1-2017

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The International Journal of Indian Psychology
ISSN 2348-5396 (e) | ISSN: 2349-3429 (p)
Volume 4, Issue 2, No. 85, DIP: 18.01.012/20170402
ISBN: 978-1-365-68608-5
http://www.ijip.in | January-March, 2017

Quality Of Life and Depression among Patients with Type I Diabetes: A Study of Gender Differences

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ABSTRACT

Diabetes is a progressive chronic condition which places a significant burden of self management on the individual, such as daily monitoring and medications management, worry about the future and distress about the impact of diabetes on various aspects of life. It is a group of metabolic diseases characterized by elevated blood glucose levels (hyperglycemia) resulting from defects in insulin secretion, insulin action or both. The present study aimed to assess gender differences in quality of life and depression in patients suffering from type I diabetes. A sample of 70 participants (44 male and 26 female) in the age range of 40-80 years was collected from Jammu region, India. WHO Quality of life questionnaire and Beck's Depression inventory-II were used as tools. Results indicated a significant difference on physical and psychological dimensions of quality of life and on depression across gender. The mean scores indicated that female participants had increased level of depression compared to the male participants. No significant difference was found between male and female on social and environmental dimensions of quality of life.

Keywords: *Depression, Diabetes, Gender, Quality of life.*

Diabetes mellitus is a chronic medical condition that places serious limitations on an individual's daily-life activities. Earlier known to be insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes, it develops when the body's immune system destroys pancreatic beta cells, the only cells in the body that make the hormone insulin that regulates blood glucose. To survive, people with Type I diabetes must have insulin delivered by injection or a pump. This form of diabetes usually strikes children and young adults, although disease onset can occur at any age. In adults, Type I diabetes accounts for approximately 5% of all diagnosed cases of diabetes. Risk factors for Type I diabetes may be autoimmune, genetic, or environmental. There

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is no known way to prevent Type I diabetes and several clinical trials for preventing Type I diabetes are currently in progress or are being planned (Centers for Disease Control and Prevention, 2011).

Prevalence of diabetes in adults worldwide was estimated to be 4.0% in 1995 and to rise to 5.4% by the year 2025. Nearly 75% of people with diabetes will reside in developing countries by 2025, as compared with 62% in 1995. The countries with the largest number of people with diabetes are, and will be, India, China, and the U.S. In developing countries, the majority of people with diabetes are in the age range of 45-64 years (King, Aubert, & Herman, 1998). The World Health Organization estimated that the number of people with diabetes in the world would reach 300 million by 2025 (WHO REPORT, 2007).

Diabetes may give rise to many complications, such as, heart and blood vessel disease, nerve damage (neuropathy), kidney damage (nephropathy), eye damage, foot damage, skin and mouth conditions and pregnancy complications. There is a need for proper education and behavior change. Because of this, diabetes mellitus is an illness for considering effects on quality of life. There has been a growing interest in examining health related quality of life in both patients with Type I and Type II diabetes (Jacobson, de Groot, & Samson, 1994). Type I diabetes has a greater impact on the quality of life of women as compared to men as women experience more worries about complications of Type I diabetes and hypoglycaemia (Gafvels, Lithner & Borjeson, 1993). Type I diabetes has a greater negative impact on quality of life as compared to Type II diabetes.(Mayou, Bryant, & Turner,1990). Such patients are also at a higher risk for developing psychiatric problems such as anxiety and depression (Barrett, Barrett, Oxman & Gerber, 1988). It is associated with an increased prevalence of mental health difficulties, including anxiety and depression from childhood into older age (Peyrot & Rubin, 1997; Shaban, Fosbury, Kerr, & Cavan, 2006). Otherwise there exists very less information regarding the psychological distress in young adults suffering from type I diabetes (Kovacs, Goldston, Obrosky, & Bonar, 1997).

It is important to study gender differences in diabetes because many studies indicate that men and women have different attitudes and behaviors related to diabetes care (Hibbard & Pope, 1983). Females are more sensitive to illnesses and more willing to seek medical advice that often require additional, intrusive treatments. Women have a greater interest and concern for diabetes and are more likely to perceive symptoms (Anderson, Fitzgerald, & Oh, 1993). Women make greater use of diabetes services and have a larger network of people with whom to discuss medical problems (Green, 1990). Some of these differences may have evolved from the different roles that men and women traditionally have played within the family structure, with women having greater responsibilities for family health.

