

Emotional support and Psychological Counselling in Problematic Diabetes: Does It Improve Outcomes?

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Abstract: In past decades clinicians have increasingly recognized the importance of psychological support for people with diabetes and their families, and many have recommended integrating psychological counselling into routine diabetes care. It is therefore important to consider whether psychological interventions in diabetes are effective in improving clinical outcomes. This research was limited to the literature reporting on the treatment of five common psychological problems known to complicate diabetes management: depression, eating disorders, anxiety/stress, self-destructive behaviour and interpersonal/family conflicts. A literature search was undertaken using MedLine and PsychInfo, including studies published in English peer-reviewed journals between 1990 and 2010, reporting on the effects of psychological interventions in the areas mentioned. Case studies were excluded from the review. Results In line with earlier reviews, relatively little empirical research was found to substantiate the effect of psychological counselling in complicated diabetes. Most studies are uncontrolled, and involve small samples. In total only 11 randomized controlled trials were identified. Indicate that **cognitive behaviour therapy** (CBT) is effective in the treatment of depression in Type 2 diabetes patients, both in reducing depressive symptoms and HbA_{1c}. Favourable effects have been observed in pilot studies applying CBT in the field of stress management, eating disorders and self-destructive behaviour, but future research should substantiate these preliminary findings. Behaviour family therapy proved beneficial in terms of resolving family conflicts, but did not impact glycaemic control. Conclusions Evidence to support the effect of psychological treatment in problematic diabetes is still scarce, due to limited research in this area. Suggestions are made to further develop psychotherapeutic research in diabetes care. We conclude that future research should gain from a behavioural medicine approach to diabetes, with close collaboration between diabetologists and psychologists.

[Khatoon, H. and Jha, S. **Emotional support and Psychological Counselling in Problematic Diabetes: Does It Improve Outcomes?**. *The International Journal of Interpretation, Observation and Analysis*, 2024; Volume 3, Issue 1:39-45 (July-September). ISSN 2349-0713, Peer-reviewed (online/offline), Refereed, Indexed and International Journal (Since 2013), Global Impact Factor: 5.776

Keywords: Emotional support, Psychological Counselling, Diabetes

Introduction:

The benefits of intensive diabetes therapy have been convincingly demonstrated in landmark studies [1, 2]. In clinical practice, however, a significant number of patients continue to experience persistent poor glycaemic control due to difficulties in adhering to treatment regimens [3]. This highlights the importance of addressing psychological and behavioral factors in diabetes care. Notably, much of the DCCT's success has been attributed to the psychological support provided to participants throughout the study [4].

To improve self-management and quality of life for individuals with diabetes, a bio-psychosocial treatment model has been proposed, integrating both medical and psychosocial care for patients and their families [5, 6]. While there is broad consensus that psychology plays an important role in diabetes management [7–10], the question remains as to how effective psychological counseling is in improving clinical outcomes.

The first meta-analysis on educational and psychosocial interventions in diabetes was published in 1987 [11]. Reviewing 95 controlled studies involving 7,421 patients, it reported a moderate but significant overall effect size of 0.51, with the greatest improvements in physical outcomes and knowledge gain, followed by psychological well-being and treatment compliance. However, only about a quarter of these studies were truly psychological in nature, classified as social learning/behaviour modification, relaxation training, or counselling.

Subsequent reviews echoed these findings. Rubin and Peyrot [12] concluded in 1990 that existing research demonstrated both the need for and the potential efficacy of psychosocial interventions, despite limited evidence. Similarly, Griffin et al. [13] in 1993 and McQuaid and Nassau [14] found relatively few controlled studies, especially in children, to support the efficacy of psychological counselling in improving metabolic control.

Hampson and Skinner [15], in a review of behavioural interventions for adolescents, reported small-to-medium overall effect sizes, with higher effects for metabolic outcomes compared to psychosocial measures. Importantly, studies grounded in a clear theoretical framework tended to be more effective.

