

The Mindfulness-Based on Spiritual Intervention on Psychological Well-Being and Blood Sugar Levels in Type 2 Diabetes Mellitus Patients

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KEYWORDS

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ABSTRACT

Blood sugar levels are influenced by psychological well-being, which is affected by diabetics who go from being healthy to sick. This study examined the effect of spiritually situated mindfulness interventions on the psychological health and blood sugar levels of individuals with type 2 diabetes mellitus. Method: A quasi-exploration of different avenues regarding an untreated benchmark group and ward pre-and post-test samples was the research strategy utilized. All type 2 DM patients at the Surabaya Islamic Hospital Outpatient Clinic made up the study's populace. Using a basic random sampling strategy, 130 samples in total were selected based on the inclusion and exclusion rules. Also, the sample was split fifty, with 60 respondents each in the control and treatment groups. The Glucometer and the Ryff Psychological Well-Being Scale were the instruments utilized in this investigation. Matched sample t-test and independent sample t-test data analysis. Result: The results showed that the psychological well-being of the intervention bunch was 147.68 before the intervention and 171.32 after it. The mean blood sugar level in the gathering before the intervention was executed was 302.64, however after it was carried out, it was 189.11. In addition, the mean blood sugar levels in the benchmark group were 289.21 and 283.87 when the intervention, and the mean psychological well-being levels were 146.84 and 146.02, respectively. Furthermore, the data analysis demonstrated a negative relationship between type 2 diabetes patients' blood sugar levels and psychological well-being and mindfulness based on spiritual intervention ($p = 0.00$). Discuss: Individuals with type 2 diabetes can encounter improvements in their psychological well-being by lowering their blood sugar levels through the often used mindfulness based on spiritual intervention.

1. Introduction

Diabetes mellitus is an incurable illness. The main things that diabetes treatment can do are lessen symptoms and stay away from complications. Continuous treatment will result in changes in the biopsychosocial and spiritual domains (1). The process of transition will affect mental health. (2). Patients with type 2 diabetes mellitus have poor psychological well-being, which leads to poor self-care, which raises the risk of complications (3). Being able to accept oneself, have positive relationships with others, be independent, have control over one's surroundings, have a purpose throughout everyday life, and pursue self-improvement are indicators of psychological well-being (18). Observations and interviews with 55 DM2 patients at the Islamic Hospital in Surabaya's Outpatient Clinic uncovered that 78% of them had uncontrolled blood sugar levels and 76% had poor psychological well-being (4). Numerous intense and chronic consequences of type 2 diabetes mellitus could bring down a patient's personal satisfaction. Difficulties arise from the patients' continued inability to accept the state of affairs and from their inadequate self-care habits, which lead to uncontrolled blood sugar levels (10). The worst result of this is the onset of problems that could prompt demise on the off chance that it is not treated and managed appropriately. Roy asserts that individuals can improve their health by continuing to engage in versatile activity and altering maladaptive conduct (5).

Mindfulness exercises are one type of non-pharmacological strategy that helps lower uneasiness levels. By practicing self-acceptance in the present second, mindfulness increases self-awareness. According to Rohmawati (2020), practicing mindfulness results in a healthier life, lower susceptibility to tension and depression, and improved safe system execution (6). In request to advance awareness and

acceptance of the illness, spiritual mindfulness therapy employs Callista Roy's adaption nursing theory, which focuses on psychology. It does this by encouraging patients to breathe and inserting motivational statements with dhikr sentences (7). In request to create versatile way of behaving, Roy's concept model and theory highlight both physical and psychological factors (20). This study examined the impact of spiritually arranged mindfulness intervention on the psychological health and blood sugar levels of individuals with type 2 diabetes mellitus. This research is dire because type 2 DM patients could profit from a spiritual intervention based on mindfulness. In addition to having an impact on blood glucose stability, self-acceptance of the sickness they get through allows them to adjust and can upgrade psychological well-being (21). There is a requirement for research because the act of mindfulness based on spirituality has never been investigated.

