Scientific Research

Psychosocial Wellbeing of Patients Diagnosed with Coronary Artery Disease

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Abstract

Psychological and social wellbeing of patients diagnosed with coronary heart disease is an important component in patients' recovery. The *purpose* of this study is to explore the psychological and social factors among individuals diagnosed with coronary artery disease. Methods: 164 patients diagnosed with CHD filled and returned a self administered. Data were collected in regard to stress, depression, perceived social support, and coping. Results: The analysis showed that patients who have moderate level of stress, perceived social support, mild level of depression, have more tendencies to use effective coping strategies. Also the analysis showed that cope, psychological distress, and perceived social support were significant predictors of high level of depression (F = 5.2, $p < .001$), and that perceived social support from others was the most significant protective factors against depression (F =12.7, $p < .001$). Conclusion: Mental health care providers need to consider their patients' psychological wellbeing and sources of social support as part of their routine care and assessment.

Keywords

Psychosocial Wellbeing, CHD

1. Introduction

Coronary heart disease (CHD) is a prevalent chronic disease worldwide and the first leading cause of death (WHO, 2010). Previous studies showed that psychological factors such as depression, anxiety, and stress play significant role in the etiology, development, duration, and clinical outcomes of CHD (Albus, 2010; Khayyam-Nekouei et al., 2013). Depression has been found to increase risk for further cardiovascular problems, re-admissions, and mortality among individuals with CHD (Stafford et al., 2009; Jiang et al., 2002), while stress exacerbates their physical and psychological status (Nabi et al., 2010).

The association between CHD and psychological disturbances has been established in the literature. Studies reported that depression and stress evoke central responses by enhancing the activity of central nervous system and hypothalamic pituitary track which leads to central obesity, insulin resistant, inflammation process, hypertension, platelet activation, and endocrine dysfunction leading to development of CHD (Albus, 2010; Charlson et al., 2011). Moreover, stress and depression were also linked to negative health related behaviors such as low physical activity, poor diet, smoking, and a lack of interest that are also anticipate precursor for CHD (Chandola et al., 2008; Tylee et al., 2011). The literature has also emphasized the role of social factors such as social support and family life and coping in predicting CHD (Albus, 2010). Impaired social support has been associated strongly with CHD prevention, development, effective regimen, and rehabilitation (Lett et al., 2005; Smith et al., 2002). The connection between social support and physical and psychological status gains its merits from the definition of social support itself. While coping strategies found to enhance wellbeing and decrease the negative feeling that associated with the disease process (Yu et al., 2011), and mediate the effect of anxiety and depression in developing chronic disease (Zhang et al., 2008; Yu et al., 2011). Patients with CHD use cognitive and behavioral coping strategies to adjust with their illness. Coping strategies enhance wellbeing and decrease the negative feeling that associated with the disease process (Yu et al., 2011).

The worldwide trends have focused on promoting and maintaining health rather than providing secondary treatment; consequently, this study will anticipate predictors of CHD. In Jordan, non communicable diseases are estimated to account for 74% of all deaths, 40% of them are due to coronary vascular (WHO, 2011). Few studies in Jordan have addressed the psychosocial problem among patients with chronic illnesses (Hamdan-Mansour et al., 2013; Hamdan-Mansour et al., 2014). Therefore, this study came to explore the psychological and social factors among individuals diagnosed with coronary artery disease. The purpose of this study was to identify the relationship among stress, depression, perceived social support, and coping among Jordanian patients diagnosed with CHD.

2. Method

2.1. Design

A quantitative approach using cross-sectional, descriptive correlational design was adopted for this study. Data were collected from patients diagnosed with Coronary Heart Disease from three health care sectors in Jordan (governmental, educational, and private).

2.2. Sample and Setting

A convenience sampling of 164 patients diagnosed with Coronary Heart Disease (CHD) completed and retuned the questionnaire. The study targeted patients attending primary, secondary and tertiary care units from three major hospitals representing the three health sectors in Jordan; university-affiliated, governmental, and private hospitals. Inclusion criteria include: 1) diagnosed with CHD longer than 6 months, 2) age of 18 years or above, and 3) ability to read and write in Arabic. Exclusion criteria included: 1) history of diagnosed mental or cognitive disorders.

2.3. Data Collection

Data collected using self report format of data collection at patient's convenience. Patients who expressed interest to participate 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. Also, the patients informed that information will be used for the purpose of the study, and that their participation is voluntary and they have the right to withdraw at any time during the study and that their decision will not influence the quality of care they receive. Anonymity of the respondents ensured during and after study completion; and data secured and saved to provide anonymity. All data e kept in a closed cabinet at the Faculty of Nursing, University of Jordan. The whole package presented in Arabic language.

2.4. Instruments

The data collected using an Arabic version of self-reporting questionnaires. The instruments were:

Coping skills was measured using the abbreviated version of the COPE Inventory (Carver, 1997). 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). In this study, Cronbach's Alpha was .73.

