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Comparison of Anxiety, Stress and Depression between Male and Female Diabetes-II and Non-diabetes

ORIGINAL ARTICLE



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Abstract

The present study was conducted on diabetes-II (Males : 100; Females : 100) and normal (Males : 100; Females : 100) respondents to make a comparison between them in terms of anxiety, stress and depression. It was hypothesized that diabetes-II ((Males and Females) respondents would have high (i) anxiety, (ii) stress and (iii) depression as compared to their normal males and females respondents. For the purpose, the respondents were administered Anxiety Scale, Stress Scale and Depression Scale respectively. The obtained data were analysed using t-ratio. The results supported the hypotheses. The diabetes-II respondents excelled over normal respondents in terms of all the psychological factors under reference namely anxiety, stress and depression respectively. Thus, it was concluded that diabetes-II is significantly influenced by psychological traits namely anxiety, stress and depression. Therefore, diabetes-II is the function of anxiety, stress and depression.

Key Words

Anxiety, Stress, Depression, Diabetes-II, Non-diabetes.

Introduction

Diabetes, particularly Type-2 diabetes, is a chronic metabolic disorder characterized by insulin resistance and elevated blood glucose levels. Over the past few decades, Type-2 diabetes has become one of the most prevalent chronic conditions globally, driven by factors such as unhealthy diets, sedentary lifestyles, and an aging population. While the physical implications of Type-2 diabetes such as cardiovascular issues, kidney damage, and nerve disorders are well-documented, there is growing recognition of the mental health challenges that accompany this disease. Psychological disorders, including anxiety, stress, and depression, are increasingly being observed in individuals with Type-2 diabetes. These mental health conditions not only diminish the quality of life but can also worsen the management and progression of the disease.

Anxiety, stress, and depression are interconnected psychological conditions that significantly impact an individual's emotional and physical well-being. Anxiety is characterized by excessive worry and fear, often about future events, which may lead to physical symptoms such as increased heart rate and tension. Stress is a reaction to external pressures and challenges, causing the body to enter a state of heightened alertness.

Chronic stress, in particular, can lead to exhaustion, irritability, and physical health complications. Depression, on the other hand, is a mood disorder that involves persistent feelings of sadness, hopelessness, and a lack of interest or pleasure in daily activities. The interplay between these conditions can create a vicious cycle, where anxiety and stress worsen depressive symptoms, and vice versa.

In individuals with Type-2 diabetes, the chronic nature of the disease itself, along with the constant need for monitoring blood glucose levels, taking medications, and adhering to strict lifestyle modifications, can create a high burden of psychological strain. Furthermore, the risk of diabetes-related complications such as neuropathy, retinopathy, and cardiovascular diseases can contribute to ongoing stress and feelings of helplessness or worry about the future. The physical symptoms of diabetes—such as fatigue, thirst, frequent urination, and weight fluctuations—can also mimic or exacerbate symptoms of anxiety and depression. Consequently, those with Type-2 diabetes may experience heightened emotional distress, which can interfere with diabetes management, leading to poor adherence to treatment regimens, and increased risk of complications.

The mental health challenges faced by individuals with Type-2 diabetes are not limited to the direct effects of the disease itself. Psychological distress may also arise from the stigma associated with the condition. There is often a social perception that diabetes is self-inflicted, particularly in cases of Type 2 diabetes, which is largely preventable through lifestyle changes. This can lead to feelings of shame, guilt, or low self-worth, further exacerbating anxiety, stress, and depression. Additionally, the financial burden of managing diabetes, which may involve frequent medical appointments, medications, and lifestyle adjustments, can add to the psychological strain.

Comparing individuals with Type-2 diabetes to those without the condition reveals notable differences in the prevalence and intensity of anxiety, stress, and depression. Research has consistently shown that individuals with diabetes, including Type-2 diabetes, are at an increased risk of developing these psychological disorders compared to the general population. The reasons for this heightened vulnerability are multifaceted and include both the biological effects of diabetes, such as inflammation and hormonal imbalances, and psychosocial factors, such as the stress of managing a chronic illness.

However, it is important to note that the mental health challenges faced by individuals with Type-2 diabetes are not uniform. The severity of anxiety, stress, and depression can vary based on factors such as the level of diabetes control, the presence of comorbidities, socioeconomic status, and social support systems. In contrast, non-diabetic individuals also experience anxiety, stress, and depression, but the causes and manifestations of these conditions may differ. Understanding the differences in how anxiety, stress, and depression manifest in individuals with Type-2 diabetes compared to non-diabetic individuals is critical for developing targeted interventions to improve both mental and physical health outcomes.

