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Research article

Self-Reported Sleep Disorder, Anxiety and Depression in Iraqi Patients Post-Myocardial Infraction

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Abstract

Background: Myocardial infarction (MI) is distinguished by the necrosis of myocardial cells as a result of substantial and prolonged ischemia. Anxiety, problems sleeping, and feelings of depression are some of the most common psychosocial consequences of having a myocardial infarction. ***Aim***: The purpose of this study is to evaluate the effects of post-myocardial infarction on patients' levels of anxiety, depression, and quality of sleep. ***Method***: The collection of data from 94 individuals with MI was carried out according to a descriptive cross-sectional design. Sleep quality, depression, and anxiety were evaluated using standard questionnaires. ***Results***: 69.1% of the participants reported having trouble getting quality sleep. The percentage of individuals suffering from depression who have a MI According to the PHQ-9 scale, 51.1% of the participants exhibited signs of mild depression, while 40% of the participants exhibited signs of moderate anxiety. Both of these results were based on the participants' responses on the GAD-7 scale. ***Conclusion***: Patients who had recently suffered a myocardial infarction had poor sleep quality, and a substantial percentage of them also suffered from depression and anxiety.

Keywords: myocardial infarction, sleep quality, anxiety, depression.

اضطراب النوم والقلق والاكتئاب المبلغ عنه ذاتيا لدى المرضى العراقيين ما بعد احتشاء عضلة القلب

الخلاصة

الخلفية: يتميز احتشاء عضلة القلب (MI) بنخر خلايا عضلة القلب نتيجة لنقص تروية كبير وطويل. القلق ومشاكل النوم ومشاعر الاكتئاب هي بعض من العواقب النفسية والاجتماعية الأكثر شيوعا ما بعد حدوث احتشاء عضلة القلب. **الهدف**: الغرض من هذه الدراسة هو تقييم آثار ما بعد احتشاء عضلة القلب على مستويات المرضى من القلق والاكتئاب ونوعية النوم. **الطريقة**: تم جمع البيانات من 94 مريضا مصابا ب MI وفقا لتصميم مقطعي وصفي. تم تقييم جودة النوم والاكتئاب والقلق باستخدام الاستبيانات القياسية PHQ-9 و GAD-7. **النتائج**: أفاد 69.1٪ من المشاركين أنهم يواجهون صعوبة في الحصول على نوم جيد. النسبة المئوية للأفراد الذين يعانون من الاكتئاب الذين لديهم MI وفقا لمقياس PHQ-9، أظهر 51.1٪ من المشاركين علامات الاكتئاب الخفيف، في حين أظهر 40٪ من المشاركين علامات القلق المعتدل. واستندت هاتان النتيجتان إلى ردود المشاركين في الدراسة على مقياس GAD-7. **الاستنتاج**: المرضى الذين عانوا مؤخرا من احتشاء عضلة القلب لديهم نوعية نوم رديئة، ونسبة كبيرة منهم يعانون أيضا من الاكتئاب والقلق.