2. Methodology

Materials

Using subordinate pre-and post-test samples and an untreated control bunch, this study utilized a quasi-experimental research design. The subjects for this study were all patients with Type 2 Diabetes Mellitus (DMT2) in the Outpatient Polyclinic of the Islamic Hospital in Surabaya. They were divided into two groups: the intervention group and the control group. A sample size of 130 individuals is intended. Additionally, 60 respondents were assigned to the treatment gathering and 60 respondents to the control bunch once the samples were gathered. A simple random sampling process will be used to select the sample, which will be done in accordance with the inclusion and exclusion criteria. To be considered for inclusion, the following criteria must be satisfied: Individuals diagnosed with type 2 diabetes mellitus (DM) must meet certain criteria in order to be eligible for treatment. These include: being Muslim, having a fasting blood sugar level greater than 126 mg/dl and a fasting blood sugar level greater than 200 mg/dl, being of working age (18 to 60 years), being able to perform independent tasks, having excellent verbal communication skills, being proficient, having had DM for at least a year, and being proficient in some area. Patients with type 2 diabetes mellitus who are physically, mentally, or intellectually impeded (blind, hard of hearing, intellectually tested), who have consequences from their disease (chronic kidney disappointment, cardiovascular breakdown, visual debilitation), or who are receiving other corresponding therapies are avoided. A spiritual intervention fixated on mindfulness is the study's independent variable. Blood sugar levels and psychological well-being are the reliant variables in this study. The Ryff Psychological Well-Being scale and the Glucometer, branded Easy Touch, are the instruments used in this study. The dimensions of the meter are 88 x 64 x 22 mm in millimeters, and it measures concentrations between 20 and 600 mg/dl, or 1,133.3 mmol/L. It uses a 3 V (CR2032) battery and has a measuring time of 10 seconds. The innovation is a biosensor that uses an anode, and its battery life is within ± 1000 times the inspection.

Data collection procedures

The 30-minute training sessions, which will be held two times per week, will comprise the Pre-visit stage of visit identification during the one-month time of the intervention. Setting an agenda to choose what to do after the visit. practicing mindfulness based on repetitive spiritual direction in between sessions.

Data analysis

To test the data analysis, we will utilize the Independent Sample t-Test and the Matched Sample t-Test. Assuming that the p value is less than 0.05, the hypothesis is accepted. In the wake of passing and being supported for a moral test by the Health Research Ethics Commission (number No.032/016/V/EC/KEP/LCBL/2023), the process for gathering data for this study can begin.

3. Results and discussion

Table 1. psychological health in the intervention and control groups before and after

Variable	Group	Pre		Post		t	n	p value
		Mean	SD	Mean	SD			
psychological well-being	Intervention	147,68	27,15	171,32	39.66	-7,67	60	0.000
	Control	146,84	26,01	146,02	27,80	0,269	60	0.779
Blood sugar levels	Intervention	302.64	47.84	189.11	30.79	10.43	60	0.000
	Control	298.21	48.03	283.87	44.13	2.360	60	0.979

Table 2 displays the average psychological well-being in the intervention bunch when the action, which was 147.68 and 171.32, respectively. The intervention gathering's average blood sugar level score was 302,64 preceding the intervention, and it was 189.11 after it, with a p-value of 0.000. This suggests a significant distinction between the pre-and post-Mindfulness Based on Spiritual intervention blood sugar levels and psychological well-being. The average psychological well-being in the control bunch, on the other hand, was 146.84 before the action and 146,02 following it, with a p value of 0.779 to support mental health preceding the occasion.

Table 2. Disparity between the Intervention and Control Groups' pre- and post-blood-sugar levels and psychological well-being

Variable	Group	Mean	SD	SE	n	p value	
						Pre	Post
psychological well-being	Intervention	170,91	38,14	5.57	60	0,33	0,000
	Control	146,48	27,56	3,50	60		
Blood sugar levels	Intervention	89,6	60,26	8,52	60	0,22	0,000
	Control	5,340	18,43	2,60	60		

Table 2. The data analysis results indicate that there are variations in the levels of psychological well-being and blood sugar when the intervention, as indicated by the p value of 0.000. Using Spiritual Intervention to Guide Mindfulness.

