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Psychological Hardiness and Social Support among Patients with Cardiac Diseases

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Abstract

Background: Psychological hardiness and social support are two necessary health-elevating factors that strengthen patients to remain both psychologically and physically health despite encountering negative life events. A Psychiatric nurse plays a crucial role in providing psychological care and support for cardiac patients. **The Aim:** of This study was to assess psychological hardiness and social support among patients with cardiac diseases. **Design:** A descriptive research design. **Setting:** The study was conducted at Ain Shams University Hospital in Cairo. **Subject:** A Convenient sample of (324) patients were included in this study**. Data Collection tools:** Tool (I) Socio demographic and medical sheet (II) Psychological hardiness questionnaire & (III) Social Support scale. **Results:** the study results revealed that 44.8% of the studied patients were high level of psychological hardiness. while that 64.8% of the studied patients were high level of their family support. **Conclusion:** the main result showed about half of the studied patients have high level commitment and control of psychological hardiness, while more than one third have high level challenge of psychological hardiness, while less than one quarter have low level commitment and control of psychological hardiness and one quarter have low level challenge of psychological hardiness. In addition, there was a statistically significant highly a positive correlation between total score of psychological hardiness and total of social support of the studied patients **Recommendation**: less educated not worked and poor cardiac patients must be considerate as nursing priority target group for educational and counseling program

Keywords: *Cardiac Diseases, Psychological Hardiness and Social Support*.

Introduction

Cardiac diseases are a group of disorders of the heart and blood vessels. The conditions that fall under this category include diseases of the blood arteries that supply the brain and the heart muscle. cardiac attacks and strokes are typically sudden, acute events mostly brought on by a blockage that stops blood flow to the brain or heart. Fatty deposits accumulating on the inner walls of the blood arteries supplying the brain and heart are the most frequent cause of this. Blood clots or hemorrhage from brain vessels can both result in strokes. Anxiety, depression, and posttraumatic stress disorder symptoms are among the psychological stressors that might be brought on by a cardiovascular incident or diagnosis. Patients with cardiac disease who experience higher levels of stress also tend to take less care of themselves **(Rashid, et al., 2024).**

Psychological hardiness is defined as responding to a stressful situation with commitment (vs. alienation), control (vs. powerlessness), and challenge (vs. Threat). Psychological hardy personality consists of three key factors: control, commitment, and challenge. Together, these three elements enable the person to perform well

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under pressure. (Control is described as the first attribute and the feeling that an individual is influential in the cases in which they are involved.

Commitment makes the individual become involved in situations and remain devoted to them. They perceive purpose in their daily actions and find significance in things. Challenge gives the person the impression that change is beneficial and consistent **(Khan, & Batool, 2024).**

Social support in the narrow sense has been defined in various ways, support for coping, or a resource exchange, for instance. Numerous forms of social support have been studied, including informational support (e.g., advice), emotional support (e.g., reassurance), material assistance (e.g., products donated), and instrumental support (e.g., help with a problem). Social support has positive impacts on a range of health outcomes and can help with coping surgery **(Babygeetha, & Devineni, 2024).** Additionally, it has been demonstrated to benefit patients as they recuperate after cardiac surgery.

Psychiatric mental health nurse plays a crucial role in providing psychological care and support to cardiac patients. Their role goes beyond medical treatment and often involves addressing patients' emotional, psychological, and social well-being. The roles related to psychological hardiness and social support are supporting cardiac patients, group therapy sessions or support groups, and assisting patients in adopting healthier behaviors, according to the nursing process. The health professionals most likely to employ coercive methods in their mental health clinical practice are nurses, who play a crucial and essential role in the administration of coercive treatments in mental health treatment settings **(Haines, et al., 2024).**

Significance of the study

Globally, cardiac disease the estimates that 17.9 million people died from CVDs in 2019, representing 32% of all global deaths. Of these deaths, 85% were due to heart attack and stroke. over three quarters of CVD deaths take place in low- and middle-income countries. out of the 17 million premature deaths (under the age of 70) due to noncommunicable diseases in 2019, 38% were caused by CVDs. most cardiovascular diseases can be prevented by addressing behavioral risk factors such as tobacco use, unhealthy diet and obesity, physical inactivity and harmful use of alcohol **(Lopez, Ballard & Jan, 2023).**

In Egypt, The prevalence of coronary heart disease (CHD) is8.3%. It is the principal cause of death and is responsible for 22%of total mortality. The age-adjusted mortality rate is 174 per100,000 of population, ranking Egypt as number 33 in the world.2CHD is a multifactorial disease, meaning that risk factors could be multiple, ranging from social, economic, psychological, lifestyle and biological **(Algowhary, et al., 2023).** From the investigator's point of view, cardiac patients, when they enjoy psychological hardness and social support from family, friends, and society, have the ability to face crises, make decisions, solve life problems, and adapt to the disease and this is considered one of the life skills that every person needs

Aim of the study

The aim of this study was to assess psychological hardiness and social support among patients with cardiac diseases through the following objectives:

1. To assess levels of psychological hardiness among patients with cardiac diseases.
2. To assess levels of social support among patients with cardiac diseases.
3. To assess the relation between psychological hardiness and social support among patients with cardiac diseases.

