

Depression, psychological distress and coping skills among patients diagnosed with type-II Diabetes Mellitus

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Abstract: Depression is associated with increased medical morbidity and mortality among patients with diabetes mellitus. The purpose of this study was to investigate the relationship between depression, psychological distress and coping skills among patients diagnosed with type-II diabetes mellitus. A cross sectional correlational designed used to collect data from a convenience sample of 307 patients survey in regards to depressive symptoms, psychological distress, and coping. The results showed that 22.0% of the patients reported that they had moderate to severe depressive symptoms, and about more than 50% of them had moderate level of psychological distress. Psychological distress had significant and positive correlation ($r = .29, p < .001$) with depression, coping skills has been associated negatively with depression ($r = -.19, p < .001$). The results also showed that there was significant difference between male and female patients in their depressive symptoms ($t = -2.57, p = .01$). Data from this study suggests that there is a high incidence and prevalence of depression in patients with Diabetes Mellitus type –II that requires developing interventional programs to encounter negative feeling and development of depression among patients with diabetes mellitus.

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1. Introduction

Diabetes mellitus (DM) is becoming an epidemic problem worldwide during the last decades (Ramachandran et al., 1999). In Jordan, the prevalence of type-II diabetes of age 25 years and above was 13.2% (Ajlouni, et al., 2010). Diabetes mellitus as chronic illnesses overwhelm patients causing them psychological stressors due to requirement related to management of their illnesses (Doumit and Nasser, 2001). According to Sareen and colleagues (2005), chronicity of illness cause psychological disturbances that interfere with patients' ability to manage their needs independently that exacerbates their physical. For example, patients with chronic illnesses may suffer depressive feelings that delay their recovery and healing process (Katon, Lin, & Kroenke, 2007). On the other hand, health care professionals sacrifice psychological care focusing on patients' physiological needs that result in poor treatment outcomes and may increase mortality rate (Frasure-Smith, and Lespérance, 2006). The impact of chronic illnesses such as diabetes mellitus on the bio-psycho-social aspects of individual's health and wellbeing cannot be interpreted solely in terms of disease process, but also relates to

difficulties of individuals' adjustment to their illnesses, and the evolved changes of their lifestyle (Chen and Chang, 2012). In addition, issues related to available sources of support and patients' perception of their ability to manage their health care needs are also other factors that may contribute to quality of health care outcomes (Trento et al., 2008).

The DSM- IV-TR states that approximately 20% to 25% of people with general medical conditions will become depressed during the course of their chronic condition (APA, 2004). On the other hand, depression has been connected to poor health treatment outcomes. For example, depression has been associated with increased medical morbidity, mortality, worse quality of life, risk for complications among patients with cardiac and metabolic problems (Freedland, et al., 2003; de Groot et al., 2000; Lustman et al., 2000). Furthermore, the literature showed that treatment of depression had positive outcome on patients' prognosis and quality of life, and that depressed mood lowers the force needed to cope with the chronic diseases, decreases tolerability of physical symptoms, and increases psychosocial disturbances (Frasure-Smith, & Lespérance, 2006). Previous studies also showed that

depression have been linked with chronic illnesses (Honyashiki, et al., 2011), and that patients' psychological difficulties and health care professional competency related to psychological follow up care have been linked to increased morbidity, mortality, and expenditure of health services (Sullivan, et al., 2002; Wang, et al., 2006). According to Katon (2003), depression contributed to 50% increase in health care cost medical illnesses.

The holistic management of diabetes requires adequate attention focusing on the prevalence of psychological health. However, given that patients do not exhibit uniform psychological reactions to living with their chronic condition, it may be suggested that certain psychological factors that are internally impeded such as stress and depression could affect the individual's reaction to the challenges posed by the disease (Senecal and Nouwen, 2000). This proposed a concern about the psychological status of patients with type –II diabetes mellitus. This study came to address this issue and attempts to explore the interrelationships between the three psychological factors that are assumed influencing health outcome of patients with type –II diabetes mellitus. Therefore, the *purpose* of this study was to investigate relationship between depression, psychological distress and coping among patients with type –II diabetes mellitus. The specific aims are:

- To examine relationship among stress, and coping among patients with diabetes mellitus type -II.
- To identify the differences in depressive symptoms, stress, and coping of patients with diabetes mellitus type -II in relation to demographic and personal characteristics.

