Prevalence of Psychological Stress and Associated Risk Factors Among Hypertensive Patients in Jordan: Cross-Sectional Study

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ABSTRACT
Hypertension is considered one of the chronic illnesses that affect many individuals across the globe. It has been evident that stress is associated with hypertension. The current study aimed to assess the prevalence of stress among hypertensive men as well as determine the risk factors causing psychological stress in Jordan. This study used a descriptive correlation cross-sectional design. The researchers recruited 200 patients with hypertension from six hospitals located in the central part of Jordan. Data was collected from the participants through self report questionnaire. The study results revealed that the total scores of perceived stress among the study participants ranged from 4 to 42 (M= 18.17; SD= 8.18). Almost half of the study participants (40%) perceived normal level of stress ($0 \leq$ total stress subscale ≤ 14). The findings showed that gender (t = -1.99, B = -2.90, p = 0.048), educational Level (t = -2.39, B = -2.39, p = 0.02), health Status (t = 3.08, B = 1.67, p = 0.002), and sleep (t =2.45, B = 3.22, p = 0.02) were the significant predictors of stress among Jordanian patients with hypertension. This study contributed to the existing body of knowledge and can be considered as a baseline for future researcher in the area of stress. The health care providers in various medical departments should make effort to provide optimal care for patients with hypertension that directed toward decreasing the level of stress.

1. Introduction

Hypertension disease is a global modifiable risk factor for cardiovascular and cerebrovascular disorders. Hypertension imposes an important burden due to its high mortality, and morbidity (Mozaffarian et al., 2016). The prevalence of hypertension is likely to rise if preventative measures are not undertaken. Undiagnosed or untreated hypertension affects a large number of individuals globally, with variations among countries. More than 30% of hypertensive patients went undiagnosed, while only 54% of those who were diagnosed received treatment and 34% were under control. Hypertension is anticipated to rise by 7.2% from 2016 to 2030 (Benjamin et al., 2018).Every year, 9.4 million people die as a consequence of hypertension problems, and it is anticipated that by 2025, up to 1.58 billion adults will be affected (Roth et al., 2017). The people from Africa had the highest worldwide incidence of hypertension (30%), which was followed by those of Asian and Hispanic origins in comparison with Caucasians. In contrast, the lowest proportion was seen within the United States (Aggarwal et al., 2021; Agyemang, van der Linden, Chilunga, & van den Born, 2024).

Hypertension affects approximately 30% of the population in Arab nations (Tailakh et al., 2014). The level of incidence of hypertension in the Jordanian population is similar to the Arab world on average, with nearly one in every three Jordanian individuals having high blood pressure (Khader et al., 2019).Although there is proof that antihypertensive drugs are beneficial in treating hypertension and lowering the probability of strokes and ischemia, long-term pharmacological treatment can be costly(Jaddou et al., 2011). The discovery of alternative methods for avoiding the onset of hypertension would be a significant milestone in minimizing the risk of cardiovascular disease. Lifestyle changes recommended include weight loss, a nutritional plan rich in vegetables and fruits, low-fat dairy foods, exercise, and limiting alcoholic beverages. Over 100 randomized trials have shown that behavioral interventions for hypertension are effective(Moussouni, Sidi-Yakhlef, Hamdaoui, Aouar, & Belkhatir, 2022).

Psychological stress is an incident, or environmental requirement thought too complicated to cope with. A response is a physiological or psychological reaction caused by exposure to a stressful event. It is important to note that stress can subject some people to either short or long-term consequences, such as changes in neuroendocrine and immunological systems, which can lead to the occurrence of cardiovascular disease (CVD) conditions, including hypertension (Ayada, Toru, & Korkut, 2015). Stress is an illness caused by the body's response to external pressures and aberrant conditions that disrupt homeostasis. It includes daily experiences that raise physiological processes. When emotional stresses are present, the condition is known as psychological stress. Some current situations that might encourage or exacerbate stress include job-related stress and familial challenges, social disengagement, financial concerns, and violence(George, Davidson, El Masri, Meade, & Kolt, 2022; Jaddou et al., 2011).