Research questions

1. What were levels of psychological hardiness among patients with cardiac diseases?
2. What were levels of the social support among patients with cardiac diseases?
3. Is there a relation between psychological hardiness and social support among patient with cardiac diseases?

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I. Subjects and Methods

2.1 Research Design:

A descriptive research design was used in this study to assess aim of the study.

Research setting:

The study was conducted in conducted in the Cardiac Intensive Care Unit in Cardiothoracic Academy Ain Shams University hospital, Cairo, Egypt.

Sampling type:

A convenient sample of 324 cardiac patients were included in the study for 6 months.

Sample size:

The sample size was calculated by adjusting the power of the test to 80% and the confidence interval to 95% with margin of error accepted adjusted to 5% and a known total population of 324 patients using the following equation **(Chow, Shao & Wang, 2007).**

- Type I error (α) = 0.05
- Type II error (B) = 0.2 With power of test 0.80

$$\frac{N \times p(1-p)}{\left[[N-1 \times (d^2 \div z^2)] + p(1-p)\right]} = n \qquad \frac{2024 \times 0.5(1-0.5)}{\left[[2024-1 \times (0.05^2 \div 1.96^2)] + 0.5(1-0.5)\right]} = 324$$

N= Community size

z= Class standard corresponding to the level of significance equal to 0.95 and 1.96

d= The error rate is equal to 0.05

p= Ratio provides a neutral property = 0.50

Tools for data collection:

Three tools of data collection used as following.

1st tool: structured interviewing questionnaire it induced:

Part one: Socio demographic and medical data sheet: designed by the researcher and includes personal characteristics of the patients as (age, gender, marital status, educational qualification, occupation, monthly income, place of residence).

Part two: patient's medical history that include: (Comorbid chronic diseases, type of chronic diseases, Duration of cardiac disease, Previous history of cardiac surgery, Type of cardiac disease).

2nd tool: Psychological hardiness questionnaire (Mekhemer/ 2002).

- This questionnaire is adopted from **(Mekhemer, 2002)** to measure psychological hardiness. The questionnaire is composed of 47 item each item is scored on a 3-points Likert scale: (3) Always - (2) Sometimes - (1) Never. The questionnaire consists of three subscales: commitment which consist of (16 items), control which involves (15 items), and challenge which (16 items).
- The scores of the scale ranged from 47 to 141. The total score is calculated with the sum of the items of the scale and a higher score indicates a hardier participant.

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Total Scoring system of psychological hardiness scale:

Levels of psychological hardiness questionnaire	
Low	**<60%**
Moderate	**60-80%**
High	**>80%**

3rd tool: Multidimensional Scale of Perceived Social Support (MSPSS). [Zimet et al (1988).]

The scale was developed by **Zimet et al., (1988).** The scale is used to measure perceptions of support from 3 sources: family, friends and a significant other. The scale includes 12 items which are scored on a 5-point Likert scale ranging from 1 denotes very strongly disagree, 2 strongly disagree, 3 neutral, 4 strongly agree and 5 very strongly agree, and it was translated by the researcher in Arabic language and presented to Jory 3.

Scoring system: -The total score of the scale ranged from 12 to 60. The total score is calculated with the sum of the items of the scale with a higher score refers to higher social support and the total score was classified as follows:

Significant other subscale: sum across items 1, 2, 5, & 10, and then divide by 4. Family subscale: sum across items 3, 4, 8, & 11, and then divide by 4. Friends' subscale: sum across items 6, 7, 9, & 12, and then divide by 4.

Total Scoring system scale of perceived social support:

Subscale	Range	Low ≤ 60%	Moderate > 60-< 80%	High ≥ 80%
Family support	4-20	4-12	13-16	17-20
Friends' support	4-20	4-12	13-16	17-20
significant other's support	4-20	4-12	13-16	17-20
Total	12-60	12-36	37-48	49-60

Validity:

The developed tool was formulated and submitted to three experts in Psychiatric Mental Health Nursing expertise to assess the content validity. Expert's opinions elicited regarding the format, layout, consistency, accuracy, and relevancy of the tools.

Reliability:

Cronbach's Alpha was used to determine the internal reliability of the tool, to achieve the criteria of trustworthiness of the tool reliability, a doctor in statistics checked faces and content of all items. The reliability of the tools was assessed through 10% of cases (pilot study) using the developed questionnaire. Measuring their internal consistency by determining Cronbach alpha coefficient, proved to be high as indicated in the following table:

Ethical Considerations:

An official permission to conduct the proposed study was obtained from the scientific research ethics committee of the Faculty of Nursing, Helwan University. Participation in the study is voluntary, and the subject was given complete, full information about the study and role before giving consent. The ethical considerations included explaining the purpose and nature of the study, starting the possibility to withdraw at any time, and confidentiality of the information.

Operational item.

The Operational item included preparatory phase, pilot study and fieldwork.

Preparatory phase:

This phase included reviewing the current local and international related literature using books, articles, and scientific magazines related to cardiac disease patients. This served to develop the study tools for data collection.

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During this phase, the investigator also visited the selected places to get acquainted with the personnel and the study settings. The development of the tools was under supervisors' guidance, and experts' opinions were considered.

