and other causes of persistent hyperglycaemia. Moreover, the absence of a self-reported emotion cannot demonstrate that the emotion has been suppressed or denied. An independent measure of the proposed phenomenon is required.

4. What the Published mDDS Study Actually Reports

4.1 Design and central observation

The index study describes a two-centre, convenience-sampled, interviewer-administered, cross-sectional assessment of 300 adults with type 1 or type 2 diabetes. It reports a mean age of 45 years, mean diabetes duration of 3.2 years, and mean HbA1c of 9.2%. Its 20-item mDDS is scored from 1 to 5 per item, making the theoretical total range 20–100 [1]. The abstract classifies 55% as having minimal distress (total score below 25), 36% as moderate (46–70), and 9% as high (71–100). The authors state that 32% *of participants classified as minimally distressed* had HbA1c exceeding 10% [1].

This final denominator is crucial. If all percentages are taken literally, 55% of 300 corresponds to approximately 165 people, and 32% of that subgroup corresponds to approximately 53 people, or 18% of the full cohort. This calculation illustrates the distinction between a **within-subgroup proportion** and a **whole-cohort prevalence**; it does not reconstruct the study's individual records. The paper's later phenotype table also presents 32% under a low-distress/high-HbA1c category without clarifying whether the denominator is the whole sample. A future analysis should publish the underlying 2 × 2 cell counts and denominators.

The source reports an association of low mDDS scores with high HbA1c in some participants. It does not provide a validated independent diagnosis of disengagement in those participants, and its mixed diabetes-type sample does not justify treating the figure as a type 2 diabetes-specific estimate.

4.2 Internal consistency and the limits of inference

Several discrepancies in the printed report should temper numerical interpretation. The abstract's categories leave no reported group in the 25–45 'mild' range, despite the questionnaire's separate description of this category. Elsewhere, 'moderate' is described as 30–60 rather than 46–70. Most importantly, the stated distribution is mathematically incompatible with the reported mean mDDS score of 30: at the lowest possible scores for the groups described (20, 46 and 71), the weighted mean would already be $0.55 \times 20 + 0.36 \times 46 + 0.09 \times 71 =$ **33.95**.

Rounding of whole-percentage group sizes cannot plausibly explain this gap. Either the category proportions, threshold labels, reported mean or scoring description requires correction.

The article describes a 20-item scale while also suggesting that eight culturally anchored items were added to DDS-17, a process that would produce 25 rather than 20 items unless existing items were removed or replaced. The narrative refers to socio-religious items on fasting and festival foods, but the 20 items reproduced in the published questionnaire do not explicitly ask about religious fasting.

The questionnaire headings organise the items as emotional, financial, literacy/educational, socioeconomic and general stress sections, while the methods describe five different subscales. A complete domain-to-item key is not provided [1].

The printed methods describe interviews averaging about 18 minutes, whereas the clinical pathway section proposes administration in about two minutes; the latter feasibility estimate is not reconciled with the reported study process. The article also discusses counselling-related HbA1c improvement despite describing a cross-sectional design without a controlled intervention arm. Those statements should not be treated as evidence that mDDS-guided counselling improves HbA1c. Table 1 identifies the principal issues and the clarification each requires.

Table 1. Source-reporting issues relevant to interpreting the mDDS finding

Published feature	Appraisal	What is needed before clinical use
55% minimal, 36% moderate, 9% high; mean total score 30	The stated thresholds imply a minimum possible mean of 33.95; the mild category is unaccounted for.	Corrected category counts, full score distribution, means and dispersions.
'Moderate' described as 46–70 in one section and 30–60 elsewhere	Category labels are not consistent throughout the article.	One pre-specified, validated scoring key.
DDS-17 described as the basis, with eight additional items; 20 items printed	Item retention, deletion or replacement is not reported clearly.	Full item-development history and version-controlled questionnaire.
Five conceptual domains asserted, but printed headings and items differ	The factor-to-item structure is not reproducible from the paper.	Complete domain allocation, factor loadings and scoring direction.
Religious fasting emphasised as a major cultural domain	Direct fasting items are not visible in the published 20-item instrument.	Exact items actually administered and linked domain scores.
32% low-distress subgroup with HbA1c >10%; phenotype matrix also lists 32%	Denominators and the mutually exclusive cell counts are unclear.	Cross-tabulations by HbA1c, distress category and diabetes type.
'Low distress + high HbA1c' interpreted as burnout or denial	Such states were not independently established by a validated criterion.	Direct measures of avoidance, burnout, engagement and external barriers.