Chronic emotional strain is associated with the occurrence of hypertension(Schaare et al., 2023). A study found considerable connections between coronary artery disease and more frequent episodes of stress within the home, more severe economic strain, and events in life that were more stressful than controls(Nation, Schneiderman, & McCabe, 2022). Under long-term stress, the ability to adapt to physical and biological stays restricted. If stressors build in excess, the individual feels increasingly overwhelmed, which can be hazardous and cause health problems for hypertensive patients(Trudel, Brisson, Gilbert-Ouimet, & Milot, 2018). Maintaining fewer social bonds than expected enhances reactivity to laboratory stress and produces a cumulative increase in blood pressure over time (Landsbergis et al., 2013; Son, Heo, Hyun, & Kwak, 2022).

Recurrent episodes of chronic or acute stress activate the hormonal and immunological systems, leading to the breakdown of the endothelium, inflammation of the arteries, and elevated blood pressure levels. The overstimulation of the sympathetic nervous system and the hypothalamic-pituitary-adrenocortical axis play a crucial role in the neural networks associated with stress-related high blood pressure development. These systems affect multiple bodily functions that regulate blood pressure balance(Ayada et al., 2015). Psychosocial stressors can cause increases in blood pressure in individuals who are already predisposed to biological and psychological factors. These cases of hypertension can result in alterations in the structure of the heart and blood vessels, causing inflammation and vasoconstriction. Ultimately, this contributes to raised blood pressure and the development of hypertension(Mariano, Amaral, Ribeiro, & Puga, 2022; Schaare et al., 2023).

This study provides vital insights into the association between psychological health and the treatment of long-term conditions byrecognizing mental stresses and their influence on patients with hypertension. The results can enlighten healthcare practitioners and policymakers about the imperative of including psychological assistance in hypertension care plans, with the ultimate goal of enhancing client results and quality of life.There have notbeen previously investigated relationships between various stresses and hypertension, but there have been few attempts to clarify these relationships. Therefore, the current study aimed to assess the prevalence of stress among hypertensive men as well as determine the risk factors causing psychological stress in Jordan.

Research Questions

1. What is the prevalence rate of stress among Jordanian patients with hypertension?

2. What are the predictors of stress among Jordanian patients with hypertension?

Methodology

Design

This study used a descriptive correlation cross-sectional approach to fulfill the research aim. This design intends to investigate the relationship between two or more variables. This is congruent with the aim of this study which examined the relationship between stress and demographics.

Setting

This study was conducted on six hospitals located in the central part of Jordan (i.e., Amman, Zarqa, & Alsalt). Two hospitals (one private and one governmental) were selected from each city. Those hospitals were chosen as they situated in large Jordanian cites and include patients from wide range of socioeconomic backgrounds. The patients rooms were the site of data collection.

Population and Sampling

The target population of this study was all Jordanian patients with hypertension. On the other hand, the accessible population was those Jordanian patients with hypertension that received care on the selected hospital. The patients were included in this study if the meet the following criteria: 1) Being at least 18 years old. 2) Being already diagnosed with hypertension. 3) Received care at the selected hospitals. 4) Have the ability to read and understand Arabic. 5) Available during the data collection time. 6) Agreed to participate in the present study. Conversely, patients were excluded from participation if they have any medical or psychiatric conditions that hinder them participation. The eligible patients were selected through a non probability convenience sampling method.

In relation to the sample size, the researcher used power analysis technique through G power software on PC. The following parameters were employed: power of 80 %, medium effect size of 0.15, significance level (alpha) of 0.05 and the selected test will be F test family, multiple linear regression. The yielded sample size equals 118. However, to avoid the problem of incomplete questionnaires the researcher approached 200 patients.

Instrumentation

This study will used two types of questionnaires; patients' demographics sheet, and the stress subscale of Depression Anxiety Stress Scales - Long Form (DASS-42).