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INTRODUCTION

Myocardial infarction (MI) is described as necrosis of myocardial cells caused by severe and prolonged ischemia. It is typically, but not always, an acute symptom of coronary heart disease caused by atherosclerosis [1]. According to the World Health Organization (WHO), cardiovascular illnesses are one of the top global causes of death and disability [2]. In 2015, there were roughly 15.9 million cases of myocardial infarction worldwide [3]. Recent studies reveal that individuals with acute coronary syndrome are 7–10 years younger in the Middle East than in the West [4]. In the Middle East, the incidence of acute coronary syndrome among young (45 years) and elderly (> 45 years) patients is identical (76%) based on the number of percutaneous coronary procedures [4]. In-hospital mortality among patients with acute MI in a country like Lebanon is reported to be 7.8%, and mortality is a common occurrence among patients with complications [5]. The death rate due to CVDs in countries such as Saudi Arabia, the United Arab Emirates, Bahrain, and Qatar is estimated at 42%, 38%, 32%, and 23%, respectively [6]. A study conducted in the region of Mosul in Iraq indicated that single vessel disease (SVD) was the most prevalent (35%), followed by double vessel disease (DVD) and triple vascular disease (TVD) with approximately 23% each [7]. The aftereffects of MI may be physical or psychological in nature [8]. Myocardial infarction can result in a variety of physical complications, including tiredness and reduced physical activity [9]. Anxiety, fear of imminent death, social isolation, disturbed sleep, and depression are frequent psychosocial consequences of MI [9,10]. The psychosocial repercussions are a result of feelings of insecurity over future health and the dread of being unable to return to work or resume past activities [11]. Depression is a common complication following an MI incident, and research indicates that it increases the risk of future coronary events and coronary-related mortality [12]. According to reports from nations such as Saudi Arabia, 20.6% of post-myocardial infarction patients have depression [13]. Depression is an independent predictor of 40% and 33% of post-MI complications in female and male patients, respectively [14]. Female patients tend to experience higher levels of depression than male patients, and depression is an independent predictor of 40% and 33% of post-MI complications in female and male patients, respectively. Depression is linked to a 2.5-fold increased risk of new cardiovascular events and mortality [15]. As a result, the number of clinical research assessing the influence of depression treatment on cardiac outcomes has increased [16]. Sleep disordered breathing (SDB) is found in 43–66% of patients with acute MI, and patients with SDB are repeatedly subjected to hypoxia, elevated heart rate, and increased cardiac afterload [17]. There is a relationship between the timing of physiological sleep and the occurrence of vascular events, cardiac arrhythmias, and sudden death [18]. The present study aims to evaluate the effects of post-myocardial infarction on patients' levels of anxiety, depression, and quality of sleep.

METHODS

Study population

Evaluations were conducted on 49 post-myocardial infarction patients who planned to seek cardiovascular follow-up care at Baghdad Teaching Hospital. The eligibility criteria include being at least 18 years old, having been diagnosed with MI within the past month, and understanding and speaking Arabic. Exclusion criteria include: 1) patients with complications such as chest pain and arrhythmia at the time of clinic follow-up; 2) inability to complete the questionnaire due to acute symptoms or cognitive impairment; and 3) patients with a history of psychological disease (depression, sleep disorder, anxiety) and malignancy. Before enrollment in the study, each subject provides informed consent following a clinical and physical evaluation. The Baghdad Teaching Hospital's local research ethics committee authorized the study procedure, which was conducted in compliance with the Helsinki declaration (2013).

Outcome measurements

The presence of a depressive condition as evaluated using the Patient Health Questionnaire (PHQ), a self-administered version of the PRIME-MD diagnostic instrument for common mental disorders [19]. The PHQ-9 is the depression module, which scores each of the 9 DSM-IV criteria as "0" (not at all) to "3" (nearly every day). Meanwhile, the anxiety state was evaluated using the 7-item Generalized Anxiety Disorder Scale (GAD-7), which is a practical self-reported anxiety questionnaire that proved valid in primary care [20]. Both scales were validated after translation into the Arabic language.

Statistical Analysis

The results were statistically evaluated using SPSS-24 software. The Mann-Witney test was used instead of the t-test and the chi-square test was used to investigate the possible differences between groups. The hypothesis of this study was that a p value of less than 0.05 was accepted as statistically significant.

RESULTS

Ninety-four patients with MI were enrolled in the study. The results presented in Table 1 reveals the demographical characteristics of the participants. The mean age of patients at presentation was 60.35 ± 8.35 years (ranging from 45–78 years).

Table 1: Demographical data of participant.