Source: critical appraisal of Khan and Shaikh [1]. The observations above are based on the published text and do not imply access to the original dataset.

These discrepancies weaken the strength of the specific prevalence and phenotyping claims; they do not eliminate the value of studying why distress–glycaemia discordance occurs.

5. Re-reading the 20 mDDS Items: What They Can and Cannot Reveal

A close reading of the printed instrument helps clarify both its clinical appeal and its inferential limits. Its principal strength is breadth: questions invite discussion about feeling overwhelmed, guilt, fear of complications, medication access, treatment costs, clinician interaction, family support, health literacy, working life, food preparation and social relationships [1]. These topics may illuminate why self-management is difficult even when emotional distress is not openly expressed.

Yet a scale's content must match the construct it claims to measure. Some items appear to assess emotional difficulty directly; others measure exposure to constraints, information-seeking, confidence or perceived support. Mixing these dimensions within one total score is not inherently inappropriate, but it requires a justified measurement model and transparent scoring rules.

Two positively framed questions—the patient's confidence in the benefits of glycaemic control (item 12) and perceived adequacy of family support (item 15)—could run in the opposite conceptual direction from distress. Item 11 measures information-seeking frequency; high frequency may indicate engagement, worry, access to technology or several possibilities. Without reverse-coding rules and cognitive testing, the meaning of its contribution to a summed 'distress' score is unclear.

Table 2 maps the printed items to the clinical issues they might raise. This is an interpretative mapping created for the present review, **not** an assertion that the authors validated these item groupings or subscales.

Table 2. Item-level interpretative map of the published 20-item mDDS

Printed item number(s)	Main content, paraphrased	Potential clinical value	Interpretation limit
1–4, 20	Overwhelm, guilt, concern about complications, isolation, fear/anger	Elicit explicitly experienced emotional burden.	Low endorsement does not establish resilience or disengagement.
5–6, 9	Concern about medicine availability, treatment expense and lost income	Identify access and financial pressures.	External constraints are not equivalent to avoidant coping.
7, 10	Perceived clinician responsiveness and difficulty understanding advice	Identify communication failures and possible health-literacy needs.	Item 10 combines several ideas in one question.
8, 15, 19	Emotional support and family/relationship consequences	Explore interpersonal resources and tensions.	Item 15 is positively framed; direction needs explicit scoring.
11–12, 14	Information seeking, confidence in knowledge, age/literacy burden	Explore knowledge, perceived efficacy and self-management capacity.	Frequency of information seeking is not a pure distress indicator.
13, 16–18	Rural/urban or class-related access, work-life disruption, glucose variability, meal preparation	Identify contextual and regimen burdens.	These items do not directly establish disengagement.

Item numbers refer to the questionnaire printed in Khan and Shaikh [1], journal pages 163–164. Wording is paraphrased; no new mDDS subscale is proposed or validated here.

5.1 The construct still missing

No item in the printed questionnaire directly asks whether the person deliberately avoids reviewing glucose values, has withdrawn from decision-making, has abandoned previously attempted behaviours because further efforts seem futile, or reports no emotional concern because diabetes no longer receives attention. Such behaviours and experiences could be explored through a supplementary interview, but they cannot be deduced from low total mDDS scores. Nor can a single question about feeling depressed distinguish diabetes-specific distress from a depressive disorder.

5.2 'Low' scores can arise for different reasons

A person might score low because diabetes genuinely causes little emotional difficulty. Another might interpret the questions differently because of language, normalisation of chronic illness, social desirability, limited symptom awareness or the interview setting. A third might face large financial obstacles but still report few negative feelings. These are clinically distinct pathways to similar numerical results. Translation alone does not ensure semantic equivalence across populations; cognitive interviews and measurement-invariance testing would be needed to determine whether item meaning is comparable across Hindi, Urdu, Marathi, English and other Indian languages.

6. Competing Explanations for the Low-Distress/High-HbA1c Pattern

A useful account of the paradox begins with *explanatory plurality*. At least five interpretations should be considered before assigning a psychological label.

6.1 Adaptive acceptance or resilience

Some individuals can recognise the seriousness of diabetes while maintaining emotional equilibrium. They may take medicines, attend visits and seek adjustments when needed, yet still have high HbA1c because the regimen is inadequate, treatment targets have changed or biological factors limit control. In this situation, low distress is a resource to preserve, not a concealed deficit.