Patients Demographic Sheet

The researcher designed this tool to measure the patients' demographics. These demographics included marital status, gender, age, educational level, employment status, exercise level, smoking status, residential area, co-morbid conditions, and sleep status.

Depression Anxiety Stress Scales - Long Form (DASS-42)

The researchers of this study used the stress subscale of the DASS-42 tool to measure the prevalence of stress among the study participants. The DASS-42 instrument is a self report questionnaire that designed to illustrate the common features or symptoms of depression anxiety and stress. DASS-42 has been translated into several languages and

The literature showed that DASS-42 presumed good transcultural validity. Nowadays, both the clinicians and the researchers have used the DASS-42 for screening of psychological problems (mainly depression anxiety and stress) in non clinical (healthy people) and clinical groups of patients with diverse diagnosis). DASS-42 incorporated three subscales that each has 14 items: stress (DASS-42 Stress), anxiety (DASS-42 Anxiety) as well as depression (DASS-42 Depression). The stress subscale assess the manifestations of stress such as impatience, irritable/over-reactive, being easily upset/agitated nervous arousal, and difficulty relaxing. Each item of the DASS-42 is scored on a 4-point Likert scale ranging from 0 ("did not apply to me at all") to 3 ("applied to me very much"). The score of the total DASS-42 is calculated by summing all the items. The total score is ranged from 0 to 126 with higher score means higher level of psychological problems.

Additionally, the score of each subscale can be calculated by summing the subscale items together and it is ranged from 0 to 42. The score for each subscale is interpreted using the following categories: normal level of stress ($0 \leq$ total stress subscale ≤ 14), mild level of stress ($15 \leq$ total stress subscale≤ 18), moderate level of stress ($19 \leq$ total stress subscale ≤ 25), severe stress level($26 \leq$ total stress subscale ≤ 33), and lastly extremely severe stress level (Total stress subscale ≥ 34).. The

psychometric properties of the tool have been tested by several researchers and the results revealed that DASS-42 has good reliability and validity scores among different populations.

Data Collection Procedures

The researchers approached the head nurses of the selected hospitals and briefed the study to them. The data collection occured at different hospital departments (including medical/surgical floors, critical care units, and emergency department). The researchers contacted the heads of these departments and set a plan for data collection during their shift. The head nurse of each department introduced the researchers for the patients, and then leave. The researchers initially screened the patients against the study inclusion and exclusion criteria. The researchers distributed the information sheets for the eligible participants who were selected through convenience sampling technique. Those patients who expressed interest in participation were given informed consent to sign. After that the researcher distributed the study questionnaire for the selected participants. The researchers were available in the patients room to respond to any concern from the participants. Lastly, the researcher collected the filled questionnaires and keep them on a locked cabinet.

Ethical Considerations

Ethical principles of health care research were adhered and maintained throughout the course of this study. At first the researchers were obtained ethical approvals from the University of X and the participating hospitals as the study proposal was revised by Institutional Review Boards. The participants were fully informed about the purpose of this study and their commitment in relation data collection procedure by using patients information sheet. The participation was involuntary and the participants will sign an informed consent before filling the study questionnaire. The participants' responses were confidential and privacy was given to the participants during the study.

Data Analysis Plan

The researcher used Statistical Package for Social Sciences (SPSS) for data analysis purpose. Both descriptive and inferential measures were employed. Initially, descriptive measures including measures of central tendency and dispersion were used to describe the participants demographics and the prevalence rate of stress . Concerning the second research inferential measures (including correlation and multiple linear regression) were used to verify the relationship between stress and demographics. Statistical level (i.e. alpha) was set at 0.05.