In the most recent systematic review of self-management training for Type 2 diabetes, Norris et al. [16] confirmed its short-term effectiveness, but noted the lack of evidence for long-term benefits on glycaemic control, cardiovascular risk factors, complications, or quality of life. Overall, psychosocial interventions appear moderately effective in improving both metabolic and psychological outcomes, with no reported adverse effects. However, most reviewed studies could be classified as educational rather than purely psychological.

In recent years, diabetes education has shifted towards a more behavioural approach, drawing from psychological theories of counselling and behaviour change [17–19]. While there is growing demand for behaviour-oriented self-management programmes [20–22], these are not designed to address severe psychological barriers or disorders. Moreover, patients with significant psychosocial problems are unlikely to participate in such educational programmes.

Therefore, rather than combining a broad range of interventions, this review focuses specifically on literature addressing five major psychological problems common among people with diabetes and warranting professional intervention: (i) depression, (ii) stress and anxiety, (iii) eating disorders, (iv) self-destructive behaviours (such as recurrent DKA, severe hypoglycaemia, or chronic poor control), and (v) interpersonal/family conflicts. Identifying and effectively treating these issues is widely regarded as essential to improving both subjective well-being and clinical outcomes [12,24,25].

The question is not whether psychological counselling is beneficial in general—this is well established [26]—but whether it is effective for patients with diabetes experiencing these specific problems. Evidence from other medical fields suggests that a behavioural medicine approach can enhance both psychological and physiological outcomes [27,28], with cognitive behaviour therapy (CBT) emerging as a particularly effective method [29,30].

Methods:

A comprehensive literature search was conducted using the computerized databases *google* and *pubmed*. The search was restricted to English-language articles published in peer-reviewed journals between 1991 and March 2020. The search strategy involved cross-indexing:

- (i) “diabetes mellitus” with
- (ii) the terms “psychosocial intervention,” “counseling,” “psychotherapy,” and
- (iii) the problem areas “anxiety,” “stress,” “depression,” “eating disorders,” “brittle diabetes,” “poor control,” and “family conflicts.”

An additional search was conducted by cross-indexing “diabetes mellitus” with MESH headings including: “psychotherapy,” “analytic psychotherapy,” “adolescent psychotherapy,” “cognitive therapy,” “family therapy,” “group psychotherapy,” and “interpersonal psychotherapy.”

All identified literature was checked for duplicate citations and then grouped according to the five major psychological problem areas selected for this review. Case studies were excluded.

Each study was first categorized by problem area, intervention type, and target population. Further analysis included study design, sample size, patient characteristics, and outcome measures (both psychosocial and physiological). The review then assessed the benefits of each intervention in terms of psychological and/or metabolic outcomes.

Results

Depression

Depression is more common in people with diabetes than in the general population, with a prevalence of 15–20% [31–33]. Evidence suggests that depression in diabetes tends to be more chronic and severe [34], with both physiological and psychosocial factors contributing to its onset and maintenance [35,36]. Similar patterns of elevated depression rates are also observed in other chronic illnesses such as rheumatoid arthritis and cardiovascular disease [37,38].

In diabetes, depression is linked to poor treatment adherence, hyperglycaemia, and a heightened risk of complications, particularly cardiovascular disease and retinopathy [39–41]. Diagnostic challenges arise due to symptom overlap—such as fatigue, sleep disturbances, and sexual dysfunction—between depression and diabetes-

related dysregulation. Nonetheless, screening tools like the Beck Depression Inventory (BDI) have been shown to be feasible for use in diabetic populations.

Despite the high prevalence and clinical significance of depression in diabetes, only one controlled study was identified that evaluated psychotherapy specifically in this population. Lustman et al. conducted a randomized controlled trial involving 51 patients with Type 2 diabetes and major depression. Participants were randomly assigned to either 10 weeks of individual cognitive behaviour therapy (CBT) ($n = 25$) or a control condition without specific antidepressant treatment ($n = 26$). To control for the effects of supportive attention and improved diabetes knowledge, all patients also participated in a diabetes education programme.