Previous work on adolescents suffering from Type I diabetes suggests that female adolescents are more likely to have poorer metabolic control than male adolescents, which may be related to

the hormonal changes during puberty (Amiel, Sherwin, Simonson, Lauritano & Tamborlane, 1986) and poorer adherence to treatment and lifestyle recommendations (Cameron, 2003; Nurick & Johnson, 1991). Obesity has a greater effect on well-being in women suffering from type I diabetes (Zabelina, Erikson, kolotkin & Crosby, 2009).

The causal factors of depression in diabetes are not fully understood. Both biological and psychosocial factors are likely to play a role (Barnard, Skinner & Peveler, 2006). Depression is very common in diabetic patients with comorbidity (de Groot, Anderson, Freedland, Clouse & Lustman, 2001) and high levels of diabetes-related distress (Pouwer et al. 2005). Patients with psychiatric disorders, particularly depression tend to have poorer glucose regulation than did patients who had no psychiatric diagnosis (Lustman & Clouse, 2002; Sridhar, 2007).

Health status assessment and diabetes-specific quality of life (QOL) is important because individuals with diabetes often have to cope with a variety of advice, recommendations and medications which may be burdensome. These interventions improve glucose levels although pharmacological treatment might not improve health status or diabetes-related quality of life, and may even reduce them. The studies examining the relations between glucose and quality of life in patients with established diabetes are very inconsistent: some support the relation of glycaemic control with improved quality of life while others do not (Goddijn, Bilo, Feskens, Groeniert, Vander, & Meyboom-de, 1999). People having diabetes display poorer general emotional wellbeing than the healthy population, including impaired quality of life (Goldney, Phillips, Fisher, & Wilson, 2004), and more symptoms of depression (Ali, Stone & Peters; Anderson, Freedland, Clouse, & Lustmam, 2001).

Type I diabetes requires patient to follow a strict and expensive daily regimen of regular blood glucose testing, life-style and dietary adjustment, and insulin injections. By following this regimen, blood glucose levels may be optimized, general well being can be maintained, and the risk of developing the long-term complications of diabetes will be reduced (Lloyd & Orchard, 1993; DCCT, 1993). However, past studies have not extensively addressed the contribution of medical illness severity to psychiatric illnesses and quality of life. In this paper, we examine this issue in a sample of patients suffering from Type I diabetes and propose the following objectives-(1) Males will score higher on quality of life than females. (2)Females will score higher on depression than males.

METHOD

Participants

The present study comprised of 70 participants (44 male and 26 female) in the age range of 40-80 years. The sample was collected from endocrinology clinics of Jammu city, India. The data was collected over a period of 1 month.

Measures

Depression: To assess the depression level of participants Beck Depression Inventory-II (Beck, Steer and Brown in 1996) was administered. It is a self report inventory which is used to assess the depression level of subjects. It contains 21 items; with four response categories from 0 to 3 respectively. Response options vary for all the items. Higher total scores indicate more severe depressive symptoms. This test has high test-retest reliability (Pearson r-0.93), as well as high internal consistency of 0.91.

Quality of Life: The World Health Organization -Quality of Life-BREF is a 26 item short version of the 100 item WHOQOL scale, developed with the aim of creating a cross cultural quality of life assessment instrument. The items of this instrument factorize into four domains of quality of life, denoted by 'physical health', 'psychological', 'social relationships' and 'environment'. Validity was demonstrated in a study by the WHO-QOL Group, which found that WHO-QOL-BREF domains were representative and relevant for quality of life across several cultures. The WHOQOL group found cronbach's alpha values ranging from 0.66 to 0.84 for the four domains (WHOQOL Group, 1998).

Procedure

Data was collected individually using a cross-sectional design. Care was taken that doubling of data does not take place. Consent was taken from the doctors of various clinics and each participant's consent was also sought.

Statistical Method

Coding of the one categorical variable i.e. gender was carried out by using SPSS version 20. Mean, standard deviation and the t-test were calculated. The variables tested were depression and quality of life.

RESULTS

Mean, standard deviations and the value of t are presented in the table. Results indicated significant gender difference for psychological (2.382, $p < 0.05$) and physical domains (3.391, $p < 0.01$) of quality of life. Significant gender differences are also present in depression (2.381, $p < 0.05$).However no gender differences were found for the social and environmental domains of quality of life.