2. Materials and Methods

Design

A cross-sectional, correlational design was used. Data was collected from patients diagnosed with diabetes mellitus-type-II from the three health care sectors in Jordan (governmental, University affiliated, and private). Information collected in regards to stress, depression, perceived social support, and coping.

Sample and settings

A convenience sampling of 307 completed and returned the questionnaire. The study targeted patients attending primary, secondary and tertiary care units. Inclusion criteria include: 1) diagnosed with diabetes mellitus-type-II longer than 6 months, 2) age of 18 years or above, 3) ability to read and write in Arabic. Exclusion criteria included: 1) no history of diagnosed mental or cognitive disorders.

Data collection procedure

Prior data collection, ethical approval obtained from the Faculty of Nursing at the University of Jordan, and the targeted institutions. Data collected

using self report format of data collection at patient's convenience. Patients who expressed interest to participation in the study were approached by the researcher who explained the study and provided them with all details and answered all their questions. Patients were asked to sign the consent form that included information related to the title of the study, its purpose, its significance and a statement informing the participants that their privacy would be protected by assuring them that their responses will be treated confidentially, and information that reveal their identity will not be recorded.

Instruments

The data collected using an Arabic version of self-reporting questionnaires. Tools first translation into Arabic language by a research assistant and back translated into English language another independent research assistant as described by Brislin (1970) and Chapman and Carter (1979). Pilot testing conducted using patients (n = 25) requesting their appraisals for the appropriateness of the translation.

The Instruments were:

1. The Beck Depression Inventory-II (BDI-II) (Beck, Steer, & Brown, 1996) was used to assess patients' depressive symptoms, which contain items that measure cognitive-affective symptoms and attitudes, impaired performance, and somatic symptoms (Beck, Steer, & Brown, 1996). This instrument contains 21 questions answered on a four-point Likert scale in which 0 represents the absence of symptoms and 3 represents an extreme problem. The total range of 0 to 63 and standard cutoff points as follow: 0-13 indicates no or minimal symptom, 14-19 indicates mild symptoms, 20-28 indicates moderate symptoms, and 29-63 indicates severe symptoms. A score of 13 is the cut-off point indicating depression. The test-retest r was .88, and Cronbach's Alpha is .87 (Beck, Steer, & Brown, 1996).

2. Psychological distress was measured using the brief form of Psychological Stress Measure (Lemyre, Tessier, & Eillion, 1990). The original Psychological Stress Measure (PSM) was designed using 49 items drawn from descriptors generated by focus groups on stress. The scale is unifactorial in structure and maintains a test-retest stability of .68 to .80 under apparently constant conditions. Patients checks the answer that best indicates the degree to which each statement has applied to him/her recently. The responses made on a Likert scale and ranged from range from 1 (null) to 4 (much). The higher the score in the scale reflect higher level of psychological stress.

3. Coping skills was measured using the abbreviated version of the COPE Inventory (Carver, 1990). Brief COPE is a 28 items scale measures the ways individuals use to cope with stress in their life. Brief COPE is formed of 14 domains (each consisted

of 2 items) were responses ranged from 1 (I haven't been doing this at all) to 4 (I've been doing this a lot). The scale takes > 10 minutes to be completed. The scale has good internal inconsistency with Cronbach's alpha of .83 (Carver, 1990).

Potential covariates: Gender, age, marital status, duration of disease, education level and work status.