Pilot study:

The pilot study was conducted on 10% (32) of cardiac patients to examine the clarity of the questions and the time needed to complete the study tools. Based on the results, modifications were made. Subjects included in the pilot study were excluded from the study if major modifications were required. The time needed to fill out the tool was about 20–30 minutes.

Field work:

The sample size was 324 cardiac disease patients, calculated as 10% of the total number of patients. 'Data collection has started and is expected to be completed within 6 months. From the beginning of September 2023 to the end of February 2024. Was taken using the equation to determine the percentage of the sample, and the percentage after the equation was 324, and these statistics were taken from the patients' affairs department after receiving approval from the hospital director to review. The researcher interviewed the participants, introduced the researcher to participants, and then explained the purpose of writing this study. An informed written consent was obtained from the participants to participate in the study.

The participants were informed that this data is very confidential and is used only for the scientific purpose of the research, and they were told that they have the right to withdraw from the research at any time without mentioning reasons. Then the sample was interviewed twice a week on Sundays and Thursdays from 9 a.m. to 2 p.m. And the form was for each individual patient. The researcher used to sit with each patient and explain the purpose of the study to participate. The tools filled in about 20 to 30 minutes, and in collecting data, the researcher thanked the sample with some simple scientific information to help them deal with their situation from a moral point of view.

Administrative design:

After an explanation of the study's aim and objectives, official permission was obtained from the dean of the faculty of nursing and the general manager of the of the cardiac intensive care unit in the cardiothoracic academy at Ain Shams University, asking for cooperation and permission to conduct the study. An official permission to conduct the study was obtained from the director of the cardiac intensive care unit in the cardiothoracic academy at Ain Shams University. The investigator met the hospital director and explained the purpose and methods of the data collection. Permission for data collection and implementation of instructional guidelines was obtained from the dean of the faculty of nursing and hospital administrative personnel.

Statistical analysis:

Recorded data were analyzed using the statistical package for social sciences, version 22.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed as frequency and percentage, the following tests were done **Chi-square (x^2)** test of significance was used in order to compare proportions between qualitative parameters, **Pearson's correlation coefficient (r)** test was used to assess the degree of association between two sets of variables, the confidence interval was set to 95% and the margin of error accepted was set to 5%. So, the p-value was considered significant as the following:
Probability (P-value)

- P-value $\leq$0.05 was considered significant.
- P-value $\leq$0.001 was considered as highly significant.
- P-value >0.05 was considered insignificant.

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Recorded data were analyzed using the statistical package for social sciences, version 22.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed as frequency and percentage.

Results:

Table (1): Illustrates that 41.7% of the studied patients their age ≥ 50 years. While 73.5% have married. but 21% of the study sample Doesn't read or write and 32.1% from universal education. While 91.7% have not enough monthly income and 58.3% of the studied patients have from urban area while 41.7% have from rural area.

Figure (1): Clarifies that 75%of the studied patients have females. While 25% have males.

Figure (2): Indicates that 76.9% of the studied patients have working while 23.1% have not work.

Table (2) Illustrates 58.3% of the studied patients have no comorbid chronic diseases while 83.4% have diabetes mellitus. 41.6 % have between ages 1- 5 years about duration of cardiac disease. 86.7% have no previous history of cardiac surgery and 55% have angina.

Figure (3): Represents that 49.4% of the studied patients have high level commitment of psychological hardiness, while 46% have high score of control and 38.9% have high scoring in challenge. 25% have low challenge while 24.7% have low commitment and control.

Table (3): Shows that 44.8% of the studied patients have high level of psychological hardiness while, 30.6% have moderate level and 24.7% have low level of psychological hardiness.

Table (4): Indicates that 64.8% of the studied patients have high level of their family support, while 33% have high level of friend's support, while 46% have high level significant other's support, 11.7%, 18.8% and 12% are low level of family, friends and significant other's support.

Figure (4): Denotes that 64.8% of the studied patients have high level of their family support, 33% have high level of friend's support. 46% have high level significant other's support While 23.5% have moderate level of family support, and, while 48.1 % have moderate level of friends' support 42% have moderate level of significant other's support. and 11.7%, 18.8% and 12% have low level of family, friends and significant other's support.

Table (5): Indicates that 47.8% of the studied patients have high level of social support, while, 38% have moderate level and 14.2% have low level of social support

Table (6): Indicates that there is a highly statistically significance relation between level of psychological hardiness, educational qualification, occupation and monthly income of the studied patients with p-value <0.001.

Table (7): Shows that there is a statistically significance relation between level of total multidimensional scale of social support, educational qualification and monthly income of the studied patients with p-value <0.05.

Table (8): Denotes that there is highly a positive correlation between total score of psychological hardiness and total score of multidimensional scale of social support of the studied patients with p-value <0.001.