The sample was predominantly female (60%), with a mean age of 54.5 years (± 10.1). Most were in poor glycaemic control (mean HbA1c $10.3 \pm 3.4\%$; reference range 4.4–6.3%), and 42% were on insulin therapy. Twenty participants had received prior depression treatment. Outcomes measured included depression severity (BDI), compliance with self-monitoring of blood glucose (SMBG), and glycaemic control—assessed post-treatment and at a 6-month follow-up.

Post-treatment results showed remission of depression in 85% of CBT participants versus 27.3% in the control group, and clinically significant symptom improvement in 80% versus 36.4%, respectively. These differences persisted at 6-month follow-up. While no significant post-treatment difference in HbA1c was observed after adjusting for baseline values, follow-up data showed lower HbA1c levels in the CBT group (9.5%) compared to controls (10.9%). Over the 6 months following treatment, HbA1c decreased by 0.7% in the CBT group but increased by 0.9% in the control group.

In a related sub study, Lustman et al. examined predictors of non-response to CBT. Poor SMBG compliance emerged as the strongest independent predictor, explaining 25% of the variance in post-treatment depression scores, with diabetes complications adding another 19%. The authors suggested that integrating diabetes-specific issues into psychotherapy may enhance treatment success.

Stress and Anxiety

Spieß et al. conducted a randomized controlled trial to evaluate an intensive programme aimed at reducing distress following diagnosis in adults with Type 1 diabetes. Participants (mean age 24 years; mean duration of diabetes symptoms 4.3 weeks) were all on multiple insulin injections. They were randomly assigned to either conventional education ($n = 13$) or a stress reduction programme ($n = 10$). The intervention included two individual bedside sessions during an 8-day hospitalization period, followed by group meetings starting one month after discharge. Led by a psychotherapist, the programme comprised 25 sessions over six months, each lasting 90 minutes.

At three-month follow-up, the intervention group showed lower levels of depression and anxiety, and less denial, compared to controls. However, at nine and fifteen months, only the reduction in denial persisted, and no differences in metabolic control were observed.

Although some studies suggest high prevalence rates of anxiety disorders and phobias in diabetes, robust epidemiological evidence is lacking. Two common anxiety concerns in this population are fear of hypoglycaemia and fear of long-term complications. These fears do not necessarily meet DSM-IV criteria for generalized anxiety disorder (GAD). In the general population, CBT—using techniques like systematic desensitization and cognitive restructuring—can effectively reduce anxiety and avoidance behaviours. While no studies were found applying CBT specifically for hypoglycaemia-related fear in diabetes, the well-researched Blood Glucose Awareness Training (BGAT) programme has been shown to lower such fears.

Zettler et al. piloted a group behaviour modification programme for fear of long-term complications in 17 adults with Type 1 diabetes (mean age 58 years). The seven-session intervention included imagery, relaxation, and restructuring of dysfunctional health beliefs. At three-month follow-up, participants reported reduced fear of complications and greater acceptance of diabetes. Although some individuals improved their glycaemic control, the overall reduction in HbA1c was not statistically significant.

While persistent fear of injections and self-monitoring is relatively rare among insulin-treated patients, it can be associated with serious psychological comorbidities and poor metabolic

control. No controlled trials have addressed needle phobia in diabetes, though effective psychotherapeutic treatments exist.

Self-Destructive Behaviors'

The term "self-destructive behaviours" refers to chronic or episodic severe mismanagement of diabetes, resulting in extremely high HbA1c levels, frequent diabetic ketoacidosis (DKA), and/or recurrent severe hypoglycemia. Such patterns are most often reported in adolescents. Clinicians generally attribute these behaviors to underlying psychological or psychosocial problems rather than to a lack of diabetes knowledge or skills.

Interpersonal Conflicts:

Research suggests that positive family functioning—characterized by cohesiveness and low conflict—is linked to reduced deterioration in glycaemic control and fewer acute complications such as DKA and severe hypoglycaemia. The relationship is bidirectional: poor control can create family stress, and family stress can worsen metabolic outcomes. Severe hypoglycaemia, especially when linked to hypoglycaemia unawareness, is a frequent source of marital tension and interpersonal conflict.