	Sub group	n	%
Gender	Male	71	75.5
	Female	23	24.5
Income	Low income	59	62.8
	High income	35	37.2
Intervention	No	71	75.5
	Yes	23	24.5
Age group	<50	13	13.8
	50-70	70	74.5
	>70	11	11.7
Depression	No	19	20.2
	Mild	48	51.1
	Moderate	23	24.5
	Severe	4	4.3
	Very severe	0	0.0
Anxiety	No	23	24.5
	Mild	26	27.7
	Moderate	38	40.4
	Severe	7	7.4
Sleep	No sleep problem	29	30.9
	Sleep difficulty	65	69.1

The mean sleep score in patients with MI was 10.11±6.2, while the mean depression score in those patients was 7.69±4 and the mean anxiety score was 8.59±4.5. Regarding the detected incidence of depression, the results showed that most of the cases have mild depression (51%), with a 5–9 score according to the used scale, 25% of the cases are presented with a score of 10–14, and 4% of the patients demonstrate severe depression (Score > 14). No incidence of depression was reported in 20% of the studied cases (Score < 4) as shown in Figure 1.

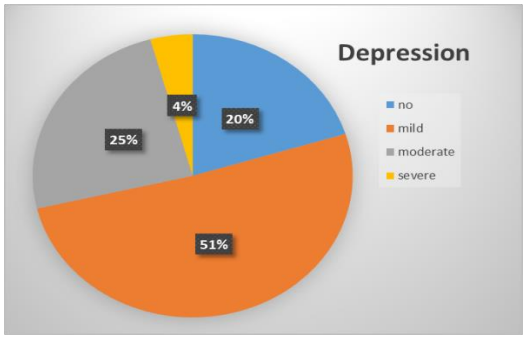

Figure 1: Distribution of depression cases in patient with MI.

Regarding the detected incidence of anxiety in the participants, Figure 2 shows that most of the cases have moderate anxiety (40%) with a score range of 10-14, while 28% of them demonstrates mild anxiety with a score range of 5-9 according to the used scale; however, only 7% of the cases are presented with severe anxiety with a score > 14. The results presented in evaluation of the association between depression and presence of sleep problems, Table 2 indicated significant differences between the patients having different severity rate of sleep disorders compared with those who do not report sleep problems (*P*<0.001).

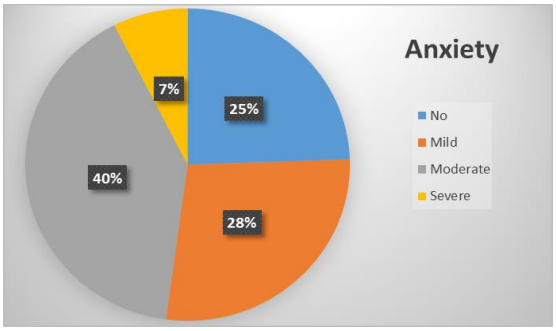

Figure 2: Distribution of anxiety cases in patient with MI.

Table 2: Correlation of depression in regard to sleep disorder in patient with MI.

Severity	No sleep problem n(%)	Sleep difficulty n(%)	Total n(%)	*P*-value
No	13(44.8)	6(9.2)	19(20.2)	
Mild	15(51.7)	33(50.8)	48(51.1)	
Moderate	1(3.4)	22(33.8)	23(24.5)	<0.001
Severe	0(0)	4(6.2)	4(4.3)	
Total	29(100)	65(100)	94(100)	

Correlation analysis between depression and sleep problem scores post-MI indicates positive association between the two scores, and as the depression score increases, the incidence of sleep difficulty increases (Figure 3).

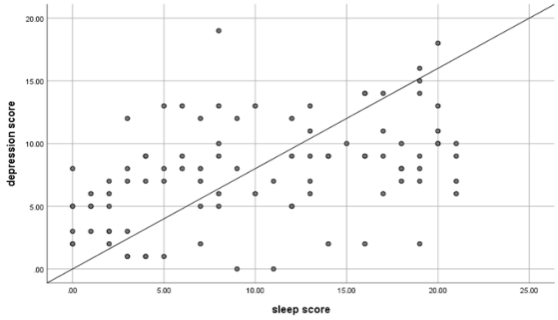

Figure 3: Correlation between sleep and depression scores sleep in patient with MI.