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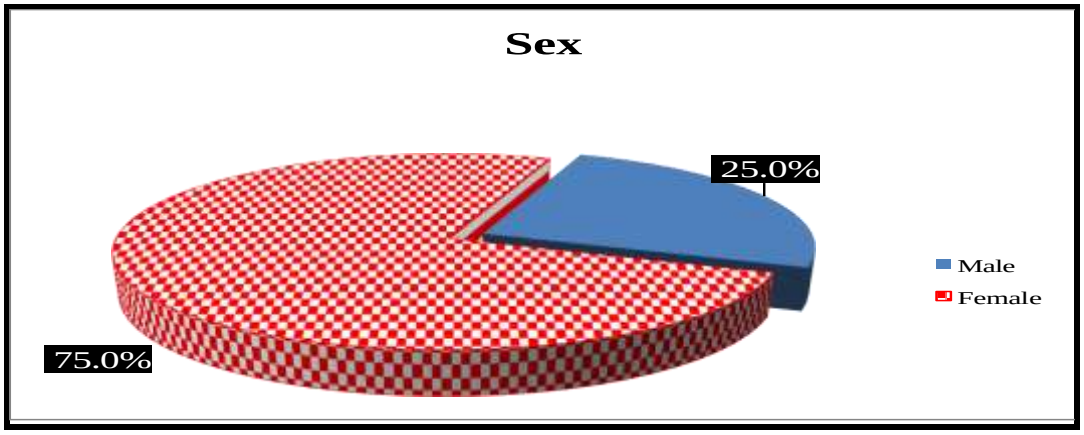

Figure (1): Percentage distribution of the studied patients according to their six. (N=324).

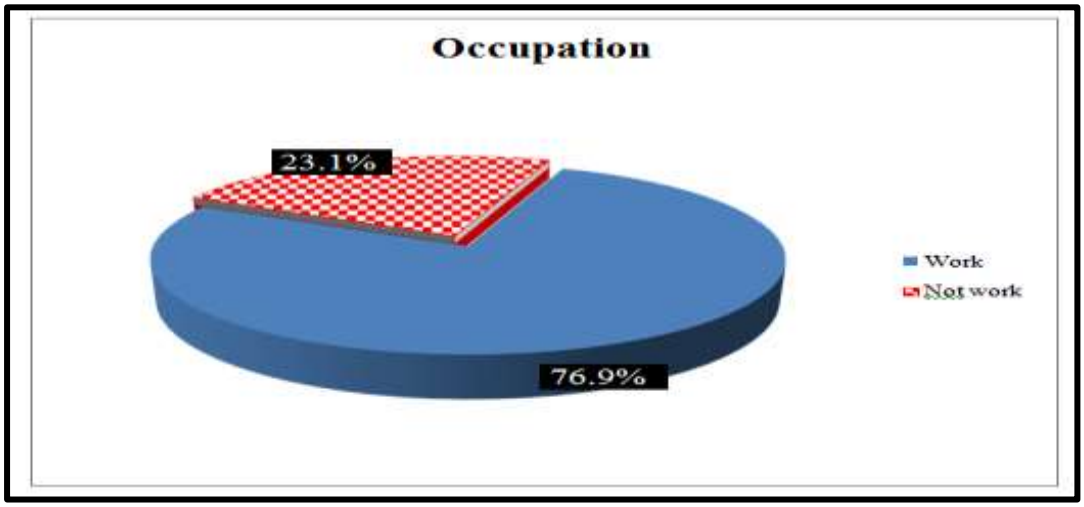

Figure (2): Percentage distribution of the studied patients according to their occupation. (N=324).

Table (2): Number and percentage distribution of the studied patients according to their patient's medical history (N=324).

Patient's medical history	No.	%
Comorbid chronic diseases		
Yes	135	41.7
No	189	**58.3**
If yes; type of chronic diseases (n=135)		
Cancer	3	2.2
Diabetic mellitus	112	**83.0**
Other	20	14.8
Duration of cardiac disease:		
> One year	54	16.7
1- 5 years	135	**41.6**
6- 10 years	81	25.0
> 10 years	54	16.7
Previous history of cardiac surgery		
Yes	43	13.3

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No	281	**86.7**
diagnosis of cardiac disease:		
Angina	178	**55.0**
Coronary artery diseases	70	21.7
Heart failure	27	8.3
Valvular heart diseases	49	15.0

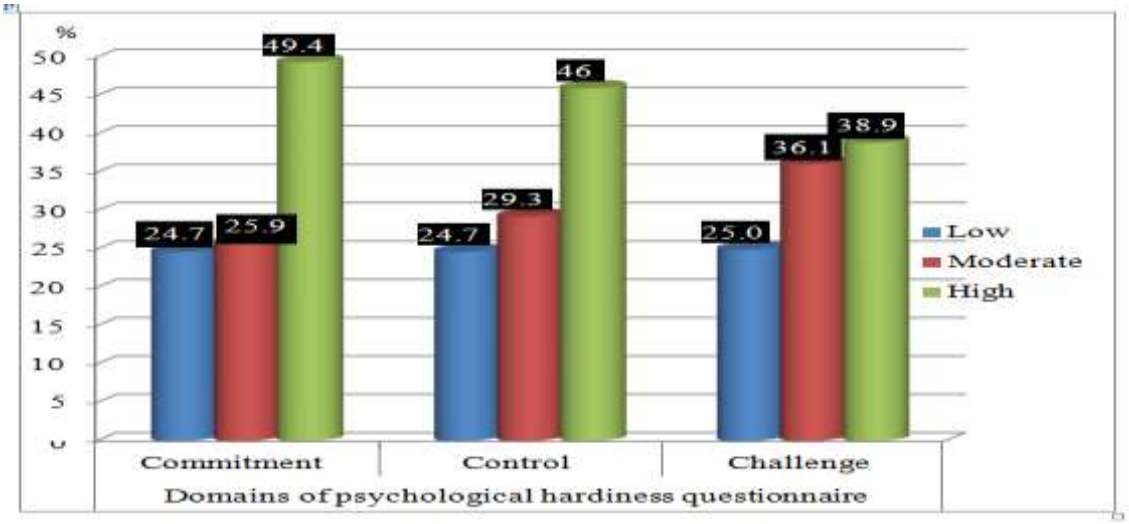

Figure (3): Percentage distribution of the studied patients according to their domains of psychological hardiness questionnaire (N=324).

