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ORIGINAL ARTICLE

## Psychotherapy intervention diabetes distress in diabetes patients: A systematic review<sup>☆</sup>



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### KEYWORDS

Intervention;  
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### Abstract

**Objective:** Diabetes can lead to changes in psychological and psychosocial conditions that result in increased non-adherence to medical care, increased risk of disease and increased mortality. This article aims to identify appropriate psychotherapy interventions in controlling psychological distress in type 2 diabetes sufferers.

**Methods:** Article review was conducted using three bibliographic databases. Articles were selected based on 2011–2020 publication using PRISMA flow diagram 2015.

**Results:** 4144 were obtained from three databases. 21 articles according to the inclusion criteria and 8 selected articles in the literature review were reviewed. Based on the review article, it was found that several methods were used to control psychological distress in diabetics. This method is carried out by various methods, either indirectly via the Internet or mobile phone or directly in the form of training.

**Conclusion:** Diabetics need appropriate psychotherapy to control psychological stress on sufferers.

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## 5 Introduction

Non-Communicable Diseases are a serious threat to global health. 70% of total deaths in the world are caused by non-communicable diseases.<sup>1</sup> World leaders place diabetes as one of the top four non-communicable diseases.<sup>2</sup> Globally, 1 in 11 adults has diabetes, and cases of type 2 diabetes is a case of diabetes which reaches 90–95%.<sup>3</sup> Diabetes cases in 2030 are predicted the seventh cause of death in the world, and in 2040 diabetes is expected to have an increase in cases of 642 million or an increase of 62.6% in 25 years.<sup>4</sup>

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**Table 1** Synthesis table of selected studies intervention diabetes.

Intervention	Author, year, country	Sample	Research design	Outcome
Intervention Mindfulness-Based Cognitive Therapy and treatment Cognitive Behavior Therapy	K. Annika Tovote et al., 2014, Netherlands	Type 1 and 2 diabetes patients were 94 patients aged 18–80 years with comorbid depression symptoms	Randomized Controlled Trial	Patients experienced a significant reduction in depressive symptoms with MBCT and CBT treatment compared with patients who did not receive treatment (control). Both interventions have a significant positive effect of reducing anxiety and stress, as well as improving diabetes-related well-being. <sup>14</sup>
Web-Based Intervention With Mobile Phone Support	Stephanie Nobis et al., 2015, German	There were 260 diabetes patients aged 38–79 years with type and type 2 diabetes categories <sup>3</sup>	Randomized Controlled Trial	The intervention proved effective treat symptoms <sup>6</sup> comorbid depression and disorders in people with type 1 or type 2 diabetes.
Intervention with Internet-based guided self	D.D. Ebert et al., 2017, German <sup>3</sup>	256 respondent diabetes who experienced increased symptoms of depression, aged $\geq 18$ years	Randomized Controlled Trial	There was no significant relationship between psychotherapy and blood sugar control, self-care, and patient acceptance of diabetes. But there was a decrease in the respondent's emotional distress
Cognitive Behavioral Intervention	Doyle M. Cummings et al., 2019, America	Diabetic patients aged 18–75 years were 39 patients with type 2 diabetes category	Randomized Controlled Trial	<sup>10</sup> results showed that there was an improvement in the quality of life in the group treated with Cognitive Behavior Therapy intervention compared to the group that was only given routine care.
Mindfulness-Based Stress Reduction (MBSR)	Robin R. Whitebird et al., 2017, Australia	Patients aged 31–78 years were 31 people with type 2 diabetes category	A one-arm pilot study with a mixed-model health plan	This study found no significant results from psychotherapy. Although the emotional distress of diabetic patients had decreased, not improving in terms of diabetes acceptance, diabetes self-care, and glycemic control.
Empowerment-Based Self-Management Intervention	Li Cheng et al., 2019, China	242 type 2 diabetes patients aged 18–89 years	Randomized Controlled Trial	The group that was given the Empowerment-Based Self-Management intervention experienced a significantly greater symptoms decreased depressive, increase in RRD, self-care behavior, and better treatment compliance than the usual care intervention group. <sup>7</sup>
Motivational interviewing	Shu Ming Chen et al., 2012, Taiwan	Patients aged $\geq 18$ years were 214 patients with type 2 diabetes category <sup>12</sup>	Randomized Controlled Trial	Self-management, self-efficacy, quality of life and HbA1c in diabetic patients had significantly improved with treatment Motivational interviewing although this treatment could not reduce the level of stress, depression and anxiety in diabetic patients.
Self-care Management Intervention	Zainab Fatehi Albikawi et al., 2016, Yordania	Patients aged $\geq 25$ years were 149 patients with type 2 diabetes category <sup>9</sup>	Quasi-Experimental	The results showed indicate that the psychological well-being of diabetic patients is not significant at 2 weeks post intervention but there is a significant change at 3 months post intervention