The Effect of Mindfulness Based on Spiritual Intervention on Psychological Well-Being

The findings demonstrated that mindfulness-based spiritual intervention affected type 2 DM respondents' psychological well-being. Psychological well-being increased in the therapy bunch as indicated by the pre-and post-test results. The treatment gathering's middle psychological well-being increased, and this increase was joined by an increase in psychological well-being variables, such as self-acceptance, autonomy, interactions with others, mastery of the environment, life objectives, and self-improvement. The findings of this investigation are consistent with the findings of a systematic survey by Miichaela et al. (2017), which took a gander at the neurobiological impacts of mindfulness therapy on stress, focus, and attention. concluding that practicing mindfulness meditation can for the most part affect reducing the physical signs of stress. Useful to give mindfulness interventions emphasize cautious attention to breathing in request to control pessimistic emotions, lower amygdala activation, and work on prefrontal integration (19). The strategic features of directing attention to address mental issues and enliven the force of remembered to lessen emotional suffering are more the emphasis of mindfulness meditation (6). For psychological issues, mindfulness therapy especially mindful breathing exercises is a successful treatment. Individuals who are in treatment can figure out how to distance themselves from internal tensions and emotional issues. The experience of being present, which makes mindfulness extremely subjective as an encounter, is one of the numerous events

that influence one another during the mindfulness process. Be that as it may, as a general rule, mindfulness is the ability to consistently sustain the qualities of awareness, acceptance, and attentiveness. The following stage is awareness, which is remembered to give individuals the capacity to think on and respond to their experiences as they occur in a healthy manner (8). Acceptance is the ability to recognize events without passing judgment, rejecting them, or ignoring them. Receiving with awareness allows one to stay focused on what's going on without becoming sidetracked or forgetting what is on one's mind. Finally, there is the transformation process, which uses mindfulness to give one direct access to strong inner resources for understanding, change, and recovery (9).

This study makes use of Sister Callista Roy's concept model methodology and adaptation nursing theory, which argues that an individual's degree of adaptation varies depending on their coping strategies and capacity to manage their processes. This should be visible through four different adaptation models, the most basic of which is the physiological adaptation model, which represents an individual's physiological response to stimuli. the psychological and spiritual parts of an individual, which comprise sentiments and beliefs made about oneself (based on internal and outer perceptions), are gotten from the environment and the adaptation of one's self-concept. This adaptation model consists of two parts: the physical self, which includes bodily sensations and images, and the personal self, which includes self-consistency, moral ethics, and spirituality. At the point when this intervention is used, the patient becomes more at ease, which helps the process of adaption and at last lowers uneasiness. Breathing exercises combined with spiritual mindfulness therapy are used to assist patients with becoming more mindful of their ongoing situation without placing fault on others or the environment. begins with the Almighty God as a means of spiritual inspiration in the form of recorded voice instructions to concentrate on breathing. If the patient finds that their thoughts and feelings are getting in the way of listening and feeling the noises, they should simply redirect their attention back to breathing and encouraging statements. an attitude of gratitude, humility, moderation, and candor set to proper music (20). Overall, the anxiousness levels are reduced by the processes that occur during mindfulness therapy. The sympathetic nervous system becomes more active in an anxious person's body as a reaction to stress. (11). The adrenal medulla is activated by the sympathetic nervous system in order to decrease nitric oxide and enhance the release of adrenaline, norepinephrine, and cortisol. A number of physiological processes, including respiration, heart rate, blood pressure, the distribution of blood to different organs, and metabolism, will adapt to this new environment. The prefrontal cortex, located in the middle of the brain and responsible for emotion regulation and judgment, will be activated by practicing mindfulness. The body will react by experiencing feelings of acceptance and nonjudgment as a result of these emotional cues. At the same time, the amygdala and hippocampus have regions that control emotions as well as regions that are open, responsible for blackouts, and for reinforcement. In order to alleviate anxiety, these sections will provide guidance on how to be more open, which will let people let go in awareness, control their reactions within, and embrace themselves more fully (12). This study combines spiritual components with the offered mindfulness therapy. According to Rohmawati et al., spirituality and petitioning God have the same therapeutic value as drugs (6). The concepts found in blessed books and theology are not key to spirituality. all the more specifically in terms of feelings and interpersonal relationships. The presence of positive emotions in spiritual experience like wonder, connection, confidence, compassion, appreciation, forgiveness, happiness, and trust is the connection among theology and neuroscience. Participants in the mindfulness practice report feeling at ease, developing a higher degree of self-compassion, becoming more joined to their spirituality, and becoming more conscious of their health and self-care (13).