DISCUSSION

The aim of the present study was to assess the gender differences in quality of life and depression in the patients with type I diabetes. The participants were in the age range of 40-80 years. The main finding was that there was a gender difference between males and females on psychological and physical domains of quality of life whereas there was no gender difference

found on social and environmental domains of quality of life. Mean scores indicated that the females showed more psychological and physical health problems as compared to males.

Although several studies have examined determinants of health related quality of life in adolescents and young adults with type1 diabetes (Faulkner, 2003) only a few studies have examined the determinants of health related quality of life and quality of life in adults with Type I diabetes. One study that examined 397 adults with T1D, reported that female gender, lower income, longer diabetes duration, diabetes complications, experiencing more than one episode of hypoglycemia per month, and low physical activity levels were associated with poor HRQL (Lloyd & Orchard, 1999). Another study found female gender, obesity, diabetes complication and comorbidities were associated with lower HRQL, among 784 T1D adults (Coffey et al.,2002).Women appear to experience a greater impact of diabetes on their quality of life and experience more worries about complications and hypoglycemia than men (Eiser, Flynn, & Green, 1999).

The second main finding was that there was a gender difference found on depression. Mean scores indicated that the female participants had higher scores on depression than male participants. The reason could be the hormonal changes, relational violence against women and the role of genes. Results of the psychiatric interviews (CIDI) showed that 8–10% of male and female patients with T1DM suffered from a depressive disorder (MDD⁄ dysthymia). Among patients with T2DM, 18% of women had MDD and 6% dysthymia, while the percentage of men with any depressive disorder was surprisingly low (2%; Pouwer et al., 2009). Over one-third of young adults with Type I diabetes experience considerable psychological distress, including symptoms of depression. The results suggest that there is an increased prevalence of clinically relevant anxiety in females and of depression in males with Type I diabetes when compared with the normative data (Shaban, Fosbury, Kerr, & Cavan, 2006).

The reason could be that females show more predominant emotions, such as, frustration, irritability, and guilt. They often experience negative feelings, such as, blue mood, despair, and anxiety and have less time to enjoy leisure activities as they remain more busy in house chores. They get less time to take care of themselves. In regard to physical health, the reason could be that their general health gets more affected to specific problem. Females feel more drained and fatigued. They don't indulge in physical activities such as exercise and gym. They are more dependent on others because of social pressures and cultural restraints. As they are socially more isolated than males they share less of their problems. By considering the four domains, quality of life is better in males suffering from Type I diabetes as compared to female patients.

LIMITATIONS

The major limitation was the use of cross-sectional design. The present sample was unequal hence it was not representative of the whole population.

CONCLUSION

Depression is a very common psychiatric problem in both males and females suffering from Type I diabetes. All patients with diabetes and depression require adequate mental healthcare, for which screening and monitoring should be advocated. Health practitioners should be encouraged to achieve good glycaemic and cardiovascular risk factor control, and promote lifestyle interventions to improve quality of life in this population. Additional support should be provided for socioeconomically disadvantaged adults. Gender specific interventions targeting at-risk women should be implemented. Self-management education or training is a key step in improving health outcomes and quality of life. It focuses on self-care behaviors, such as healthy eating, being active, and monitoring blood sugar. It is a collaborative process in which diabetes educators help people with or at risk for diabetes gain the knowledge and problem-solving and coping skills needed to successfully self-manage the disease and its related condition.

Acknowledgments

The author appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interests

The author declared no conflict of interests.

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Table 1, Test of significant differences on Physical and Psychological domains of QOL and in depression across males and females

	Mean			**SD**		**t-test**
	Male	**Female**		**Male**	**Female**	
Social	10.18	10.11		2.47	1.92	.118
Psychological	20.63	18.30		4.01	3.84	2.382*
Physical	23.38	19.96		4.36	3.58	3.391**
Environmental	26.56	24.50		5.19	5.73	1.549
Depression	14.36	19.76		9.57	8.43	2.381*

***$p < 0.05$**

****$p < 0.01$**

How to cite this article: Gohil E, Charak R, Rashid H, Sharma P (2017), Quality Of Life and Depression among Patients with Type I Diabetes: A Study of Gender Differences, International Journal of Indian Psychology, Volume 4, Issue 2, No. 85, ISSN:2348-5396 (e), ISSN:2349-3429 (p), DIP:18.01.012/20170402, ISBN: 978-1-365-68608-5