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 (Beck, Steer, & Brown, 1996). 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). In this study, Cronbach's Alpha was .85.

Perceived social support was measured by Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988). This scale is 12-item self-reported scale to assess the perception of social support adequacy from the family, friends, and significant others such as health care team. Each item is measured using a 7-point Likert scale ranging from 1 (very strongly disagree) to 7 (very strongly agree). The scale has three sub scales, family (items 3, 4, 8, & 11), friends (items 7, 9, & 12), and significant others (items 1, 2, 5, & 10). The total score ranges from 7 to 84. The higher the score is the higher the perceived social support. This scale had good internal consistency for the scale as whole which was .88. In this study, Cronbach's Alpha for the subscales were .85 (family), .79 (friends), and .75 (others).

Stress 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. In this study, Cronbach's Alpha was .88.

Demographic profile: information about gender, age, marital status, duration of disease, smoking status, education level and work status were obtained form an investigator-developed checklist.

3. Result

3.1. Descriptive Characteristics

A total number of 164 patients completed the questioners. Patient's age ranged from 20 years to 85 years with a mean of 51.5 (SD = 14.9) years old. 62.8% (n = 103) of the patients were male, and 37.2% (n = 61) were female. In regards to the marital status, the majority of the patients 72.6% (n = 119) were married, while 12.2% (n = 20) were widow, 9.1% (n = 15) were single, and 6.1% (n = 10) were divorced. Considering the working status: 42.1% (n = 69) were not working, 26.2% (n = 43) were on full time work, 20.7% (n = 34) were retired, and 11% (n = 18) were on part time work. In relation to the smoking status 57.9% (n = 95) were non-smoker, and 42.1% (n = 69) were smoker. In addition the analysis showed that the duration of the medical diagnosis ranged from 1 year to 35 years, with a mean of 6.7 (SD = 6.4).

3.2. Psychosocial Health Factors

Stress: In regards of patient's stress level, the analysis (see **Table 1**) showed that, the stress level ranged from 14 to 63 with a mean of 41.5 (SD = 11.3). Considering that the possible range of score is 9 - 72. Also the analysis showed that 50% of the patients have a score between 34 and 41.9. The results indicate that patients, in general, had moderate level of stress.

3.3. Perceived Psychological Support

Regarding patients' perception of perceived social support, the analysis (see **Table 1**) showed that patients' highest perception of perceived social support was from others and family with mean scores of 21.8 (SD = 5.4) and 21.3 (SD = 5.4) respectively. However, patients had lower perception of social support from friends with score of 17.3 (SD = 6.2). In general, perception of social support from family, friends and other were at the moderate level give the possible range of score for each subscale to be 4 - 28 and the median scores for all subscales were almost equal and at the moderate to high level (23 - 26). The analysis is showing the lowest level of perception was support from friends although the scores seem to be at the moderate level.

3.4. Depression

Regarding the depressive symptoms, the analysis (see **Table 1**) showed that the depressive symptoms ranged from 0 to 53 with a mean of 15.9 (SD = 10.6). 50% of the patients has a depressive symptoms ranged from 8.2 and 21, and 50% of them has symptoms less than 15. In general the result indicates mild level of depression.

3.5. Coping

Regarding patients' coping skills using brief COPE scale (see **Table 1**), the analysis showed that the scores ranged from 40 to 104 with a mean of 71.4 (SD = 10.8). Considering that the possible range of score is 28 - 112, in addition the analysis showed that 50% of the patients' scores ranged from 65 to 77, with a 50% of them have a score less than 71. This result indicates that the patients have more tendencies to use effective coping strategies.

4. Bivariate Analysis

Using Pearson correlation coefficient (r), the analysis (see **Table 2**) showed that depressive symptoms has a significant negative correlation with social support ($r = -.25$, $p < .01$), in particular significant and negative perceived social support form family ($r = -.23$, $p < .01$), significant and negative with perceived social support from others ($r = -.25$, $p < .001$), but no significant relationship was found with perceived social support from friends. Moreover; depressive symptoms has a significant and positive correlation with psychological distress ($r = .27$, $p < .001$). On the other hand there was no significant relationship with the tendency to use effective coping strategies. In regards to psychological distress, the analysis showed a significant and positive correlation with the tendency to use effective coping strategies ($r = .25$, $p < .01$), which indicates higher level of stress related to more tendency to use effective coping strategies. In contrast there was no significant correlation was found with perceived social support either form family, friend, or others. Finally tendency to use effective cop-

Table 1. Psychosocial health status of patients diagnosed with Coronary Heart Disease in Jordan (N = 164).

Variable	M	SD	Min	Max	P25	P50	P75
Psychological distress	41.5	11.3	14	63	34	41.9	50.7
Social support-other	21.8	5.4	4	28	20	23	26
Social support-family	21.3	5.4	4	28	19.3	23	24.8
Social support-friend	17.3	6.2	4	28	12	18	23
Depression	15.9	10.6	0	53	8.3	15	21
Cope	71.4	10.8	40	104	65	71.6	77

Table 2. Correlation among psychosocial factors of patients diagnosed with Coronary Heart Disease in Jordan (N = 164).