3. Results

Descriptive characteristics

A total number of 307 patients completed the questionnaire. Patients' age ranged from 18 to 87 years, with mean of 58.1 (SD=12.9). About 54.1% (n = 166) of the patients there were male patients, while 45.9% (n=141) were females. In regard to marital status, the majority of them 79.2% (n=243) were married, while 10.7% (n=33) were widow, and 5.2% (n=16) were single, and 4.9% (n=15) were divorced. The analysis also showed that most of patients (55%, n = 169) were not working, and 24.1% (n=79) of them had a full time work, also 16.3% (n =50) had retired, where the least percent 4.6% (n=14) of patients had a part time work.

Psychological Health status

Depression

Regarding depressive symptoms, the analysis (see table 1) showed that the patients had a mean score of 14.6 (SD = 9.0) with scores ranging from 0 to 47. About 50% of the patients had a score of 16 or above. In regards to level of depression, the analysis showed that 44% (n = 135) of the patients found to have no or minimal depressive symptoms, while 33.9% (n = 104) had mild depressive symptoms, 14.3% (n = 44) had moderate depressive symptoms, and 7.8% (n = 24) had severe depressive symptoms. The analysis indicates that about 46% (22% moderate to severe level of depression) of the patients are suffering from depressive symptoms compared to 44% with no to minimal depressive symptom.

Coping skills

Regarding patients' coping skills using brief COPE scale (see table 1), the analysis showed that patients had a mean score of 72.0 (SD = 10.2) with scores ranging from 29 to 97. Considering that the possible range of score is 28 - 112, and that the analysis showed that 50% (n = 154) of the patients had a score of 71 or above and 50% of them had a score between 68 and 78, the results indicate that patients, in general, had moderate of their ability to effectively cope with their life situations.

Psychological distress

Regarding patients' psychological distress level (see table 2), the analysis showed that patients had a mean score of 40.9 (SD = 11.4) with scores ranging from 15 to 67. Considering that the possible range of score is 9 - 72, and that the analysis showed that that 50% (n = 154) of the patients had a score of 41 or

above and 50% of them had a score between 32 and 49, the results indicate that patients, in general, had moderate level of stress.

Bivariate analysis

Differences in psychological factors in relation to demographic characteristics

Regarding the relationship between demographic and personal characteristic and depressive symptoms, the analysis showed that although there was a negative correlation between patients' age depressive symptoms, this relationship was not statistically significant. Regarding gender differences, the analysis showed that there was significant difference between male and female patients in their depressive symptoms ($t = -2.57$, $p = .01$) with higher mean score of BDI among female patients ($M = 17.1$, $SD = 10.1$) than male patients ($M = 15.2$, $SD = 10.2$). To examine the differences in psychological factors in relation to working status, one-way ANOVA was conducted. The analysis showed that there was a significant difference in depressive symptoms in regards to working status, ($F_{3, 806} = 9.3$, $p < 0.001$). Using post hoc comparison (scheffe), the analysis showed that those who are not working ($M = 17.8$, $SD = 10.5$) were significantly different (higher mean) in their BDI score from those working full time ($M = 13.5$, $SD = 8.9$).

Regarding differences in psychological distress and coping related to demographic characteristics, the analysis show that there are no differences in stress and coping related to gender, working status, or education level ($p > .05$). Also the analysis showed that the correlation between age and stress and coping was not statistically significant ($p > .05$).

Relationship between depression, psychological distress, and coping

Using Pearson r , the analysis showed that there was a significant and negative correlation between depression and coping ($r = -.19$, $p < .001$), while there was a positive and significant correlation between depression and psychological distress ($r = .29$, $p < .001$). On the other hand, coping and psychological distress was not associated significantly ($p > .05$). The results infer that patients with higher level of depression are more likely to have higher level of psychological distress and using effective coping.