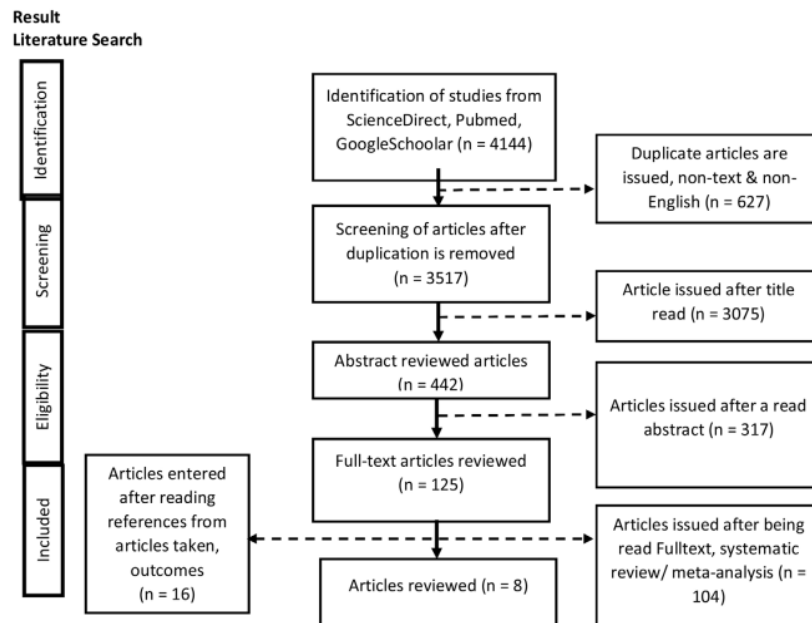


Figure 1 Flow chart literature.

Globally, the health care system experiences a significant economic burden due to diabetes. The International Diabetes Federation shows the direct costs of managing diabetes reach more than 72.11 billion USD per year or about 12% of global health financing. In the United States, patients with diabetes spend an average of 13,700 USD per year or about 182 million rupiah.<sup>5,6</sup>

Being diagnosed with diabetes can cause changes in a person's psychological and psychosocial conditions,<sup>7</sup> or what is known as Diabetes Distress.<sup>8</sup> This term is intended for diabetics who experience emotional distress due to changes in life patterns that sufferers must live. Coronary heart disease, stroke, kidney failure, blindness and amputation are complications of emotional distress and fear of macrovascular disease.<sup>9</sup>

Both acute and chronic diabetic distress conditions can worsen the prognosis of diabetes, increasing non-adherence to medical care<sup>10</sup> increase the severity of disease risk, decreases quality of life, and increase mortality.<sup>11</sup> A study shows that individuals with diabetes have twice the risk of experiencing stress than individuals without diabetes.<sup>12</sup> Therefore this article aims to assess the appropriate psychological interventions for type 2 diabetics. In addition to physical protection, diabetics also need the right psychological approach that can help control psychological and psychosocial disorders experienced by diabetics.