6.2 Reduced perceived vulnerability or limited understanding

People whose diabetes is relatively asymptomatic may underestimate the significance of prolonged hyperglycaemia or misunderstand the meaning of HbA1c. Low concern could then follow from inaccurate illness perceptions rather than emotional withdrawal. This calls for clear explanation and shared planning rather than a diagnosis of burnout.

6.3 Avoidant coping and possible emotional disengagement

Repeated disappointment, fear of adverse results or exhaustion with complex routines may make glucose monitoring, appointments or conversations about treatment emotionally aversive. Some individuals may respond by avoiding information or withdrawing from self-management tasks. Low reported distress might coexist with this pattern, but the hypothesis requires independent behavioural and qualitative evidence. It is not established merely by combining an mDDS score with HbA1c.

6.4 Treatment burden and depression or demoralisation

Diabetes burnout, demoralisation and depressive symptoms can include hopelessness, reduced energy or diminished initiative, but are not interchangeable diagnoses. A patient may have few diabetes-specific worries yet experience depression or fatigue from other causes. Established screening and clinical assessment remain necessary where symptoms, functional impairment or risk concerns are present [12,14].

6.5 Constraints despite willingness to engage

An individual may understand the illness and wish to follow treatment, yet be unable to purchase medicine, obtain strips or sensors, follow prescribed dietary changes, take time away from work or access appropriate clinical review. A high HbA1c under these conditions indicates a need to assess care delivery and affordability, not to presume non-adherence. Indian qualitative studies have documented how financial pressures, regimen complexity, uncertainty about advice and family circumstances affect self-care [9,10].

These mechanisms are not mutually exclusive. A patient may simultaneously experience effective emotional acceptance, inadequate therapy and financial barriers. A conceptually strong model should allow multiple causes rather than forcing all low-score/high-HbA1c presentations into a single 'denial' category.

7. A Proposed Multidimensional Interpretation Framework

A two-axis matrix of distress and glycaemia can be clinically useful as a *prompt for further assessment*. The axes should remain descriptive, with glycaemic targets individualised to the patient rather than imposed as universal thresholds. Table 3 sketches possible lines of enquiry. It is not a validated diagnostic classification or a prescribing algorithm.

Table 3. Interpretation prompts when diabetes distress and glycaemia are considered together

Reported distress	Glycaemic status	What to explore	What not to infer
Low	Within individualised target	Effective coping, treatment satisfaction, remaining needs.	That emotional support is never needed.

High	Within individualised target	Fear of complications, regimen burden, hypoglycaemia, relationships.	That self-management is poor.
High	Above individualised target	Regimen demands, depression/anxiety, cost, access and treatment adequacy.	That distress alone caused hyperglycaemia.
Low	Above individualised target	Understanding, monitoring, avoidance, affordability, physiological and regimen factors.	That burnout, denial or disengagement is proven.

The key conceptual advance is a third dimension: **engagement and capacity to act**. Once measured separately, low-distress/high-HbA1c cases can be investigated without assuming a uniform phenotype. For instance, high engagement despite elevated HbA1c suggests a different clinical response from documented avoidant behaviour; inability to obtain medication requires a different intervention again. In research, engagement should be operationalised using multiple indicators—not inferred from metabolic status alone—and should account for whether the proposed actions were feasible and agreed upon.

8. Why Indian Contextual Factors Matter

The Indian setting is especially relevant because diabetes care is carried out within diverse household structures, employment arrangements, financial circumstances and healthcare systems. The ICMR-INDIAB study documented major regional and population differences in metabolic risk, reinforcing the need to avoid uniform assumptions [11]. An Indian systematic review reported substantial variation in diabetes-distress prevalence across studies using DDS-17, with marked heterogeneity [5]. A primary-care study in Bihar further demonstrates that diabetes distress can be investigated beyond metropolitan specialist settings [6]. These results provide a rationale for geographically and socially diverse sampling, not an argument that all Indian patients experience the same cultural pressures.

Family involvement can provide practical assistance and encouragement, but may also bring unsolicited monitoring, criticism about food or competing treatment advice. Financial pressures may require patients to ration medicines or postpone tests. Health literacy and the ability to understand advice influence the feasibility of self-management. A qualitative investigation in India documented barriers involving regimen complexity, financial constraints and stigma-related concerns [9]. Another study in rural South India identified uncertainty about targets and challenges in implementing recommendations [10]. A 2026 South Asian clinical review likewise highlighted family strain, out-of-pocket expenditure and fragmented psychosocial care [16].