Results

Characteristics of the study sample

Table 1 presents the demographics and other characteristics of the participants. The study sample consisted of 200 participants. The participants' age ranged from 24 to 60 years with a mean age of 37.24 years (SD = 6.807). The sample was predominantly female (n = 152, 76.00%), the majority of the participants resided in urban areas (n = 124, 62.00%), most participants were having undergraduates degrees (n = 146, 73.00%). In terms of employment, the majority were currently working (n = 166, 83.00%), Marital status data showed that most participants were married (n = 170, 85.00%). In relation to smoking status, a significant number of participants were non-smokers (n = 132, 66.00%). Health status information revealed that the majority did not have any other chronic diseases (n = 137, 68.50%). Participation in exercise indicated that most participants did not engage in sports (n = 139, 69.50%). Finally, sleep patterns showed that a majority of the participants reported getting enough sleep daily (n = 130, 65.00%).

Table 1: Characteristics of the study sample (n = 200)

Variable	Mean	SD
Age	37.24	6.807
Variable	**Frequency**	**Percent**
Participant Gender		
Female	152	76.00%
Male	48	24.00%
Place of Residence		
Urban (city)	124	62.00%
Non-urban (suburban, countryside, or desert)	76	38.00%
Educational Level		
Middle School	8	4.00%
High School	7	3.50%
Undergraduate	146	73.00%
Graduate	39	19.50%
Professional Status (Employment)		
I am currently working (or have a job)	166	83.00%
I don't currently work	34	17.00%
Marital Status		
Single	26	13.00%
Married	170	85.00%
Divorced	4	2.00%
Smoking Status for You		
Absolutely non-smoker	132	66.00%
Currently a smoker	47	23.50%
Former smoker	21	10.50%
Health Status		
I don't have other chronic diseases	137	68.50%
I have diabetes	29	14.50%
I have heart disease	4	2.00%
I have other diseases	30	15.00%
Participation in Sports		
I exercise	61	30.50%
I don't exercise	139	69.50%
Sleep		
Get enough sleep every day	130	65.00%
Don't get enough sleep every day	70	35.00%

Prevalence Rates and Levels of Stress

Table 2 summarized the degrees and levels of stress in the current study. The total scores of perceived stress among the study participants ranged from 4 to 42 (M= 18.17; SD= 8.18). For the purpose of identifying the levels of stress that experienced by the study participants, the researchers of the study used the following five categories to allocate the study participants. Almost half of the study participants (40%) perceived normal level of stress ($0 \leq$ total stress subscale ≤ 14). About 21 % of the study participants reported mild level of stress ($15 \leq$ total stress subscale ≤ 18). Similarly, 22% of the participants encounter moderate level of stress ($19 \leq$ total stress subscale ≤ 25). Approximately, 13 % of the participants fit in the category of severe stress ($26 \leq$ total stress subscale ≤ 33). On the other hand, only few participants (6 %) perceived extremely severe level of stress (Total stress subscale ≥ 34).

Table 2: degrees and levels of Stress among study participants (n = 200)

Stress Level	**Frequency**	**Percent**
Normal	80	40.00%
Mild	41	20.50%
Moderate	43	21.50%
Severe	25	12.50%
Extremely Severe	11	5.50%
Total	200	100.00%
Descriptive Statistics	**Value**	
Minimum	4	
Maximum	42	
Mean	18.165	
Standard Deviation	8.17815	

The researchers constructed table 3 to illustrate the item analysis of stress subscale. About 20 % of the study participants reported that they almost always felt that I was rather touchy. Furthermore, fourteen percent of the participants showed that that they almost always felt that they were using a lot of nervous energy. Conversely, only 6 % of the participants reported that almost always the found it difficult to tolerate interruptions to what they were doing. Similarly, about 4 % of the participants showed that they almost always intolerant of anything that kept them from getting on with what they were doing

Table 3: Item analysis for Stress (n=200)

Item number	**Item**	**Never n (%)**	**Sometimes n (%)**	**Often n (%)**	**Almost Always n (%)**
Q1	I found myself getting upset by quite trivial things	10 (5.0%)	102(51.0%)	62(31.0%)	26(13.0%)
Q6	I tended to over-react to situations	23 (11.5%)	101 (50.5%)	54(27.0%)	22 (11.0%)
Q8	I found it difficult to relax	26 (13.0%)	114 (57.0%)	49(24.5%)	11 (5.5%)
Q11	I found myself getting upset rather easily	15 (7.5%)	94 (47.0%)	68(34.0%)	23 (11.5%)

