

## **Diabetes Mellitus A Psychosomatic Disease**

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### **ABSTRACT**

*Diabetic patients' mental and spiritual well-being affects their ability to manage one of the most prevalent chronic diseases. Glycemic management in patients with type II diabetes is examined herein in connection to personality, coping, and religious factors.*

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### **I. INTRODUCTION**

One of the most widespread chronic diseases, diabetes has far-reaching consequences for the patient's daily life. The incidence of diabetes has risen in recent years, seemingly as a result of both changing lifestyles and the rising prevalence of obesity. Type II diabetes, which is directly related to one's way of life, accounts for 90% to 95% of all cases of the disease. As a prominent measure of diabetes control, glycosylated haemoglobin (HbA1C) is the primary target of diabetic treatment. Compliance with medical instructions and self-care activities is crucial to attaining treatment goals for diabetes due to the disease's chronic nature; however, compliance is also influenced by a number of other factors. The significance of psychological elements in health and illness has been pushed to the forefront because to George Engel's biopsychosocial model of chronic diseases and his claim that these disorders require a more holistic understanding. The current research makes an effort to tackle the major facets of human psychology that have an impact on glycemic control. Both type I and type II diabetes are distinct diseases. Disease patterns appear to be driven more by underlying biological variables in Type I cases. However, type II diabetes is more common in older age groups, and it now appears that, in addition to genetic predisposition, lifestyle and related psychological factors play a significant role in its development. Due to this concern, type II patients were the primary focus of this investigation.

In 1930, the concept of the diabetic personality was first proposed to explain the condition by focusing on psychological causes. According to this theory, people with diabetes are more likely to act out their emotional distress in harmful ways because of the way their personalities are wired. In response to stressful or frightening situations, people employ coping techniques that might have negative effects on their physical and mental health. Defence mechanisms help patients cope with the stress of their illness, but they also make them less aware of the seriousness of their condition and their need for medical attention. The World Health Organisation (WHO) now also places a premium on the spiritual aspect of health. Spirituality and physical well-being have been linked in some research. To be spiritual is to believe in a higher power and to feel a bond to that power. Some research suggests that those with a spiritual bent are better able to deal with emotional stress because they use more constructive coping mechanisms. Higher spirituality predicts a more optimistic outlook in the face of adversity. Cattie and Kudson's qualitative research on people with diabetes shows that people's positive outlooks on the disease and their efforts to manage it are shaped by their spiritual relationships with the Creator and the meanings they ascribe to the disease themselves. Rappaport suggested that those who give their diabetes a higher spiritual meaning are better able to cope with it. Since spirituality is a culture-dependent construct, it is important to study it independently in each society or culture. This is the main drawback of studies on spirituality. Iranian spiritual studies must consequently be shaped in accordance with Iran's prevalent culture. Due to the dearth of research on the psychological variables involved in diabetes and the necessity for an interdisciplinary approach to medical problems, the present study was done.

### **II. METHODS**

Men and women between the ages of 18 and 65 who had been receiving treatment for at least a year at the Endocrinology and Metabolism Research Institute. Excluding those with chronic physical diseases unrelated to diabetes or major psychiatric disorders like schizophrenia, etc., the study population was selected using convenience sampling. An endocrinologist recommended potentially suitable patients to a psychologist and a psychiatrist for an initial evaluation of their psychological signs. The interview was used to evaluate patients according to DSM criteria. After participants' eligibility had been verified for the study, the researcher, assisted by the other psychologist and the psychiatrist, briefed them on the study's aims and methods. The haemoglobin A1c level was determined using the ion exchange HPLC technique and the D-10 HbA1c kit (Bio-Rad

Laboratories, Hercules, CA). After receiving participants' written informed consent, the next step was to have them fill out the study questionnaires. SPSS-20 was eventually used to analyse the gathered data.

