

Health-Related Quality of Life and Distress among Insulin-Dependent Diabetics

* Shagufta Perveen

** Gul Jabeen

*** Hafsa Khan

Abstract

Diabetes and depressive symptoms are devastating conditions that have an adverse impact on the health and quality of life among insulin-dependent patients. The present study envisioned exploring the correlation between diabetic distress and health-associated quality of life among insulin-dependent diabetic patients. A sample of 280 diabetic patients (178 males and 102 females) along with an age range from 20 to 55 years was purposefully selected from Government and private clinics of the Hazara Division. Urdu versions of SF-36 of the quality-of-life scale, The diabetic distress scale (Polonsky et al., 2005), and the Insulin dependency checklist (IDCL; Parveen, 2012) were used to assess the health-related quality of life, diabetic distress, and insulin dependency respectively. Pearson Product moment correlation revealed a negative relationship between diabetic distress and health-related quality of life while having a positive correlation with insulin dependency. Independent sample t-test revealed a significant difference in the health-related quality of life, and diabetic distress and suggested that female diabetic patients with insulin dependency were experiencing more depression and poor quality of life than male patients.

Keywords: Diabetic Distress, Quality of Life, Insulin Dependency**Introduction**

Type II diabetes in relation to the prevalence of related mental health issues has been frequently studied. However, previous studies focused only on non-insulin-dependent diabetes patients. Diabetic patients with insulin therapy (IT) may have a higher vulnerability to developing depressive symptoms. Depressive symptomology among type 2 diabetic patients is a highly concerned matter as it may result in physical impairment and other self-care-related problems (Polikandrioti et al., 2020).

The strike rate of depression and other mental health-related issues is found to be higher among diabetic patients (Anbalagan, 2022; Goddard, & Oxlad, 2022). There is mounting evidence that a positive relationship exists between mental health issues such as apprehensions regarding injection pain in insulin therapy (Gorska-Ciebiada et al., 2020; Kesavadev et al., 2020).

Katon (2022) proved the high occurrence rate of depression among diabetics. Another study claimed that diabetes patients had depression. Individuals with type II diabetes are at higher risk of developing depressive symptoms as compared to diabetics without type 2 diabetes. Lack of understanding of the disease and its treatments, communication issues with healthcare providers, and psychological factors have been related to decreased observance to recommended personal care (Bukhsh et al., 2020).

Faisal et al., (2010) reported that there may be a correlation between insulin-dependent diabetes and an increased likelihood of experiencing depression. Likewise, Zahid, Asghar, Claussen, and Hussain (2008) demonstrated the commonest of depression and other psychological issues are highly prevalent among Pakistani diabetic patients. Similarly, in the Iranian population (Dehesh et al., 2020; Mahboobeh et al., (2017) and in Bahrain (Jahrami, 2020) existence of depression and psychological health-related issues were reported among insulin-dependent diabetic patients.

Similarly, the DAWN survey has a survey of diabetic patients revealed that 20% of respondents reported that they had occasionally skipped their injections, and 10% reported that they had reduced the number of daily injections. (Peyrot et al., 2005). Insulin use among patients has been studied globally, with varying levels of adherence. For example, 19.9% of patients in France, 42% of

* Hazara University Mansehra Email: shaguftak27@gmail.com** Hazara University Mansehra Email: nav11649@yahoo.com*** Nowshera Medical College Email: fizikhan@gmail.com

patients in the United States, and 44% of patients in Japan reported resistance to insulin therapy. In a large systematized care study of 27,000 type II diabetes patients starting on insulin, it was found that 4.6% discontinued the preliminary medicine and 25.5% not once restocked their first prescription. Similarly, patient ranked their discomfort as a top barrier in the in lists of objections (Karter et al., 2010). Insulin treatment can be challenging for some, and there may be a variety of psychological factors that contribute to insulin resistance. These can include a limited understanding of diabetes and its treatments, negative perceptions of insulin, fear of complications or hypoglycemia, incorrect beliefs about the condition, practical limitations, fear or pain associated with injections, or simply discomfort with the process (Barnett et al., 2012).

Based on a sample taken from America, a higher rate of depression has been observed among patients diagnosed with diabetes (Balogh et al. 2020). Similarly, Sabuncu, et al. (2021) reported higher-scale depression and stress among type II diabetics. Study based on a meta-analysis of patients with type I diabetes has shown a strong association between diabetic distress and depression (Polonsky et al., 2011). The rate of depression was notably higher among those with type I diabetes. (Ali et al., 2006; Liu et al 2022). Additionally, depression in diabetics has been linked with adversative effects on physical and psychological health such as economic burden associated with huge medical bills (Jung et al., 2021) diabetes-related physical problems (Jones, 2018), and poor control of diabetes (Daneshzad set al., 2022) are found to be most common problems among diabetics.