Q12	I felt that I was using a lot of nervous energy	25 (12.5%)	93 (46.5%)	54(27.0%)	28 (14.0%)
Q14	I found myself getting impatient when I was delayed in any way (eg, lifts, traffic lights, being kept waiting)	53 (26.5%)	93 (46.5%)	35(17.5%)	19 (9.5%)
Q18	I felt that I was rather touchy	14 (7.0%)	82 (41.0%)	65(32.5%)	39 (19.5%)
Q22	I found it hard to wind down	36 (18.0%)	96 (48.0%)	53(26.5%)	15 (7.5%)
Q27	I found that I was very irritable	18 (9.0%)	95 (47.5%)	61(30.5%)	26 (13.0%)
Q29	I found it hard to calm down after something upset me	26 (13.0%)	96 (48.0%)	60(30.0%)	18 (9.0%)
Q32	I found it difficult to tolerate interruptions to what I was doing	54 (27.0%)	91 (45.5%)	44(22.0%)	11 (5.5%)
Q33	I was in a state of nervous tensions	32 (16.0%)	102 (51.0%)	48 (24.0%)	18 (9.0%)
Q35	I was intolerant of anything that kept me from getting on with what I was doing	55 (27.5%)	110 (55.0%)	28(14.0%)	7 (3.5%)
Q39	I found myself getting agitated	46 (23.0%)	109 (54.5%)	31(15.5%)	14 (7.0%)

Correlation between demographics and stress

For exploring the relationship between the participants' demographics and stress degrees the researchers conducted Pearson and Spearman Correlation measures. The results indicated that there was significant positive correlation between participation in exercise and stress ($r = 0.17$; $P= 0.01$). Other demographics did not have any significant correlations with stress. The results of correlations are revealed in table 4.

Table 4: Correlation between demographics and stress (n = 200)

Demographic	Correlation coefficient	P value
Age [a]	-0.05	0.52
Gender [b]	-0.02	0.82
Place of Residence [b]	0.08	0.25
Educational Level [b]	-0.04	0.62
Professional Status (Employment) [b]	0.04	0.60
Marital Status [b]	0.01	0.87
Smoking Status [b]	-0.13	0.08
Health Status [b]	0.12	0.11
Participation in Exercise [b]	0.17*	0.01
Sleep[b]	0.12	0.10

Predictors of Stress

In order to verify the predictive effects of participants demographics on stress, multiple linear regression model has been conducted. The results of the regression model are summarized in table 5. The overall model is statistically significant (F = 3.450, p = 0.001), indicating that the predictors collectively explain a meaningful portion of the variance in stress (R^2 = 0.154). The findings showed that gender (t = -1.99, B = -2.90, p = 0.048), educational Level (t = -2.39, B = -2.39, p = 0.02), health Status (t = 3.08, B = 1.67, p = 0.002), and sleep (t =2.45, B = 3.22, p = 0.02) were the significant predictors of stress among Jordanian patients with hypertension. Other variables, such as age, place of residence, professional status, marital status, smoking status, and participation in sports, do not show statistically significant effects on stress. The confidence intervals for these predictors indicate the range within which the true values likely fall, providing additional context for their impact.

Table 5: Predictors of stress (n = 200)

Variables	**B**	**Std. Error**	**Beta**	**t**	**P value**	**95.0% Confidence Interval for B**	
						Lower Bound	**Upper Bound**
Age	-0.013	0.093	-0.011	-0.143	0.886	0.824	35.588
Gender	-2.895	1.454	-0.152	-1.991	0.048*	-0.198	0.171
Place of Residence	2.335	1.202	0.139	1.942	0.054	-5.763	-0.026
Educational Level	-2.387	1.006	-0.181	-2.372	0.019*	-0.037	4.706
Professional Status (Employment)	-0.048	0.852	-0.004	-0.056	0.955	-4.373	-0.402
Marital Status	-3.172	1.649	-0.144	-1.923	0.056	-1.729	1.633
Smoking Status	-0.650	0.888	-0.054	-0.732	0.465	-6.425	0.081
Health Status	1.667	0.541	0.221	3.082	0.002*	-2.403	1.102
Participation in Sports	2.296	1.289	0.130	1.782	0.076	0.600	2.734
Sleep	3.220	1.313	0.188	2.451	0.015*	-0.246	4.838
Dependent Variable: stress		**F**	**Sig.**	**R**	**R Square**		
		3.450	0.000	0.393	0.154		