## Methods

This review article is structured in a systematic manner using the PRISMA 2015 (Selected Reporting Items for Systematic Review and MetaAnalyses guidelines).

## Data source

Articles were selected based on issues of the last 10 years, namely 2011–2020 through three computerized bibliographic databases: Scencedirect, PubMed, and Google Scholar. By using the keywords intervention, psychotherapy, type 2 diabetes, stress and using Boolean operators 'AND' and 'OR'. All selected references are imported into Mendeley X86 (Fig. 1).

## Data extraction

The inclusion criteria were: (a) type 2 diabetes, (b) English language articles, (c) peer-reviewed articles, (d) psychotherapy interventions. The exclusion criteria were: (a) patients with mild or severe mental disorders who suffer from diabetes, (b) qualitative research.

## Study selection

All articles imported to Mendeley X86 are selected for duplication first, selected articles will be further selected by reading the title and abstract, inappropriate articles will be deleted and those that are suitable will be further selected based on inclusion and exclusion criteria. Selected articles will be further selected by reading the entire article content. Selected articles will be included in the synthesis Table 1.

## Quality assessment

Quality assessment was carried out. The guide consists of 22 items which are grouped based on a quality assessment into 8 criteria, including: sample size criteria, sampling methodology criteria, response rate, outcome measure, control analysis, study boundaries, ethical considerations, and control for confounding criteria.

## Result

### Literature search

### Discussion

Previous research was mostly conducted in developed countries such as USA, Germany, China and the Netherlands. The study design that is mostly done is the randomized control trial. Based on the literature review, it is known that diabetes distress psychotherapy interventions that have been carried out by previous researchers include: Mindfulness Based Cognitive Therapy (MBCT),<sup>13</sup> Cognitive Behavior Therapy (CBT),<sup>14</sup> Mindfulness Based Stress Reduction (MBSR),<sup>15</sup> Web-Based Intervention With Mobile Phone,<sup>16</sup> Internet-based guided self,<sup>17</sup> Motivational interviewing intervention<sup>18</sup> stress management intervention,<sup>19</sup> Empowerment-Based Self-Management Intervention.<sup>20</sup>

Among the interventions that have been carried out previously, each has its own advantages and disadvantages in controlling stress in people with type 2 diabetes. However, among these interventions, many previous researchers used cognitive psychotherapy to treat diabetes distress, example cognitive behavioral therapy, Mindfulness Based stress reduction and Mindfulness Based Cognitive Therapy. The three cognitive psychotherapies are related to one another. Mindfulness Based Cognitive Therapy is the third development after Mindfulness-Based Stress, and Cognitive Behavioral Therapy.<sup>21</sup>

So that Mindfulness-Based Cognitive Therapy is considered the best psychotherapy that can be applied to people with diabetes distress because Mindfulness Based Cognitive Therapy (MBCT) was developed to improve the weaknesses of Mindfulness Based Stress (MBSR), and Cognitive Behavioral Therapy (CBT) (Michalak, 2019). Based on previous research, Mindfulness Cognitive Behavioral Therapy (MBCT) is very effective in controlling stress in patients suffering from chronic diseases such as diabetes.<sup>22</sup>

### Conclusion

Diabetes can cause changes in a person's psychological and psychosocial conditions, or what is known as Diabetes Distress. Individuals with diabetes have twice the risk of experiencing stress than individuals without diabetes, many previous researchers used cognitive psychotherapy to treat diabetes distress, example cognitive behavioral therapy, Mindfulness Based stress reduction and Mindfulness Based Cognitive Therapy. Diabetics not only need a physiological approach but also need a proper psychological approach that can help control psychological disorders in sufferers.

Psychological approaches need to be part of primary care for people with diabetes.

### Conflict of interest

The authors declare no conflict of interest.

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