This comparison is vital not only for enhancing our understanding of the intersection between chronic illness and mental health but also for informing clinical practices. By recognizing the heightened mental health risks in individuals with Type-2 diabetes, healthcare providers can develop more holistic care approaches that address both the physical and psychological needs of patients. Addressing the mental health aspect of diabetes management can ultimately improve the quality of life for those affected and may even contribute to better diabetes control and reduced risk of complications.

Review of Literature

Anderson, R. J., et al.¹ (2001) reviewed and meta-analysis examined the prevalence of depression in individuals with Type-2 diabetes. The authors found that depression is more common in those with Type-2 diabetes compared to the general population, affecting about 20-30% of diabetic individuals. Depression was also linked to poorer diabetes control, with individuals experiencing more difficulty managing their blood glucose levels, leading to worse long-term outcomes. Lustman, P. J., et al.⁵ (2000) discussed the bidirectional

relationship between psychological distress and glycemic control in individuals with Type-2 diabetes. The authors suggest that psychological distress, including anxiety and depression, negatively impacts blood glucose regulation, while poor glycemic control exacerbates emotional distress. They propose that addressing mental health could improve both emotional well-being and diabetes management. Peyrot, M., & Rubin, R. R.⁶ (1997) examined the role of anxiety in the context of Type-2 diabetes, focusing on how anxiety affects self-care behaviors and diabetes outcomes. The authors found that individuals with higher levels of anxiety had poorer diabetes self-management, which contributed to worse health outcomes. Additionally, anxiety was linked to an increased risk of developing depression in diabetic patients. Fisher, L., et al.² (2013) discussed diabetes-related distress (DRD), which is a unique form of emotional distress experienced by individuals with Type-2 diabetes due to the chronic nature of the condition. It is distinct from general psychological conditions like anxiety or depression but is highly correlated with them. The review concludes that DRD has a significant impact on diabetes management and quality of life, and addressing it can improve both mental and physical health. Strine, T. W., et al.⁹ (2008) reviewed explores the relationship between stress, depression, and anxiety in individuals with Type-2 diabetes, emphasizing the role of psychosocial factors in disease progression. The authors highlight that stress exacerbates blood glucose variability and impairs self-management, while depression is associated with lower adherence to medical advice and medication. Young-Hyman, D., et al.¹¹ (2003) examined the psychiatric comorbidities that frequently occur in patients with Type-2 diabetes, including depression, anxiety, and eating disorders. It identifies the complex relationship between these mental health conditions and diabetes, noting that psychiatric disorders often go undiagnosed and untreated in diabetic populations, leading to poorer health outcomes. González, J. S., et al.³ (2007) focused on the impact of depression and anxiety on diabetes self-care behaviors and disease outcomes. The authors argue that psychological distress negatively affects an individual's ability to adhere to diabetes self-management practices, which can lead to poor glycemic control and an increased risk of complications. Holt, R. I. G., et al.⁴ (2014) discussed the prevalence of mental health disorders such as depression, anxiety, and stress in individuals with Type-2 diabetes. The authors highlight the importance of early identification and management of these conditions in diabetes care. They also discuss the biological mechanisms that might explain the increased prevalence of mental health disorders in people with diabetes, including inflammation and dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis. Speight, J., et al.⁸ (2016) focused on the psychological impact of diabetes, particularly the role of stress and anxiety. The authors discuss the concept of "diabetes burnout," where the constant management of blood sugar levels and the threat of complications leads to emotional exhaustion. Stress and anxiety, in turn, contribute to this burnout, creating a cycle of worsening physical and psychological health. Thomas, D., et al.¹⁰ (2008) examined the social and psychological factors that influence the development and management of Type-2 diabetes. The authors emphasize that social support, coping mechanisms, and access to mental health care play a significant role in managing both the physical and emotional aspects of diabetes. Psychological factors such as anxiety and stress were found to be major contributors to poor diabetes control. Rotenstein, L. S., et al.⁷ (2015) explored the reverse relationship, focusing on how mental health disorders such as depression and anxiety may increase the risk of developing Type-2 diabetes. The authors discuss how chronic stress and depression can lead to poor lifestyle habits, such as unhealthy eating, lack of exercise, and poor sleep, which in turn increase the risk of developing Type-2 diabetes.

Objective

The study intended to compare diabetes-II and normal respondents in terms of anxiety, stress and depression.

Hypotheses

1. Diabetes-II respondents would have high anxiety as compared to normal respondents.
2. Diabetes-II respondents would have high stress as compared to normal respondents.

- Diabetes-II respondents would have high depression as compared to non-obese respondents.

Method of Study

Sample

The sample consisted of diabetes-II (N=200) and normal (N=200) respondents based on incidental-cum-purposive sampling technique. diabetes-II were selected from among clinics, health centres, jims of Patna. The normal respondents were selected from Patna. Other than the required condition they were matched so far as practicable.