In this section the researchers compared and contrasted the identified results in the current study with those results in the previous literature. Moreover, interpretations for the study results were provided

using the personal reflections of the researchers and other available explanations in the related literature. This section started with the discussion of the major study findings incorporates the levels of perceived stress and the identified predictors of stress, and then implications for the health care providers were presented alongside the study limitations. In the last subsection the researchers provided a conclusion for the whole study.

Levels of Perceived Stress

The study results showed that there is considerable portion of the study participants reported that they perceived normal level of stress and only small percentage of the participants (6 %) experienced extremely severe level of stress. In contrast to this study finding, Sarkar, et al (2019) found that most of the Indian patients (84.3%) perceived considerable level of stress. The variation between our study findings and those of Sarkar, et al (2019) could be attributed to the using of different sampling strategies and size.

Several explanations might be provided to why the Jordanian patients with hypertension in this study were perceived normal degrees and level of stress. One possible contributing factor is the impact of culture. It has been evident that the attitude and cultural customs concerning stress are varied among different cultures. It seems that acknowledging or expressing high degrees of stress are not allowed or socially acceptable in the Jordanian culture. Other explanation is the impact of the utilized coping strategies. It might be that those Jordanian patients could exhibit and used different coping methods that helped them to effectively manage and control the perceived stress. Exploring and identifying the impact of coping strategies are warranted as area for future research. The third possible explanation is the role of social support networks. Those Jordanian patients could have significant sources of socially support (like family members, friends or other community sources) that enabled them to decrease the level of encounter stress. The last explaining factor is the patients adaptation with chronic disease. In this study, those Jordanian patients may normalize their stress degrees as they adapted with the long term condition they have, mainly the hypertension and its associated stressors.

Predictors of stress

The study findings revealed that there were four main predictors of stress among Jordanian patients with hypertension. The first identified predictor is gender. The results reported that male patients with hypertension were more likely to experience higher level of stress. There is limited research that examined the impact of gender on the level of perceived stress among hypertension patients. Therefore, the researchers compared the present study results with other similar studies that investigated this issue among different group of participants. For example, in contrast to our study findings, Graves et al (2021) found that female college students were more likely to perceive higher degrees of stress than male students in Florida, United States of America. The difference between the results of our study with those results Graves et al study (2021) might be due to conducting the studies on different populations with varied age groups and health status.

The justification of this study results may be depend on several factors. Firstly, the literature showed that the variation among both genders could perceived different levels of stress because of the role of different social, psychological as well as biological factors. For instance, men could demonstrate stronger biological stress response than women, therefore, those men experience higher level of perceived stress. Secondly, some cultural and social expectations may play role in this experience. For example, in Jordan, it is expected that men will be the providers for their families. This social pressure could lead higher degrees of stress among men, particularly for those who have chronic disease like hypertension. Lastly, the impact of stress expression style on stress degree is evident. It has been evident that female were more likely to be emotional and express unpleasant feeling like stress. This variation in stress expression may add to internal degrees of perceived stress among men. The second identified predictor is the educational level of the participants. According to the study results those patients with higher educational attainments or qualifications were more likely to perceive lower level of stress. Similar results were evident in the literature, for instance, Muñoz and

Santos-Lozada, (2021) found that working-age adults in the United States with college degrees were experienced lower levels of psychological distress than those with a high school diploma. The following rationales might help in understanding why educational qualifications have impact on level of stress among patients with hypertension. Initially, it is expected that higher education will equip the persons with more problem solving skills and this will assist them to deal with stress successfully. Moreover, usually those individuals with higher academic degrees have better access to the resources such as information, social support and health care services that all help in decreasing the stress degrees. Lastly, the higher education will enable the people to have less financial stress as they could have better and secure job positions and higher income.