The Impact of Spiritual Intervention-Based Mindfulness on Blood Sugar Levels

The findings demonstrated a significant impact on type 2 diabetes patients' blood glucose levels when mindfulness-based spiritual therapy based on breathing was administered. The present study's findings were consistent with earlier research demonstrating the impact of mindfulness therapies on patients' blood glucose levels. According to Riska et al. (2020), there was no adjustment of body weight except for there was a correlation between the MBSR intervention and an increase in glucose circulation in DM patients, as proven by a decrease in HA1c and a 6 mmHg drop in mean blood vessel pressure. According to Nghan (2021), MBSR therapy has been shown to be powerful in lowering blood sugar levels; in her study, 86 obese and diabetic ladies, the participants' blood sugar levels were 9 mg/dL lower than those of the gathering that got diet and exercise education. Stress can raise blood glucose levels and insulin resistance, as well as increase the synthesis of cortisol, norepinephrine, beta endorphins, glucagon, and development hormone. (14). Through an assortment of mindfulness exercises, such as body scans, mindful breathing, mindful walking, mindful eating, and mindful communication, participants figure out how to give close consideration to what is happening in the occasion, abstain from reacting irrationally, and try not to be receptive to events. ideas, feelings, or saw outside sensations are believed to be highly proficient in lowering personal psychological stress reactions, which can then improve personal blood sugar regulation (15). Broadened periods of stress raise cortisol levels through an increase in HPA axis activity, which in turn raises blood glucose levels. Additionally, cortisol interferes with the sensitivity, synthesis, and receptors of insulin, making it impossible to control blood glucose (16). This technique can, in essence, control the patient's average blood glucose level indirectly, however it must be done gradually (13). The improvement of self-awareness and adaption mechanisms that lower patient nervousness is one of the variables that affects the attainment of the condition of lowering the average blood glucose level (12). Riska (2020) The possession of spiritual power (modest, patient, grateful, confident, and sincere) will liberate a person from all pessimistic emotional barriers. The distinction between the average blood glucose levels of patients in the treatment bunch and the control gathering may possibly be credited to the strength of the medication, which is administered three times per day for a very long time. Because of the spiritual inspiration included in the intervention tape, this therapy can assist with keeping patients in a more loosened up condition by encouraging them to focus closer on the present time and place without making an endeavor to feel sorry for themselves, other individuals, or the surroundings. Along with encouraging increased focus and awareness, mindfulness will also involve seeing, feeling, knowing, and loving while at the same time keeping one's attention in the present time and place (17). This strategy applies the fundamental principles of intention, attention, and disposition while focusing attention on the present second and maintaining a nonjudgmental attitude (10). Studies uncover that patients' average blood glucose levels start to drop toward the finish of the first week and continue to drop until the post-test exam. The fifth evaluation (week 4) following the intervention showed the biggest drop in average blood sugar levels. The findings demonstrated a substantial variation in the impact of providing spiritual mindfulness therapy based on breathing exercises on the average blood glucose level based on measurements made between time points. This implies that the week after week intervention significantly affected lowering the average blood glucose level in type 2 diabetes patients.

4. Conclusion and future scope

Being mindful Research indicates that spiritual intervention can assist persons with type 2 diabetes mellitus decrease their blood sugar levels and improve their psychological well-being. At the point when blood sugar levels fall and psychological well-being rises in individuals with type 2 diabetes mellitus, their physical and mental health improves. Thus, it's basic to innovate in the manner in which

health services are given. For instance, one method for addressing diabetes management and furnish psychological management to individuals with type 2 diabetes mellitus is to establish a multidisciplinary clinic or collaborate with first-level health services. This way, comprehensive health services that address both physical and mental health care can be given.

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Conflict of interest

There are no conflict interest.

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