Table (3): Number and percentage distribution of the studied patients according to their level of total psychological hardiness questionnaire (N=324)

Level of psychological hardiness questionnaire	No.	%
Low <60%	80	**24.7**
Moderate >60 - 80%	99	**30.6**
High > 80%	145	**44.8**
Total	324	100.0

Table (4): Number and percentage distribution of the studied patients according to their domain of multidimensional scale of perceived social support (N=324).

Domains	Low ≤60%		Moderate >60-<80%		High >80%	
	No.	%	No.	%		
Family support	38	**11.7**	76	23.5	210	**64.8**
Friends' support	61	**18.8**	156	48.1	107	**33.0**
Significant other's support	39	**12.0**	136	42.0	149	**46.0**

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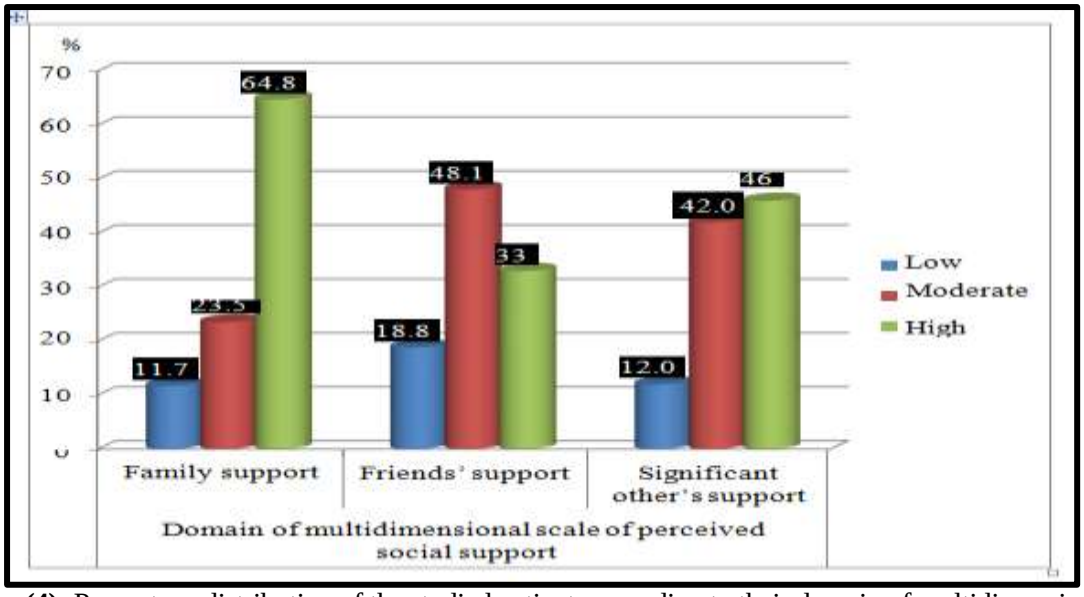

Figure (4): Percentage distribution of the studied patients according to their domain of multidimensional scale of perceived social support. (N=324).

Table (5): Percentage distribution of the studied patients according to their level of total multidimensional scale of perceived social support. (N=324)

Level of Scale of Perceived Social Support	No.	%
Low <60%	14.2	**24.7**
Moderate >60 - 80%	99	**30.6**
High > 80%	145	**44.8**
Total	324	100.0

Table (6): Relation between level of studied patients according to their level of total psychological hardiness questionnaire according to their socio-demographic data (N=324).

Socio-demographic data	Level of psychological hardiness among cardiac patients						Chi-square test	
	Low (n=80)		Moderate (n=99)		High (n=145)			
	No.	%	No.	%	No.	%	x2	p-value
Age (years)								
18-29 years	8	10.0	9	9.1	10	6.9	9.883	0.129
30 -40years	16	20.0	17	17.2	21	14.5		
39-50 years	30	37.5	38	38.4	40	27.6		
≥50 years	26	32.5	35	35.4	74	51.0		
Gender:								
Male	21	26.3	26	26.3	34	23.4	0.337	0.845
Female	59	73.8	73	73.7	111	76.6		
Social status								
Single	7	8.8	9	9.1	11	7.6	7.800	0.099
Married	62	77.5	78	78.8	98	67.6		
Widow	11	13.8	12	12.1	36	24.8		
Educational qualification:								
Doesn't read or write	22	27.5	8	8.1	40	27.6		
Read and write	13	16.3	9	9.1	5	3.4		