These observations support the mDDS authors' motivation to broaden inquiry beyond conventional distress domains. At the same time, sociocultural relevance should be demonstrated rather than presumed. If religious practices, family expectations or financial strain are proposed as independent factors, the instrument must contain clearly specified items, appropriate response options and a validated domain structure. Culturally responsive assessment should avoid stereotyping based on religion, gender, literacy or residence.

9. Comparison with Established Distress Measures

The existing DDS-17 has a defined item structure and substantial psychometric literature [2,3]. A newer Type 2 Diabetes Distress Assessment System (T2-DDAS) reflects efforts to broaden the assessment of diabetes-specific distress [8]. Sharma and colleagues evaluated its psychometric properties among 408 Indian adults with type 2 diabetes and reported good internal consistency and supportive construct-validity analyses [7]. This does not establish universal superiority of T2-DDAS, but provides a relevant Indian comparator for prospective evaluation of mDDS.

An independent mDDS validation programme should first clarify the construct being measured. If the tool is intended to estimate **distress severity**, items about positive confidence, informational activity and social support must be handled in a psychometrically defensible manner. If it is intended as a broader **psychosocial barriers inventory**, its total score should not automatically be called a distress severity score. If the intended use includes **detecting**

emotional disengagement, the investigators must specify what constitutes disengagement, assess it with independent measures, and test discrimination beyond HbA1c and established scales.
Recommended analyses include item comprehensibility interviews; dimensionality and local dependence; internal consistency with appropriate coefficients; test–retest stability; differential item functioning by language, setting and diabetes type; convergent and discriminant validity; and prespecified thresholds linked to clearly defined clinical or patient-reported outcomes. Validation samples should be independent of those used for item refinement and threshold derivation. Comparative discrimination and calibration should be reported with confidence intervals, rather than relying exclusively on a statistically significant association.

10. Clinical Implications: Ask More, Label Less

The American Diabetes Association's 2026 Standards of Care recommend screening for diabetes distress at least annually and repeating assessment when treatment goals are not met or complications or major transitions occur [14]. The 2026 EASD guideline similarly emphasises routine conversation, validated tools, person-centred interpretation and accessible psychological support [15]. Neither guideline authorises diagnosing disengagement from a low distress score plus high HbA1c.

For a patient reporting little distress despite persistently elevated HbA1c, a practical response begins with reviewing the clinical picture: confirm the accuracy and trajectory of HbA1c, examine medications and titration, assess relevant comorbidities, and establish the patient's individualised target. The clinician should then enquire about what the patient understands, what is realistically possible and how treatment fits into daily life. An empathic conversation could ask what happens when glucose readings are disappointing, whether monitoring feels useful, what care has been difficult to obtain, and which treatment changes the person considers feasible. Such prompts explore possible avoidance without presuming it.

Where major distress, depression, cognitive difficulty or safety concerns emerge, appropriate assessment or referral is needed. Where practical barriers dominate, affordability, regimen simplification, education and access may be more useful than psychological labelling. Where genuine avoidant coping is documented, collaborative problem-solving and psychological or behavioural support may be considered. The REDEEM trial demonstrated reductions in diabetes distress and improvements in some self-management measures across intervention groups, **without a significant overall HbA1c improvement** [13]. Its results support taking psychosocial care seriously, but not attributing guaranteed metabolic benefit to brief counselling or to an unvalidated mDDS-guided pathway.

11. A Research Agenda Centred on the mDDS Paradox

The strongest next contribution would not be another cross-sectional report of a 'burnout percentage', but a programme designed to test whether emotional disengagement is measurable and predicts clinically meaningful outcomes independently of distress severity and structural barriers.

11.1 Phase I: Reconstruct and validate the mDDS

Publish the final questionnaire, original-item crosswalk, translations, scoring key, direction of each item, item-to-domain allocation and anonymised aggregate score distributions. Resolve discrepancies in the 2026 publication. Use cognitive interviews involving patients from diverse literacy, language and care settings, followed by independent psychometric testing. Evaluate the instrument against DDS-17 and/or T2-DDAS and patient-identified priority problems. A clearly specified instrument is a prerequisite for assessing its purported clinical utility.