DISCUSSION

Psychosocial consequences of post-myocardial infarction may be highly prevalent in most of the affected patients. It is widely known that post-myocardial infarction people have a higher prevalence of depression and anxiety than the overall population [21]. Individuals and their networks report varying affects and ways of responding to a myocardial infarction; while some adjust successfully, others feel shock and continuous uncertainty about their treatment and future health [22,23]. Some patients may have altered senses of self and loss as a result of a change in their health [24]. Anxiety, fear of imminent death, social isolation, sleep disturbances, and depression are

typical psychosocial consequences of a MI. In the present study, 69% of the participants exhibited poor sleep quality. The results of this investigation were comparable to those of a study conducted in Oman among patients with MI, which likewise indicated that 61.1% had poor sleep quality [25]. According to a study conducted at East Carolina University on sleep quality (using the PSQI) and myocardial infarction reoccurrence, patients with poor sleep efficiency and poor overall sleep quality had a significantly greater incidence of myocardial infarction reoccurrence. Poor sleep quality is related with an increased risk of developing coronary artery disease and acute myocardial infarction, according to the literature [26]. Consequently, throughout the follow-up care that post-myocardial infarction patients get, an examination of their quality of sleep as well as any associated sleep problems has to be a standard component of the evaluation process. The majority of patients in this study (69%) were found to have a high level of difficulty sleeping, which is a higher percentage than the Swedish study that revealed this difference in results and a higher rate of sleep disturbance. The explanation for this result is because it is possible for MI to cause sleep disturbances following the illness because of anxiety and concerns regarding the effects of the condition. There is a possibility of a reduction in physical functioning, which would suggest a reduction in physical activity and exercise; this, in turn, could have a detrimental impact on the quality of sleep. It is possible that the MI is only part of the explanation; environmental variables like war, violence, and economic hardship could also be to blame. In this particular study on the prevalence of depression and anxiety, about half of the participants had experienced some level of mild depression (51.1%). According to the PHQ-9 scale, 20.2% of the participants had no depression, 24.5% had moderate depression, and 4.2% had severe depression. The majority of subjects also exhibit moderate levels of anxiety (40%). According to the GAD-7 scale, 24.5% of respondents reported having no anxiety, while 27.7% reported having mild anxiety, and 7.4% had severe anxiety. In contrast to the findings of this investigation, the incidence of depression in post-myocardial infarction patients was found to be quite low in a study that was carried out in Oman among individuals who had suffered from an MI. The vast majority of participants had few signs and symptoms of depression (82.2%). Only a small percentage of participants (5%) met the criteria for serious to moderate depression [25]. This high rate of depression in this study may be linked not only to the MI but also to the various factors, including the concern that the health care system has about the expenditures of health care and the absence of follow-up of patients over a significant amount of time. The findings of the current study are consistent with the findings reported by previous researchers. Patients diagnosed with acute myocardial infarction (MI) report having depressive symptoms at a rate of up to 65%, with 15 to 22% of these patients actually suffering from serious depression [27.]. The relationship between depression, cardiovascular disease, and mortality has been linked by a considerable body of research that has accumulated over the course of the previous two decades [28,29]. Depression was found to have a substantial correlation with mortality in patients who had been diagnosed with MI, according to the findings of two major community-based investigations [30,31]. Even after controlling for factors such as smoking status, gender, weight, activity level, blood pressure, and cholesterol levels, the findings of another study [32] showed that depression contributes to a greater chance of developing or dying of heart disease in people who are otherwise healthy. This was the case regardless of whether or not the participants smoked.

Conclusion

According to the findings of this study, Iraqi patients who have recovered from a myocardial infarction continue to suffer from a low quality of sleep, anxiety, and depression. This study highlights the significance of doing regular assessments in post-myocardial infarction patients using our finding in order to facilitate the early diagnosis and treatment of sleep issues, anxiety, and depressive symptoms.

Conflicts of Interest

Nothing declared by the authors.

Source of fund

No specific fund received.

Data sharing statement

Suplementary data can be provided by the corresponding author based of reasonable request.

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