4. Discussion

Globally, chronic physical health problems are the main cause for disability (Mathers, & Loncar, 2005), and depression is associated with increased medical morbidity, mortality, and risk for complications among patients with chronic medical illnesses (Freedland et al., 2003; de Groot et al., 2000). Therefore; screening for psychological factors among patients diagnosed with chronic illnesses is an essential component of quality of health care provided (Hamdan-Mansour,

Halabi, Dawani, 2009). This study aimed at examining correlates of depressive symptoms among patients diagnosed with diabetes mellitus and explore further about the differences in depressive symptoms related to sociodemographic factors.

The findings of this study showed that significant proportion of patients with type-II diabetes have moderate to severe depression, moderate level of psychological distress and coping. The results of this study corresponds with previous ones (Bogner et al., 2007) who reported that the prevalence of depression among diabetics patient ranged from 28% to 44%, while De-Groot and associates (2001) reported that 58% of diabetic patients had depressive symptoms. In addition, Larijani and associates (2007) reported that 41% of the interviewed diabetic patient had a sings of clinical depression.

However, the results also in regards to psychological distress do not correspond with previous international study ones (Kırl, 2000) who reported that 38.4% of patient with type-II diabetes mellitus have high level of stress level, while in this study most of the patients with type –II DM had moderate level of stress. In regard to coping patterns, the results do not correspond with previous international studies that reported a greater proportion of diabetic patients used avoidance coping styles than used problem focused ones a (Coelho, Amorim, Prata, 2003) while in this

study most of the patients' scores showed that patients are more likely using effective coping skills rather than ineffective ones.

This study has showed that patients with type-II diabetes mellitus in Jordan had moderate to high levels depression, stress and effectively using coping skills. Managing comorbidity of physical and psychological problems in primary care is needed. Data from this study suggests that there is a high incidence and prevalence of depression in patients with Diabetes Mellitus type -II. Moreover, the study suggest that managing stress and enhancing effective coping skills are among the most influencing factors that encounter negative feeling and development of depression among patients with diabetes mellitus. Controlling and lowering depressive symptoms and managing stress level among patient with type-II diabetes mellitus is required to enable long-term care management. This study has an implication for psychosocial and mental health professionals at the community and primary care settings. There is a need that health professionals assess and screen for psychosocial factors; stress, depression, and coping skills among patients with diabetes in their routine checkups and visits to outpatients units. Future research must focus on establishing diagnostically reliable criteria measuring depression and other psychosocial factors among patients with DM type-II.

Table 1. Psychological factors among patients diagnosed with Diabetes mellitus type –II (N = 307).

Variable	N	M	SD	Min	Max	P ₂₅	P ₅₀	P ₇₅
Psychological distress	307	40.9	11.4	15.0	67.0	32.0	41.0	49.0
Coping	307	72.0	10.2	29.0	97.0	68.0	71.0	78.0
Depressive symptoms	307	14.6	9.0	0	47.0	8.0	16.0	18.0

References

- Ramachandran A, Snehalatha C, Latha E, Manoharan M, Vijay V. Impacts of urbanization on the lifestyle and on the prevalence of diabetes in native Asian Indian population. *Diabetes Res Clin Pract* 1999; 44: 207-13.
- Ajlouni K, Kader YS, Batiha A, Ajlouni H, El-Kateeb M. An increase in prevalence of diabetes mellitus in Jordan over 10 years. *J diabetes Complications* 2009; 22: 317-24.
- Doumit J, Nasser R. Quality of life and wellbeing of the elderly in Lebanese nursing homes. *Int J Health Care* 2010; 23: 72-93.
- Sareen J, Cox BJ, Clara I, Asmundson G. The relationship between anxiety disorders and physical disorders in the U.S.: National Comorbidity Survey. *Depress Anxiety* 2005; 21: 193 –202.
- Katon W. Clinical and Health Services Relationships between Major Depression, Depressive Symptoms, and General Medical Illness. *Biolog Psych* 2003; 54: 216 - 26.
- Frasure-Smith N, & Lespérance F. Recent evidence linking coronary heart disease and depression. *Can J Psych* 2006; 51: 730 –15.
- Chen PY, Chang HC. The coping process of patients with cancer. *Eur J Oncol Nurs* 2012; 16: 10 -6.
- Trento M, Tomelini M, Basile M, Borgo E, Passera P, Miselli V, Tomalino M, Cavallo F, Porta M. The locus of control in patients with Type 1and Type 2 diabetes managed by individual and group care. *J Br Diabetic Assoc* 2008; 25: 86-90.
- Diagnostic and Statistical Manual of Mental Disorders. 4th edition, text revision. Washington,