### **III. DATA COLLECTION TOOLS**

Participants were evaluated with the help of the Spiritual Assessment Inventory (SAI), the Defence Style Questionnaire (DSQ), a blood test, and the five-factor NEO Personality Inventory.

The Defence Style Questionnaire (DSQ) is a 40-item instrument that evaluates three stages of defence development (adult, neurotic, and immature). Andrews et al. (1993) created the lengthy version of this survey. Cronbach's alpha ratings of 0.81 and 0.87 for the Persian version of the questionnaire show that it has strong validity and reliability.

The Spiritual Assessment Inventory (SAI): This 1996 questionnaire was created by Hall & Edwards, and it consists of sub-scales with Cronbach's alpha values of 0.95 for awareness, 0.9 for realistic acceptance, 0.83 for disappointment, 0.73 for grandiosity, 0.80 for instability, and 0.77 for impression management. Positive concurrent validity was found between the inventory and the Spiritual Well-Being and Coping Styles test. The present study's component analysis revealed a reliability of 0.962 across all 45 items, meaning that none needed to be removed from further consideration. Cronbach's alpha values were 0.924 for the entire inventory, 0.88 for the awareness scale, 0.83 for the acceptance of reality scale, 0.82 for the grandiosity scale, 0.71 for the instability scale, and 0.71 for the impression management scale.

### **IV. STATISTICAL ANALYSIS**

The mean and standard deviation were used to describe the characteristics and test scores of the individuals. Participants' HbA1C levels were correlated with their scores on a battery of personality, defence, and spirituality measures using the Pearson Correlation Coefficient. The data was analysed with SPSS-20.

### **V. RESULTS**

There were a total of 400 people that took part, with 256 (64%) being male and 144 (36%) being female. Subjects had a mean age of 51 (51.2 8.8), were married at a rate of 83.3%, and had only completed high school in 40% of cases. Glycemic control pills were utilised by 71.8% of participants (n = 287), while 28.3% (n = 113) also used insulin injections in addition to these pills. The average participant's sickness duration was 10.1 6.6 years, ranging from 1 year to 30 years. Participants' glycemic management was nearly optimum, with a mean HbA1C level of 7 1.7%, ranging from a low of 6.2% to a high of 10.6%. A substantial negative correlation (r = -0.1 and P 0.05) was found between neuroticism and HbA1C levels when analysing the associations between defence mechanisms and blood test markers. There was a positive correlation between neuroticism and blood test indicators (r = 0.12, P 0.05), as well as negative correlations between extraversion and blood test indicators (r = -0.13, P 0.01) and conscientiousness and blood test indicators (r = -0.13, P 0.01). Only impression management (r = 0.17, P 0.001) indicated a positive link between spirituality and the blood test indications (Table 1). Discussion Modern approaches to diabetes care increasingly emphasise the need of addressing the psychosocial effects of the disease. Individuals who are psychologically neglected are also less likely to adhere to standard diabetes medical treatments. The purpose of this cross-sectional study was to examine the connection between personality, defence mechanisms, and spirituality and glycemic management in patients with type II diabetes. Some of the more common personality traits were found to have significant correlations with glycemic control in diabetic patients. Higher levels of extraversion were associated with better glycemic control, whereas lower levels of extraversion were associated with higher HbA1C levels. Warmth in relationships, sociability, assertiveness, activity, excitement seeking, and pleasant emotions are only some of the six components of this personality trait that may help explain this correlation. Acceptance and adaption to diabetes through self-care behaviours may be easier for people with this personality feature. Patients with this characteristic are more likely to connect with other diabetics and come to terms with their condition because of this trait. Better glycemic control is also associated with a greater desire to participate in social activities, such as sports. Consistent with the findings of Wheeler et al., who studied patients with type I diabetes, the present study found a positive correlation between extraversion and exercise frequency (a measure of treatment adherence). Higher scores on this measure were linked to better glycemic management, suggesting a negative correlation between conscientiousness and HbA1C levels. Competence, systematisation, responsibility, hard work, orderliness, thoroughness, accuracy, and vigilance are the six pillars of conscientiousness. Maintaining a healthy blood sugar level and managing one's own diabetes calls for strict attention to one's medical regimen and compliance with the recommendations of one's doctor. People who score high on the conscientiousness personality trait are more likely to exercise good judgement when it comes to their health and to take the necessary steps to maintain healthy blood sugar levels. They are more likely to cooperate with treatment if they maintain order and vigilance. The findings regarding this character flaw agree with those found by Brickman et al. This includes the works of Booth-Kewley, Vickers, Christensen, and Smith. Wheeler et al. discovered that