There is a significant correlation between diabetes distress and depression (Garey et al., 2022). Studies have shown a relationship between diabetes and depressive symptoms, with a more substantial percentage of type I diabetic patients experiencing both extreme and tolerable levels of depression. (Lee et al., 2021). The research suggested that female diabetic patients had an increased likelihood of psychological difficulties. Additionally, there appears to be a correlation between diabetes diagnosis and baseline depression, which could lead to distress and emotional challenges for those affected (Fisher et al., 2011; Grammatikopoulou et al., 2021). Feeling overwhelmed by the changes associated with diabetes can lead to a range of emotional responses, including depression (Kalra et al., 2018). Individuals with diabetes mellitus type I are more prone to develop adversities due to the changes in lifestyle that are necessary to manage the condition. (Rankin et al., 2021).

Zhu et al. (2020) found a positive association between Insulin therapy (IT) and depressive symptomology among Chinese diabetic patients. The chances of developing depressive symptoms can be about double among diabetes patients precisely; who were undergoing insulin therapy (Gulley & Shomaker, 2020). It has been observed that type 1 diabetic female patients tend to take anti-depressant drugs more frequently than other groups when developing depressive symptoms due to gender-based vulnerability (Juárez-Rojop, 2018; Trento et al., 2012). Affective problems associated with diabetes are particularly prevalent among female Type 1 diabetic patient (Sturt et al., 2015) the usage of antidepressant drugs is most frequent among diabetic patients (Harding et al., 2019; Manderbacka et al., 2010). Female diabetic patients may benefit from psychological assistance to address stress and depression related to diabetes (Gadit, 2016).

The current study aimed to investigate the relationship between quality of life and diabetic distress among diabetics. It is assumed that insulin-dependent diabetes increases the risk of developing a deteriorated quality of life and depression. The second purpose was to find whether gender differences would affect the level of experienced depression among insulin-dependent diabetics. Based on the earlier findings following hypotheses were formulated:

Hypothesis 1: There will be a negative correlation between health-related quality of life and level of diabetic distress among patients with Insulin-dependency.

Hypothesis 2: Among Insulin-dependent diabetes patients gender base differences will exist on diabetic distress and health-related quality of life scales.

Research Methodology

Research Design

Quantitative analysis survey research was used to explore the association between quality of life and depression among diabetic patients. This research includes responses from type 2 diabetic patients obstinately selected from different hospitals and clinics in Abbottabad, Haripur, and Mansehra cities. The instruments used in the current study are valid and reliable with high consistency.

Sample

To achieve the purpose of the study using a purposive sampling technique a sample of 280 (men =178, women = 102) insulin-dependent patients with an age range of 20 to 55 years ($M = 38.05$, $SD=5.63$ years) was drawn from government and private hospitals. Following inclusive and exclusive criteria have been set to select the present sample: All the diagnosed type II diabetic patients, undergoing insulin therapy, free from diagnosed mental health issues, and willing to take part in the study were included in the study. Those patients who were diagnosed with other than type 2 diabetes, suffering from any severe mental health issues, or were unwilling to participate in the study were excluded from the sample of the study.

Instrument

The diabetic distress scale comprised 17 items (DDS; Polonsky et al., 2005). Response category ranges from Not to A Very Serious Problem. The scale consists of four subscales named: emotional burden (items no 2, 4, 7, 10, and 14) diabetes-related interpersonal distress (items no 9, 13, and 17) physician-related distress subscale (items no 1, 5, 11, and 15) regimen related distress subscale (item no 6, 8, 3, 12, and 16).

The scale contains 36 items, with 10 related to physical functioning, 4 related to role-physical, 3 related to role-emotional, 4 related to vitality, 5 related to mental health, 2 related to social functioning, 2 related to body pain, and 6 related to general health (SF-36; Ware, 2000). Scoring of the scale may range (from 0-100), ranging from poorest to best health condition. Reported Cronbach alpha value ranges from 0.71 to .84.

Variables

In this study, two variables were measured Health-related quality of life (HRQL) is considered an independent variable, and Diabetic Distress (DD) dependent variable.

Procedure

In the present study, the researcher personally approached the respondents. The authorities of Clinics and hospitals were contacted to get permission. In the present study, only insulin-dependent diabetic patients were included. After the delivery of the necessary information and an explanation of the study purpose permission of the respondents was taken. After obtaining informed consent. Patients were asked to provide their responses on the demographic questionnaire, the depression Scale, and the health-related quality of life scale. They were guaranteed that data will be reserved and confidential and will be only used for research. In the end, the researcher expressed thanks for their cooperation.

Results

Table 1

Relationship between Health-related quality of Life and level of depression among diabetic patients on Diabetic Distress scale (N=280)

Scale	1.	2.	M	SD
1. DDS	-	-.76*	65.47	12.58
2. HRQL	-	-	76.48	10.62

Note. DS = Diabetic Distress Scale; SF-36QL = Sf-36 Quality of Life Scale. * $p < .05$

Table 1 exhibits a significant positive association between depression and the health-related quality of life ($r = -.76$, $p < .05$). Therefore, it is assumed that depression is negatively correlated with health-related quality of life among Insulin-dependent diabetic patients.