- DC: American Psychiatric Association, 2000. Depression, anxiety, and physical impairments and quality of life in the US noninstitutionalized population. *Psychiatr Serv* 2004; 55:1408–13.
10. Senecal C, Nouwen A, White D. Motivation and dietary self-care in adults with diabetes: are self-efficacy and autonomous self-regulation complementary or competing constructs? *Health Psychol* 2000; 19: 452 – 7.
 11. Freedland KE, Rich MW, Skala JA, Carney RM., Dávila-román VG, Jaffe AS. Prevalence of depression in hospitalized patients with congestive heart failure. *Psychosom med* 2003; 65: 119 –28
 12. De Groot M, Anderson R, Freedland KE, Clouse RE., Lustman PJ. Association of depression and diabetes complications: a meta-analysis. *Psychosomatic Medicine* 2001; 63: 619 - 30.
 13. Lustman PJ, Anderson RJ, Freedland KE, de Groot M, Carney RM, Clouse RE. Depression and poor glycemic control. *Diabetes Care* 2000; 23 (9): 934 – 42.
 14. Honyashiki M, Ferri CP, Acosta D, Guerra M, Huang Y, et al. Chronic diseases among older people and co-resident psychological morbidity: A 10/66 Dementia Research Group population-based survey. *Inter Psychogeriatric Assoc* 2011; 23 (9): 1489 - 501 C.
 15. Brislin RW. Back translation for the cross-cultural research. *J Cross Cult Res* 1970; 1: 185–216.
 16. Chapman DW, Carter JF. Translation procedures for cross cultural use of measurement instrument. *Edu Eval Pub Analy* 1970; 1: 71– 6.
 17. Beck G, Steer R, Brown G, Manual for the Beck Depression Inventory-II San Antonio, TX: Psychological Corporation, 1996.
 18. Lemyre L, Tessier R, & Eillion L, *Mesure du stress psychotogique (MSP): Manuel d'utilisation*, Brossard, Quebec: Ed, 1990.
 19. Carver CS. You want to measure coping but your protocol's too long: Consider the Brief COPE.” *Inter J Behav Med* 1977; 4: 92-100.
 20. Mathers CD, Loncar D. Updated projections of global mortality and burden of disease 2002e2030: Data sources, methods and results. Geneva: World Health Organization, 2005.
 21. Hamdan Mansour A, Halabi J, Dawani H. Depression, hostility, and substance use among university students in Jordan. *Mental Health and Substance Use: Dual Diagnosis* 2009; 2 (1): 53-64.
 22. Bogner H.R, Morales K.H, Post E.P, Bruce M.L. Diabetes, Depression, and Death. *Diabetes Care* 2007; 30: 3005-10.
 23. Larijani, B, Khoram M, Bayat1 S, Gorgani1 MK, Bandarian F, Akhondzadeh S, Sadjadi1 SA. Association Between Depression and Diabetes. *German J Psychiatry* 2004; 7: 62-5.
 24. Kırıl S. To determine that stress factors have to impact on blood glucose control of the patients with type 2 Diabetes Mellitus who have used insulin. Retrieved on March 2013, from <http://www.mtip.selcuk.edu.tr/home/search/?find=Selçuk Kırıl>
 25. Coelho R, Amorim I, Prata J. coping styles and quality of life in patients with non-insulin-dependent diabetes mellitus. *Psychosom* 2003; 44:312– 8.

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