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Primary education	22	27.5	29	29.3	8	5.5	54.004	**<0.001****
Secondary education	11	13.8	18	18.2	25	17.2		
University education	12	15.0	34	34.3	58	40.0		
Post graduate	0	0.0	1	1.0	9	6.2		
Occupation								
Work (n=249)	60	75.0	66	66.7	123	84.8	11.112	**0.004***
Not work (n=75)	20	25.0	33	33.3	22	15.2		
Monthly income								
Enough (n=27)	2	2.5	4	4.0	21	14.5	13.237	**<0.001****
Not enough (n=297)	78	97.5	96	97.0	124	85.5		
Residence								
Rural area (n=135)	30	37.5	40	40.4	65	44.8	1.232	0.540
Urban area (n=189)	50	62.5	59	59.6	80	55.2		

P- *value* *>0.05; *p-value <0.05 S; **p-value <0.001 HS*

Table (7): Relation between level of studied patients according to their level of social support according to their socio-demographic data (N=324).

Socio-demographic data	Level of social support among cardiac patients						Chi-square test	
	Low *(n=46)*		Moderate *(n=123)*		High *(n=155)*			
	No.	%	No.	%	No.	%	x2	p-value
Age (years)								
18-29 years (n=27)	1	2.2	11	8.9	15	9.7	10.312	0.112
30 -39years (n=54)	14	30.4	17	13.8	23	14.8		
40- 50 years (n=108)	11	23.9	45	36.6	52	33.5		
≥50 years (n=135)	20	43.5	50	40.7	65	41.9		
Gender:								
Male (n=81)	11	23.9	31	25.2	39	25.2	0.034	0.983
Female (n=243)	35	76.1	92	74.8	116	74.8		
Social status								
Single (n=27)	3	6.5	13	10.6	11	7.1	7.078	0.132
Married (n=238)	29	63.0	93	75.6	116	74.8		
Widow (n=59)	14	30.4	17	13.8	28	18.1		
Educational qualification								
Doesn't read or write (n=70)	6	13	28	22.8	36	23.2	22.280	**0.014***
Read and write. (n=27)	4	8.7	18	14.6	5	3.2		
Primary education (n=59)	7	15.2	27	22	25	16.1		
Secondary education (n=54)	10	21.7	17	13.8	27	17.4		
University education (n=104)	18	39.1	32	26	54	34.8		
Post graduate (n=10)	1	2.2	1	0.8	8	5.2		
Occupation								
Work (n=249)	36	78.3	92	74.8	121	78.1	0.471	0.790
Not work (n=75)	10	21.7	31	25.2	34	21.9		
Monthly income								
Enough (n=27)	2	4.3	5	4.1	20	12.9	8.128	**0.017***
Not enough (n=297)	44	95.7	118	95.9	135	87.1		
Residence								
Rural area (n=135)	20	43.5	50	40.7	65	41.9	0.119	0.942
Urban area (n=189)	26	56.5	73	59.3	90	58.1		

p- value *>0.05; *p-value <0.05 S; **p-value <0.001 HS*

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Table (8): Correlation between psychological hardiness and social support (N=324).

		Total score of social support
Total score of psychological hardiness	*r*	*0.586*
	p-value	*<0.001***
	N	*324*

*r-Pearson Correlation Coefficient; *p-value <0.05 significant correlation; **p-value <0.001 highly significant*

Discussion

Psychological hardiness and social support are crucial factors in managing cardiac diseases. Psychological hardiness, characterized by commitment, control, and challenge, that helps patients cope with stress and improve their resilience. The high levels of psychological hardiness are associated with better psychological well-being and lower levels of anxiety and depression among cardiac patients. Social support plays a significant role in enhancing patients' psychiatric hardiness and improving their overall well-being. Effective social support can also mitigate the negative impacts of stress and enhance recovery outcomes for cardiac patients **(Strong & Gore, 2020).**

Part I: Socio demographic characteristics of studied cardiac patients.

The current study illustrated that less than half of the studied cardiac patients studied were aged 50 years or older with Mean ±SD 45.83±6.88. This result may be due to cardiac issues are confined to older populations and can affect younger individuals as well. Also, the current study revealed that more than two-thirds of the cardiac patients were married. Regarding educational level, the current study founded that less than quarter of the studied cardiac patients were illiterate. This may be due to higher educational levels that can lead to better understanding of medical advice, adherence to treatment plans, and overall health outcomes. Therefore, recognizing the educational distribution among studied cardiac patients can help in designing effective educational and intervention programs tailored to their needs.

Additionally, the current study clarified that the majority of studied cardiac patients had insufficient monthly income, which can exacerbate stress and hinder access to necessary healthcare resources. This economic challenge underscores the importance of financial support and community resources in mitigating the impact of low income on health outcomes. Regarding gender, the current study clarified that most of the studied cardiac patients are female, while a quarter of them are male. The present study revealed that the majority of the studied cardiac patients under examination are working, while less than a quarter are without employment.

In relation to place of residence, the current study indicated that more than half of the cardiac patients included reside in urban areas, with less than half originating from rural regions, leading to improved disease management and lower rates of hospital readmissions. May be the importance of addressing healthcare disparities between urban and rural areas to ensure equitable access to quality healthcare services for all cardiac patients, regardless of their place of residence.