11.2 Phase II: Examine discordant profiles without assigning diagnoses

Recruit adults with established type 2 diabetes from public and private facilities, including rural and urban clinics. Prespecify 'low' distress based on a validated scale and 'above-target' glycaemia based on the individual's clinical circumstances; high HbA1c thresholds may be used for descriptive sensitivity analyses, not as a surrogate for non-adherence. Measure treatment adequacy, cost and access, medication-taking behaviour, glucose-monitoring availability, illness perceptions, depressive symptoms, self-efficacy and patient-reported treatment burden. Interview a purposive sample of participants with different distress–glycaemia patterns to examine whether avoidant coping is actually present.

11.3 Phase III: Follow trajectories and test incremental validity

Repeat the psychological, behavioural and metabolic assessments over at least six to twelve months. Test whether baseline mDDS scores, supplemented by independently measured engagement indicators, predict later self-management and HbA1c beyond known clinical and socioeconomic factors. Validate any proposed classification in an external cohort. Where an intervention is subsequently trialled, allocate support according to the identified problem—treatment adjustment, access assistance, education or psychological care—and compare it with appropriate usual care. Outcomes should include both patient-reported well-being and metabolic measures.

Table 4. Research questions, evidence required and safeguards

Question	Essential evidence	Safeguard against overinterpretation
Is the mDDS internally coherent and reproducible?	Published item key, factor structure, reliability, translation testing.	Do not use unvalidated cut-offs as diagnostic thresholds.
Does low mDDS score independently predict disengagement?	Independent engagement and avoidance measures; blinded assessment where feasible.	Do not use HbA1c as the criterion for disengagement.
What explains high HbA1c among low-distress patients?	Regimen adequacy, medicines/access, biology, literacy, coping and depressive symptoms.	Avoid inferring motivation from a laboratory value.
Do proposed phenotypes predict later outcomes?	Repeated measures, external validation and calibration.	Distinguish prediction from causation.
Does mDDS-informed care help?	Prospective comparative intervention with predefined patient-centred and metabolic outcomes.	Do not claim benefit from cross-sectional data.

An especially valuable design would compare the proposed disengagement construct with *adaptive acceptance*: both may be associated with low reported distress, but they differ in treatment participation, illness understanding and experience of obstacles. Capturing those contrasts would give the concept discriminant validity rather than merely a memorable label.

12. Limitations and Interpretation Boundaries

This review is narrative and focused; it is not an exhaustive systematic search or quantitative evidence synthesis. Its methodological appraisal concerns the printed article and questionnaire, not the original raw data or an independently reproduced psychometric analysis. Some apparent discrepancies could be resolved by unpublished scoring instructions or corrected tables, but such corrections were not available for examination. The arithmetic inconsistency described above concerns the published figures as stated and should prompt clarification, not speculation about the underlying data.

Emotional disengagement is proposed here as a research construct. Its boundaries relative to depression, burnout, acceptance, demoralisation and avoidant coping require explicit empirical definition. The index study enrolled people with both type 1 and type 2 diabetes, while the research programme proposed here focuses on type 2 diabetes; its specific prevalence claims cannot therefore be transferred directly. Finally, distress–glycaemia discordance may change over time and with treatment circumstances; single-occasion measurements will not fully capture these dynamics.

13. Conclusion

The central observation motivating this review is straightforward: some people report little diabetes-related distress despite very poor glycaemic control. The clinical meaning of that combination is not straightforward. Low distress may represent healthy acceptance, limited awareness, avoidant coping or emotional exhaustion; high HbA1c may also arise from inadequate regimens, biological factors or barriers to implementing care. None of these explanations follows automatically from the two measurements alone.

The Indian mDDS publication makes this interpretative problem visible, and its attention to everyday financial, interpersonal and treatment pressures is valuable. However, the printed questionnaire and scoring contain unresolved inconsistencies. The study's proposed low-distress/high-HbA1c phenotype should therefore be treated as a hypothesis to investigate, not an established marker of burnout or denial.

The next step is transparent mDDS validation followed by prospective study of emotional experience, self-management engagement and the feasibility of treatment. In practice, the appropriate response to a low distress score alongside elevated HbA1c is neither reassurance alone nor suspicion of disengagement, but a careful, respectful enquiry into what the patient feels, understands, does and is able to do. **The goal is not to find distress where none is reported; it is to avoid mistaking a low distress score for a complete explanation of diabetes care.**