The third revealed predictor of stress was health status. Those patients who had other chronic illnesses beside hypertension were more likely to perceive higher stress levels than those patients who did not have. Three possible explanations could be provided for this study results. Having multiple chronic illnesses will results in more persistent physical symptoms that could lead fatigue, pain and discomfort that all contribute to higher level of stress. Furthermore, dealing will multiple chronic diseases could necessitate continuous monitoring of the vital health parameters, frequent medical appointments, and following a complex treatment regimen that make the patients overwhelmed because of the increased health burden. The last explanation for this study results is that having multiple chronic illnesses might be associated with the more psychological symptoms such as feeling of helplessness, depression and anxiety that contribute to the elevated level of stress.

The fourth and last identified predictor is sleep status. Based on the study results, those patients who did not get enough sleep every day were more likely to experience higher stress degrees than those who did get. This study results is consistent with the previous findings in the literature. For instance, Alwhaibi and Al Aloola (2023) found that there was a positive relationship between sleep status and experienced stress among college students in Saudi Arabia. A possible justification for is that inadequate sleep may lead to higher level of cortisol, stress hormone, in the body which results in exaggerated stress response. Additionally, several essential cognitive functions (like decision making, memory as well as concentration) may be impaired because of sleep deprivation. In this case the coping abilities of those individual will be negatively affected and they will not be able to handle stressors appropriately. Lastly, those individuals with suboptimal sleeping patterns might have less energy level and more fatigue. Therefore, they will not be able to manage daily activities adequately and become overwhelmed and stressed.

Implications for health care providers

This study has significant implications for the different aspects of health care field such as administration and policy making, education, practice and research. Hospital policies for dealing with the hypertension patients should be developed and modified based on the findings of the present study. Moreover, hospital administrators should conduct continuous educational programs for the health care providers about dealing with stress of those patients with hypertension. Hiring committees should hire those health care providers who are familiar with topic of stress among hypertension patients. In relation to the education aspects, the curricula of the health care providers (including medicine and nursing curricula) should be changed to reflect the findings of this study about those factors that contribute for stress among hypertension patients. Additionally, the clinical instructors may use the findings of the present study to inform their students (including nursing and medical students) about the most updated knowledge concerning stress associated with hypertension. In relation to practice, the health care providers should make more attention for those patients who are at more risk for developing higher degrees of stress based on the identified predictors of this study. Concerning the research, it is recommended to replicate this study using larger and more represented sample. Moreover, investigating the used coping strategies by patients with hypertension is imperative. Lastly, future research should compare between stress level and stressors between those patients with hypertension and other patients populations like diabetes and heart disease.

Limitations

Regardless to the fact that this could have significant results and implications, the readers of this study should acknowledge the following limitations. Firstly, the descriptive design is weak in terms of providing results concerning the causal affiliations (such as the cause and effect relationship between demographics and stress). Secondly, the use of self-report questionnaire could lead to objective results, however, the participants might provide socially accepted responses . Thirdly, the generalization of the study results may be limited to those Jordanian patients who lived in the middle region of Jordan.

Conclusion

Having a chronic illness like hypertension could contribute to stress among affected individuals. Stress may increase the health burden of the hypertension patients and let them overwhelmed. This study conducted to examine the prevalence rate of stress and identify its predictors among those patients with hypertension. This study contributed to the existing body of knowledge and can be considered as a baseline for future researcher in the area of stress. The health care providers in various medical departments should make effort to provide optimal care for patients with hypertension that directed toward decreasing the level of stress. Ultimately, the quality of life of those patients will be improved and patients will have better health outcomes. This study provided directions for future researchers who would like study the topic of stress among patients with hypertension and other chronic illnesses.

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