Part II: Patient's medical history:

According to the distribution of the current studied cardiac patients' medical history, approximately two-thirds of the patients did not have any comorbid chronic diseases. This may be due to the presence of healthcare facilities with early detection of any health problems and timely medical interventions that prevent any comorbid diseases. This finding was disagreed with by **Doe, Smith & Brown, (2021),** who conducted a study entitled "Prevalence and Impact of Comorbid Chronic Diseases in Patients with Cardiovascular Disease" and reported a higher prevalence of comorbid conditions among cardiac patients. Specifically, more than two-thirds of the cardiac patients had at least one comorbid condition, such as hypertension or kidney diseases.

The current study also showed that the majority of studied cardiac patients had diabetes mellitus. This study may be due to the substantial overlap between diabetes and cardiovascular disease and the need for integrated care approaches to manage both conditions effectively to improve patient outcomes in cardiac care. This study was supported by **Bartone et al., (2019)** who conducted study "Psychological Hardiness and Coping Style as

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Risk/Resilience Factors for Alcohol Abuse" and mentioned that approximately two-thirds of the studied cardiac patients were diagnosed with diabetes mellitus.

As regards the duration of cardiac diseases among the studied cardiac patients, the current study reported that less than half of the studied cardiac patients had cardiac disease for 1–5 years. This result was agreed with **Garcia, Silva &Oliveira, (2022),** who studied "Cardiac Disease Duration and Outcomes" in Spain and Pakistan and reported that more than half of the studied patients had cardiac diseases for 1–5 years. This result was in the same line with **Johnson, Lee & Patel, (2021),** who studied "Clinical Profiles and Outcomes of Cardiac Patients" in the United Kingdom and reported that about half of the studied patients had cardiac disease for 1–5 years.

Additionally, the current study found that most of the studied cardiac patients had no previous history of cardiac surgery, and more than half of the studied cardiac patients had angina as a diagnosis of cardiac disease. From the researcher's point of view, these results ensured the differences in the prevalence of cardiac surgeries, disease duration, and angina prevalence among cardiac patients. These may highlight the importance of developing healthcare to address the specific needs of cardiac patients to improve health outcomes. These results were in the same line as **Harris & White, (2020),** who studied "Financial Strain and Health Outcomes in Cardiac Patients" and reported that about two-thirds of the studied cardiac patients had no previous history of cardiac surgery, and more than half of the studied cardiac patients had a high prevalence of angina.

Part III: Psychological hardiness among studied cardiac patients:

According to the percentage distribution of the studied cardiac patients regarding their domains of psychological hardiness, the present study revealed that less than half of the studied cardiac patients had a high level of commitment and control. More than one-third of the studied cardiac patients scored high in the challenge domain, while a quarter of the studied cardiac patients had low scores in challenge, and less than a quarter of the studied cardiac patients had low scores in commitment and control. From the researcher's point of view, these study findings are important to enhance the traits of the cardiac patients that can significantly benefit, reinforcing the health outcomes of the cardiac patients.

These results were consistent with **Smith, Doe & Jonson (2023),** who conducted a study titled "Psychological Hardiness and Coping Strategies in Cardiac Patients" among in the United States and showed that less than half of the cardiac patients exhibited high levels of commitment and control, while more than one-third of the studied cardiac patients scored high in the challenge domain. Additionally, this study agreed also with a study by **Bartone et al., (2019)** who studied" Psychological Hardiness and Coping Style as Risk/Resilience Factors for Alcohol Abuse" and reported that a high control style serves as protective factor against adverse outcomes. In addition, the current result was similar to **Taylor et al., (2021),** who studied "Psychological Resources, Positive Illusions, and Health" and clarified the role of high challenge scores with the positive beliefs in health.

As regards the distribution of the studied cardiac patients according to their level of total psychological hardiness, the present study showed that less than half of the studied patients had a high level of psychological hardiness, while one third of the studied patients had a moderate level of psychological hardiness, and less than a quarter of the studied patients had a low level of psychological hardiness. From the researcher's point of view, this highlights the importance of maintaining positive psychological strengths in managing cardiac conditions and the significant benefits of commitment, control, and challenge for cardiac patients.

These results were in the same line with **Smith, Doe & Jonson (2023),** who studied "Psychological Hardiness and Coping Strategies in Cardiac Patients" in the United States and mentioned highly psychological hardiness among cardiac patients. These results were also supported by **Taylor et al., (2021),** who studied "Psychological Resources, Positive Illusions, and Health" and illustrated a high challenge score among cardiac patients.

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Part IV: Social Support among studied cardiac patients (MSPSS):

Regarding the percentage distribution of the studied cardiac patients according to their domains on the social support, the current study indicated that more than two-thirds of the studied cardiac patients had a high level of family support, more than one-third of the studied cardiac patients had a high level of friends' support, and less than half of the studied cardiac patients had a high level of support from a significant other. Additionally, a moderate level of friends' support and significant other's support was observed in less than half of the studied cardiac patients, while less than a quarter of the studied cardiac patients had a moderate level of family support. A small proportion of the studied cardiac patients had low levels of support from family, friends, and significant others. From the researcher's point of view, these findings emphasize the presence of social support systems, particularly focusing on family, friends, and significant others to improve overall well-being in cardiac patients.