14. References

1. Khan MK, Shaikh F. The need for development of a Modified Diabetes Distress Scale (mDDS) in India: a cross-sectional study of its clinical relevance. The Review of Diabetic Studies. 2026;22(S1):160–173. doi:10.70082/b7s66v50.
2. Polonsky WH, Fisher L, Earles J, et al. Assessing psychosocial distress in diabetes: development of the Diabetes Distress Scale. Diabetes Care. 2005;28(3):626–631. doi:10.2337/diacare.28.3.626.
3. Fisher L, Hessler DM, Polonsky WH, Mullan J. When is diabetes distress clinically meaningful? Establishing cut points for the Diabetes Distress Scale. Diabetes Care. 2012;35(2):259–264. doi:10.2337/dc11-1572.
4. Fisher L, Mullan JT, Arean P, Glasgow RE, Hessler D, Masharani U. Diabetes distress but not clinical depression or depressive symptoms is associated with glycemic control in both cross-sectional and longitudinal analyses. Diabetes Care. 2010;33(1):23–28. doi:10.2337/dc09-1238.
5. Sinha R, Priya A, Sinha A, Rahman MHU. Prevalence of diabetes distress among type 2 diabetes mellitus patients in India: a systematic review and meta-analysis. Health Psychol Behav Med. 2024;12(1):2324091. doi:10.1080/21642850.2024.2324091.
6. Naik BN, Rao R, Verma M, et al. Prevalence of diabetes distress and its correlates among adults with type 2 diabetes mellitus in a primary health center of Bihar: a cross-sectional study. J Family Med Prim Care. 2024;13(8):3275–3281. doi:10.4103/jfmpc.jfmpc_96_24.
7. Sharma B, Tripathi P, Kadam N, et al. Psychometric validation of type 2 Diabetes Distress Assessment System in an Indian type 2 diabetes population. Sci Rep. 2024;14:32059. doi:10.1038/s41598-024-83681-0.
8. Polonsky WH, Fisher L, Hessler D, et al. Toward a more comprehensive understanding of the emotional side of type 2 diabetes: a re-envisioning of the assessment of diabetes distress. J Diabetes Complications. 2022;36(1):108103. doi:10.1016/j.jdiacomp.2021.108103.
9. Chittem M, Sridharan SG, Pongener M, Maya S, Epton T. Experiences of barriers to self-monitoring and medication-management among Indian patients with type 2 diabetes, their primary family-members and physicians. Chronic Illn. 2022;18(3):677–690. doi:10.1177/17423953211032251.
10. Rani MA, Shriraam V. Are patients with type 2 diabetes not aware or are they unable to practice self-care? A qualitative study in rural South India. J Prim Care Community Health. 2019;10:2150132719865820. doi:10.1177/2150132719865820.
11. Anjana RM, Unnikrishnan R, Deepa M, et al. Metabolic non-communicable disease health report of India: the ICMR-INDIAB national cross-sectional study (ICMR-INDIAB-17). Lancet Diabetes Endocrinol. 2023;11(7):474–489. doi:10.1016/S2213-8587(23)00119-5.

12. Young-Hyman D, de Groot M, Hill-Briggs F, Gonzalez JS, Hood K, Peyrot M. Psychosocial care for people with diabetes: a position statement of the American Diabetes Association. Diabetes Care. 2016;39(12):2126–2140. doi:10.2337/dc16-2053.

13. Fisher L, Hessler D, Glasgow RE, et al. REDEEM: a pragmatic trial to reduce diabetes distress. Diabetes Care. 2013;36(9):2551–2558. doi:10.2337/dc12-2493.

14. American Diabetes Association Professional Practice Committee. 5. Facilitating positive health behaviors and well-being to improve health outcomes: Standards of Care in Diabetes—2026. Diabetes Care. 2026;49(Suppl 1):S89–S128. doi:10.2337/dc26-S005.

15. Speight J, Hermanns N, Jensen W, et al. 2026 EASD evidence-based clinical practice guideline for assessing and managing diabetes distress among adults with type 1 diabetes or type 2 diabetes. Diabetologia. 2026;69:3344–3369. doi:10.1007/s00125-026-06840-0.

16. Raza SA, Raza SI, Irfan H, et al. Diabetes distress: what a clinician needs to know—a South Asian perspective. Best Pract Res Clin Endocrinol Metab. 2026;40(4):102116. doi:10.1016/j.beem.2026.102116.

17. Perrin NE, Davies MJ, Robertson N, Snoek FJ, Khunti K. The prevalence of diabetes-specific emotional distress in people with type 2 diabetes: a systematic review and meta-analysis. Diabet Med. 2017;34(11):1508–1520. doi:10.1111/dme.13448.

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