Table2

Mean, Standard Deviation, and t-scores of Male and Female Insulin-dependent patients on the Diabetic Distress Scale and Health-related quality of life (N=280)

Scales	Female (n=102)		Male (n=178)		t(278)	P	Cohen's d	95%CI	
	M	SD	M	SD				LL	UL
DDS	38.66	12.28	28.34	5.02	5.01*	.000	3.25	0.84	4.23
SF-36QL	54.26	9.39	47.67	15.10	3.71*	.002	0.53	1.13	3.49

Note. SF-36QL = SF Quality of Life Scale; DDS= Diabetic Distress scale.

df= 278, * $p < .05$

Table 2 exhibits a large effect size for depression insulin-dependent patients ($Cohen's d = 3.52$) and ($Cohen's d = 0.53$) indicating a significant difference between males and females' insulin-dependent patients concerning the level of depression ($t = 5.01$, $p < .05$) and health-related quality of

life ($t = 3.71, p < .05$). Research has demonstrated that female insulin-dependent diabetic patients have been found to have poorer quality of life and greater severity of depression in comparison to male patients.

Discussion

Recent research has investigated the connection between mental health and diabetes. In the past decade, the correlation between depression and diabetes has been widely studied by psychologists and clinicians. Several studies have determined that diabetes can have a negative effect on psychological well-being, increasing feelings of stress and depression (Déniz-García, et al., 2022; Van Duinkerken, et al., 2020).

Though, little pragmatic work has been done investigating the association between health-related quality of life and depression among insulin-dependent diabetic patients. The present study sought to understand levels of depression among diabetic patients, as well as any possible gender differences in this regard. The analysis regarding the relationship between the variables exhibited a significant negative relationship between the health-related quality of life level of depression and insulin-dependent diabetes (see Table 1). Studies have previously indicated that those with insulin-dependent diabetes are more prone to experiencing depression. (Martino et al., 2020; Van Duinkerken, et al., 2020). A study has reported that a high level of depression is common in insulin-dependent diabetic patients (Raspovic et al 2000; Talbot, & Nouwen, 2000).

Leeza and Farooq (2019) also reported the existence of a significant relationship between the prevalence of depressive symptoms and the diagnosis of diabetes. Similarly, a number of other studies have proved strong association exists between type 1 diabetes and depressive symptomology (Zahid et al. 2008) diabetics belonging to the urban areas of Pakistan are at higher risk for developing comorbid depressive symptoms (Malik et al., 2017), rate of recurrence of depressive symptoms among patients with Type-I diabetes in a developing country Pakistan is very high (Faisal et al., 2010).

Studies have shown that the stress of daily diabetes-related management activities, especially when there is a dependency on insulin intake can trigger feelings of loneliness, and apprehension and in turn, depresses. Patients with insulin-dependent are found to be apprehensive about the high risk of hyperglycemia another important source of depression among insulin-dependent diabetics is losing weight to reduce the insulin intake which makes them intake a restricted diet and follow the diet plan thus can cause stress and irritation and sadness. Studies have shown that insulin-dependent diabetics exhibit a lack of energy and interest in daily routine life they take their life as a burden. Hence are more prone to experience poor quality of life.

It was hypothesized that a significant difference will exist between male and female insulin-dependent diabetics with reference to depression and quality of life. The analysis revealed that a significant difference exists between men and women diabetic patients concerning depression and health-related quality of life (Table 5). Past studies have reported that male insulin-dependent female diabetic patients experience a higher degree of depression (Al-Amer et al., 2011).

There has been researching that suggests that female insulin-diabetic patients tend to score higher on depression assessment scales than male patients (Everson-Rose et al., 2004; Trento et al., 2012). The findings of the present research have supported the previous evidence, which has reported that among female diabetic patients, the rate of depressive disorder is much higher than in male patients (Messina et al., 2022). Similar results were reported by Yi-Min et al. (2015) and Le, et al., (2022) reporting female diabetic patients to be at more prone to develop mental health issues and thus experience poor quality of life. Another study has proved that female diabetic patients are more vulnerable to psychological problems and produced consistent results (Carr, et al. 2022).

Conclusion

There is some evidence that the treatment of diabetes can have an adverse effect on the psychological health of diabetic patients. The presence of depressive symptomology in a person who is diabetic can be more alarming if precautions are not taken. Furthermore, it was found that female diabetic patients are at higher menace for developing depression symptoms. This study will help clinicians and other health professionals in gaining a better understanding of the psychological needs of diabetic patients. The present study suggests that depression may be preventable in people with type II diabetes. This study's results can be used in a wide-ranging depression prevention program more precisely, for Insulin dependent diabetic patients.

Future Implication

Study findings can be implemented in the physical and mental health sectors and policy-making for physicians and clinical psychologists. From the above findings, health-related quality of life can be improved by healthy management of stress and depression among insulin-dependent diabetics. Through counseling, and psychological help Females are more prone to stress and depression especially may be supported in managing health-related lifelong stress and psychological burden.

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