people who scored higher on this personality trait were more likely to accept insulin and stick to their diet. Self-efficacy and orderliness also played a significant role in insulin acceptance, while orderliness played a significant role in diet adherence. The levels of HbA1C were also shown to be related to the personality attribute of neuroticism. Negative emotions accompany the bulk of the characteristics that make up this personality trait: anxiety, rage and aggression, despair, self-consciousness, impulsivity, and vulnerability. Anxiety, depression, and anger all have physiological consequences on blood sugar levels, and they can also have negative effects on patients' self-care behaviours, decreasing their motivation for treatment and decreasing their adherence to the prescribed medical regimen. These people are more likely to give up on their complicated diabetic treatment plans if they encounter any difficulties, because their impulsivity makes them more easily overwhelmed. The findings are in agreement with those of Brickman et al. Similarly, Wheeler et al. discovered a statistically significant correlation between this personality trait's score and insulin acceptance, with patients who scored higher on this trait having a lower likelihood of accepting insulin. The correlation between mood disorders and hostility was very evident. As may have been predicted, Wheeler et al. discovered a strong connection between impulsivity and diet adherence.

**Table 1** Correlation between HbA1C levels and personality traits, defense styles and spirituality (n = 400)

Variable		HbA1C Level	P-Value
Personality Traits	Neuroticism	0.123*	0.02
	Extraversion	-0.125**	0.01
	Openness to Experience	-0.046	0.3
	Agreeableness	0.016	0.747
	Conscientiousness	-0.133**	0.008
Defense Styles	Neurotic	-0.1*	0.04
	Immature	-0.004	0.9
	Mature	-0.052	0.3
Spirituality	Awareness	0.0037	0.4
	Realistic Acceptance	-0.012	0.8
	Disappointment	-0.021	0.6
	Grandiosity	-0.055	0.2
	Instability	0.65	0.1
	Impression Management	0.169**	0.001

\*  $P < 0.05$

\*\*  $P < 0.01$

The present research also found a link between neurotic coping mechanisms and blood sugar regulation. These defensive strategies are rigid and distract the patient from problem-solving by keeping him focused on his unpleasant feelings. Patients with diabetes who rely on these coping mechanisms are more likely to neglect their own self-care, which increases the risk of them not taking their medication as prescribed. Surprisingly, the data also demonstrated a good correlation between the spirituality's Impression Management Scales and glycemic control. This correlation may be explained by the fact that personality characteristics and coping strategies have a greater impact on the patients' ability to maintain stable blood sugar levels. However, more research is needed to fully understand this connection using different metrics.

## VI. CONCLUSIONS

This study's findings suggest that analysing personality features can help doctors pinpoint which patients are at risk for poor glycemic management. These findings can also inform the development of programmes aimed at educating people with diabetes about their condition. Proper management of diabetic patients can benefit greatly from personality assessment. Although personality traits are generally thought of as innate constructs that are resistant to change, more efficient measures would focus on making patients aware of their personality traits and its effects on good or bad trends of their illness and try to modify them through constant psychological interventions in addition to medical therapies. Patients in this study ranged in age from 18 to 91 years old, with a mean age of 51. Given that there is evidence to suggest that correlations shift

depending on age, it is important that future research take age into consideration and investigate the factors that influence treatment adherence, as has been argued in certain studies.

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