	Psychological distress	PSS-Fa	PSS-Fr	PSS-other	Depression	Cope
Psychological distress	-					
PSS-Fa	.025	-				
PSS-Fr	.087	.39**	-			
PSS-other	.028	.77**	.43**	-		
Depression	.27**	−.25**	.09	−.25**	-	
Cope	.25**	.19*	.31**	.27**	.06	-

PSS-Fa: perceived social support-family. PSS-Fr: perceived social support-friend. PSS-Fr: perceived social support-other.

ing strategies has a significant and positive correlation with perceived social support ($r = .31$, $p < .001$), in particular significant and positive with perceived social support from friends, others, and family perceptively ($r = .31$, $p < .001$; $r = .27$, $p < .001$; $r = .19$, $p < .05$).

To assess the prediction power of psychological distress, cope, perceived social support from family, friends, and others on the depressive symptom among patients diagnosed with CHD, linear regression analysis was used. The results (see **Table 3**) showed that the entire model which contains the (cope, distress, perceived social support) was significant ($F = 5.2$, $p < .001$), and that all variables in the model were significant predictors. The variables explained 14.2% of the prediction power, mentioned that adj $R^2 = .13$, in addition the result indicates that perceived social support was a protective factor, where psychological distress consider a risk factor. To examine the most powerful predictors, linear (step-wise) regression test statistics was used, and the result showed that perceived social support from others was the most significant predictor ($F = 12.7$, $p < .001$).

5. Discussion

Coronary heart disease (CHD) considered a prevalence leading causes of death worldwide (WHO, 2010). Psychological factors play a significant role in development and progression of the disease. This study came to investigate the relationship between CHD and number of psychological and social factors; depression, stress, coping, and perceived social support. The results showed that the patients who diagnosed with CHD has a moderate psychological distress, mild depressive symptoms, moderate perceived social support, and more likely using effective coping strategies.

Recent studies identified depression and psychological distress as a significant risk factor among patients diagnosed with CHD, which play remarkable role in the development and prognosis of disease (Stafford et al., 2009; Jiang et al., 2002; Chandola et al., 2007; Albus, 2010; Tylee et al., 2011). However, patients from this study had mild depressive symptom and moderate level of psychological distress, which contradict with previous reports. On the other hand, perceived social support has been found to be moderate among patients, which indicates their ability to use the available support to manage stress, consequently; it will lower depression and psychological distress level. The results, in this context, supports previous findings that social support is a significant predictor of better outcome among patients diagnosed with CHD (Lett et al., 2005; Smith et al., 2002). Moreover; coping strategies were found to be used effectively by the patients in this study, which emphasize its role in enhancing wellbeing and decreasing associated negative feeling, this result support the other studies where they found that; the effective use of coping strategies mediate the effect of stress and anxiety among patients diagnosed with CHD (Zhang et al., 2008; Yu et al., 2011).

While the result of the study contradicts with the previous studies in regards of depression and psychological distress, it supported the stress-buffering hypothesis where they assume that people with little social support are more prone to the harmful effect of psychological distress on the health and wellbeing. Interpersonal relationship may affect the coping strategy of the individuals and facilitated certain kinds of healthy behaviors e.g. exercising. Interpersonal relationship with the family members has the strongest relationship with depression, that more effective relationship the lower depression level, consequently the better health outcome.

Perceived social support from others has the most prediction power of depression, consequently; encouraging the patient to verbalize his support system, and motivate this system during the course of treatment may play a major role in maintaining the wellbeing and decrease the risk of relapses.

Table 3. The prediction power of psychological distress, perceived social support (family, friends, and others), and cope on depression (N = 164).

Variables	B	SE	t	*p* value
Psychological distress	.24	.26	3.73	.001
PSS-Fa	−.13	−.07	−.57	.57
PSS-Fr	−.03	−.02	−.23	.81
PSS-others	−.42	−.21	−1.77	.08
Cope	.06	.07	.87	.39

PSS-Fa: perceived social support-family. PSS-Fr: perceived social support-friend. PSS-other: perceived social support-other.

6. Conclusion

Many psychological factors contribute to the development and prognosis of coronary heart disease, which consider one of the leading causes of death worldwide. Of these factors, depression and psychological distress were the most significant. The effect of these factors can vary among patients that depend on the coping strategies and the perceived social support. Health care providers need to consider the effect of social system of their patients on the prognosis of his/her condition, encourage the patient to utilize the available resources, motivate the support system to be part of the caring process, and involve them in the decision making process which may enhance the health outcome. This conclusion needs further studies. Moreover, primary health care providers need to assess the psychological wellbeing of their patient diagnosed with CHD, to develop care plans to meet their psychological needs, in addition, to refer them into mental health acre department when necessary to avoid any physical or psychological complications.

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