Guthrie et al. studied 20 highly distressed families of children with diabetes (aged 5–16 years) to test whether reducing parental stress could improve the child's glucose control. Families were randomized to a 10-week relaxation training programme or a control condition. Only the intervention group achieved significant improvements in glycaemic control, though the mechanism remains unclear and the findings have not been replicated.

Sundelin et al. 99 tested a family-oriented psychological support intervention for children and adolescents (aged 3–15 years) at diagnosis, hypothesizing that early support could improve long-term family climate and metabolic control. Thirty-eight families were randomized and followed for two years, but no significant benefits were found, echoing null results from Spiess et al. [55] in adults.

Discussion:

Consistent with earlier reviews, this analysis identified only a limited number of empirical studies examining the effects of psychological counseling in complex diabetes cases, spanning five key problem areas. Of the 11 randomized

controlled trials (RCTs) found—most involving small sample sizes—effect sizes were not calculated. The strongest evidence for cognitive behavioural therapy (CBT) effectiveness was observed in treating depression in Type 2 diabetes [44], with additional promising results in addressing binge eating [45] emotional behaviour and self-destructive behaviours [14]. However, further controlled research is necessary to confirm the benefits of CBT-based interventions across diverse patient groups and varying levels of complexity.

In adolescents, emotional behavioural therapy proved beneficial in reducing interpersonal conflicts but showed no significant impact on metabolic control. As noted by McConnell [13], more research is needed on counselling problematic adolescent patients, considering both individual and family-based approaches. Surprisingly, anxiety-related interventions—particularly for fear of hypoglycaemia and late complications—are under-researched, despite the well-documented success of CBT in anxiety management in the general population [14]. Targeted application of CBT in these domains could be highly beneficial.

Progress in this area remains limited since Williams et al. highlighted over a decade ago the need for robust evidence that psychological techniques improve both metabolic outcomes and quality of life in diabetes patients [15]. Achieving this requires overcoming several barriers. While small-scale studies have clinical value [16], larger, multicentre RCTs are essential to ensure adequate statistical power and reduce selection bias [17].

A key priority is integrating psychological services into routine diabetes care. According to IDF/WHO guidelines under the St Vincent Declaration [10], both healthcare staff and patients should have direct access to psychologists as part of the diabetes team. However, few clinics currently employ or collaborate closely with psychologists, limiting both clinical implementation and research opportunities. Without increased funding and institutional support, psychosocial interventions in diabetes will remain underutilized [18].

Evaluation of psychological counselling should not occur in isolation; contextual factors—such as the quality of medical care, appropriate treatment regimens, and healthcare professionals' awareness of psychosocial issues—must be addressed. Offering psychotherapy only as a "last resort" after

other strategies fail reduces its effectiveness, partly due to stigma associated with psychological referral [19]. Early intervention tends to yield better outcomes, yet mental health issues in diabetes often go undetected in both specialist clinics [11] and primary care [11].

Despite limited success in reducing distress related to diabetes onset [45,09], evidence supports a more proactive approach to psychological care, such as routine monitoring of patients' emotional well-being [12]. Integrating psychological treatment within diabetes teams can enhance both metabolic and psychosocial outcomes and prevent the common problem of patients being redirected between mental health and diabetes services. Advancing this field will require an emotional behavioural medicine approach [5], fostering close collaboration between psychologists, diabetologists, and other healthcare professionals—because ultimately, diabetes care is a team effort.

Conclusion:

In a large RCT, Wysocki et al. compared three months of emotional behavioural family therapy (10 sessions including problem-solving, communication skills, and structural family therapy) with support groups or usual care in 119 families of adolescents with diabetes. Emotional Behavioural therapy improved parent-adolescent relations and reduced diabetes-specific conflict at three months, with sustained improvements in family functioning at 6–12 months. Treatment adherence showed delayed improvement, but metabolic control worsened in all groups over time. Parents and adolescents rated behavioural therapy more favourably than support groups. The authors concluded that behaviour therapy is more effective than supportive approaches for reducing family conflict.

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