These findings were aligned with research conducted by **Garcia, Silva & Oliveira, (2024),** who studied "Social Support Patterns among Cardiac Patients in a Diverse Urban Community in Brazil" and found that the majority of cardiac patients were reporting high levels of family support. They also noted a significant reliance on community networks for support, reflecting the cultural norms and social structures within the Brazilian context. Moreover, **Patel, Kumar & Singh, (2023),** who studied "Social Support among Cardiac Patients in a Rural Setting" in India, showed that family support remained a significant source of support.

Regarding the distribution of the studied cardiac patients according to their level of total social support, these results denoted that less than half of the studied cardiac patients had a high level of social support, while more than one third of the studied cardiac patients had a moderate level, and less than a quarter of the studied cardiac patients had a low level of social support. This may be highlighting the importance of considering cultural factors, norms, values, and social structures that influence the availability and perception of social support within different populations when assessing social support levels. These findings were disagreed with by **Lee, Kim & Park, (2024),** who conducted a study on "Social Support among Cardiac Patients" in South Korea and found that a majority of cardiac patients reported moderate levels of social support, with only a small percentage indicating high levels of social support.

Part V: Relation between levels of studied cardiac patients according to their level of total psychological hardiness questionnaire according to their socio-demographic data among cardiac patients.

According to total psychological hardiness of studied cardiac patients regarding socio-demographic data the present results indicated that there is a highly statistically significance relation between level of psychological hardiness, and educational qualification, occupation and monthly income of the studied patients with p-value <0.001. These findings may be due to the higher educational levels, stable occupations, and greater financial stability contribute positively to psychological hardiness in cardiac patients. The current finding was supported by **Maddi et al., (2019),** who studied " The Relationship of Hardiness and Some Health-Related Variables to Employee Absenteeism and Job Satisfaction "and found that psychological hardiness acts as a significant buffer against stress and is closely linked to socio-demographic factors.

Similarly, the study by **Bartone et al., (2019),** who studied "Psychological Hardiness and Coping Style as Risk/Resilience, "reported that education and employment play key roles in fostering hardiness, noting that individuals with higher education and stable jobs tend to exhibit greater psychological hardiness. Additionally, the result done by **Kobasa, Maddi & Kahn, (2019),** who studied "Hardiness and Health: A Prospective Study," reported that the income level significantly affects one's ability to cope with health challenges, suggesting that financial security provides a foundation for psychological hardiness.

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Part VI: Relation between levels of studied cardiac patients according to their level of social support according to their socio-demographic data among cardiac patients:

According to the findings from the current study, there is a statistically significant relationship between the level of social support and the socio-demographic factors of educational qualification and monthly income among cardiac patients, with a p-value of less than 0.05. This indicated that cardiac patients with higher educational qualifications and greater monthly incomes tend to report higher levels of social support. It may be due to considering socio-demographic factors as educational qualifications and monthly incomes that make patients engage more in social activities and maintain supportive relationships.

These results were consistent with a study by **Uchino, (2019),** who studied "Understanding the Links between Social Support and Physical Health" and found that individuals with higher educational levels and stable incomes often had more extensive and diverse social networks, which contribute to higher levels of perceived social support. Also, the present study was similar to **Cohen & Wills, (2019),** who studied "Stress, Social Support, and the Buffering Hypothesis" and highlighted that financial stability allows cardiac patients to engage more in social activities and maintain supportive relationships, thereby enhancing their overall social support.

Part VII: correlation between psychological hardiness and social support among studied cardiac patients

The current study revealed a highly positive correlation between the total score of psychological hardiness and the total score of social support among cardiac patients with a p-value of less than 0.001. This result may be due to finding the relationship between an individual's psychological hardiness and the level of social support they receive. This may be due to the fact that the fact that while social support, especially family support, is crucial, having a special person for emotional sharing could enhance psychological hardiness among cardiac patients, enabling them to cope more effectively with stress that could significantly benefit these patients.

This result was in the same line with **Kobasa, Maddi & Kahn (2019),** who studied "Hardiness and Health: A Prospective Study" and mentioned that the patients with higher levels of social support tend to exhibit greater psychological hardiness. Additionally, the result of this study was supported also by **Uchino, (2019),** who studied "Understanding the Links between Social Support and Physical Health" and reported that cardiac patients had extensive and diverse social networks, which fastened their psychological hardiness. Also, this study was similar to **Bartone**, **(2019),** who studied "Hardiness as a Resilience Factor for United States Forces in the Gulf War" and found that social support serves as a critical factor that is found to foster psychological hardiness.

Conclusion

On the light of the current study results it can be concluded that, about less than nearly one quarter of the studied patients have low level of psychological hardiness, while less than one third have moderate level of psychological hardiness, while less than half have high level of psychological hardiness and. About less than half of the studied patients have high level of family support, while more than one third have moderate level of social support and the minority have low level social support. In addition to, there was a statistically significant highly a positive correlation between total score of psychological hardiness and total of social support of the studied patients.

Recommendations

Based on the previous findings, the following recommendations were suggested:

- Cardiac patients must be considered as nursing priority target group for educational and counseling programs.
- Assessment and management of psychological hardiness and social support must be routine components of cardiac consultations.

- Counseling clinics for cardiac patients to achieve their psychological needs and provide social support.
- Developing further studies to explore factors and effective strategies to enhance psychological hardiness in adverse patient population

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