Tools Used

- A Personal Data Sheet was employed on the respondents to identify the obese and nonobese respondents. Besides, it was used to know the background variables of diabetes, like, sex, age, residence and religion etc.
- Sinha's Manifest Anxiety Scale : It was used to measure the level of anxiety of the respondents.

Results and Interpretation

Table 01: Mean, SD and t-value showing a comparison between male and female respondents belonging to diabetes-II and normal groups in terms of anxiety score

Respondents	N	Mean	SD	t-value	df	p
Diabetes-II Male	100	60.39	7.49	9.25	198	<.01
Normal Male	100	50.77	7.16			
Diabetes-II Female	100	62.70	6.95	8.05	198	<.01
Normal Female	100	54.65	7.23			

The results displayed by table-01. It is clear that diabetes-II males (60.39) excelled over normal males (50.77) in terms of anxiety. The t-ratio was found significant ($t = 9.25$; $df = 198$; $P < .01$). Similarly, diabetes-II females (62.70) excelled significantly over normal females (54.65) in terms of anxiety scores ($t = 8.05$; $df = 198$; $P < .01$). The results displayed by table-01 clearly revealed that diabetes-II is a function of high level of anxiety both in case of males as well as females. Adolescents with Type II diabetes manifest higher levels of anxiety compared to their normal counterparts, regardless of sex, because managing a chronic illness involves constant monitoring of blood sugar, dietary restrictions, and fear of complications. The uncertainty about health outcomes, frequent medical appointments, and social stigma contribute to emotional stress. Additionally, physiological factors related to diabetes, like blood sugar fluctuations, can directly affect mood and anxiety levels, making these adolescents more vulnerable to heightened anxiety.

Table 02: Mean, SD and t-value showing a comparison between male and female respondents belonging to diabetes-II and normal groups in terms of stress score.

Respondents	N	Mean	SD	t-value	df	p
Diabetes-II Male	100	71.46	7.19	8.93	198	<.01
Normal Male	100	62.35	7.28			
Diabetes-II Female	100	73.72	6.97	8.52	198	<.01
Normal Female	100	64.81	7.30			

It is clear from the results table-02 that diabetes-II males (71.46) as well as diabetes-II females (73.42) both excelled over their normal male (62.35) as well as normal females (64.81) in terms of stress score. The t-ratio showing the significance of difference between the means in case of males ($t = 8.93$; $df = 198$; $P < .0$)

as well as females ($t = 8.52$; $df = 198$; $P < .01$) were found significant. Thus the findings are in agreement with the findings of table-02. Thus hypothesis-02 is again retained. The interpretation remained same. Adolescents with Type II diabetes manifest higher stress levels compared to their normal counterparts regardless of sex because managing a chronic illness involves constant monitoring of diet, medication, and lifestyle, which can be overwhelming. The fear of complications, social stigma, and restrictions on normal adolescent activities add emotional burdens. Additionally, physiological factors like blood sugar fluctuations can affect mood and stress responses. These challenges contribute to elevated stress levels in diabetic adolescents across both genders.

Table 03: Mean, SD and t-value showing a comparison between male and female respondents belonging to diabetes-II and normal groups in terms of depression score

Respondents	N	Mean	SD	t-value	df	p
Diabetes-II Male	100	180.17	7.15	9.29	198	<.01
Normal Male	100	171.06	6.92			
Diabetes-II Female	100	182.76	6.97	10.46	198	<.01
Normal Female	100	172.51	7.30			

It is clear from result table-03 that diabetes-II males (180.17) and diabetes-II females (182.76) excelled over normal male (171.06) and normal females (172.51) in terms of depression score the t-ratio (males = 9.29; $df = 198$; $P < .01$), female = 10.46; $df = 198$; $p < .01$) were found significant. The findings are very much in agreement with the findings of table-03. This hypothesis no.-3 is retained even in case of t-ratio. The interpretation remained the same. Adolescents with Type II diabetes manifest higher levels of depression compared to their normal counterparts because managing a chronic illness at a young age involves constant physical discomfort, lifestyle restrictions, and fear of complications. The demands of daily blood sugar monitoring, medication adherence, and dietary control can be overwhelming. Additionally, the social stigma and emotional stress linked to the disease can lead to feelings of isolation, low self-esteem, and helplessness, increasing the risk of depression regardless of sex differences.

Conclusions

1. Diabetes-II respondents excel over normal respondents in terms of manifesting high anxiety.
2. Diabetes-II respondents excel over normal respondents in terms of having high level of stress.
3. Diabetes-II respondents excel over normal respondents in terms of having high level of depression.

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