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Perceived Social Support: Correlation with Depression and Symptom Severity in Atrial Fibrillation

Mohamed Adwi [*1,2]; Mohamed Elmoshy [1]; Ismail Sadek [1]; Mohamed Elsheikh[1]; Mohammed Abdel-Hassib [3]

[1] Department of Psychiatry, Faculty of Medicine, Al-Azhar University, Cairo, Egypt.

[2] Research Department, Shezlong Inc., Egypt

[3] Department of Internal Medicine, Faculty of Medicine, Al-Azhar University, Cairo, Egypt.

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***Corresponding author**

Email: mohamed.adwi.206@azhar.edu.eg

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ABSTRACT

Background: This study aimed to examine the relationship between perceived social support and the severity of atrial fibrillation [AF] symptoms among depressed and nondepressed AF patients.

The aim of the work: This study was designed to investigate the correlation between depression with perceived social support in patients with atrial fibrillation.

Participants and procedures: This cross-sectional study was conducted to assess depression using the Patient Health Questionnaire depression scale [PHQ-9] along with Mini Neuropsychiatric Interview [MINI] and Multidimensional Scale of Perceived Social Support [MSPSS] to assess social support. AF was graded according to the modified European Heart Rhythm Association [mEHRA].

Results: Our study involved a total of 93 atrial fibrillation patients; 32 were non-depressed compared to 61 with depression; 41.9% of the participants were female, with a mean age of 63.2 ± 10.89. Most participants [59.2%] were classified as having grade II AF. Only 17.2% of the participants reported low levels of social support. Among depressed patients, 15.1% reported severe depression. Linear regression analysis found that social support was negatively correlated with depression scores [β = -0.735]. Multivariate logistic regression revealed that social support was negatively associated with depression [OR = 0.465, P = 0.001]. Ordinal regression showed that low social support was the most significant variable affecting AF grades [OR = 35.939, P = 0.024].

Conclusion: Higher social support was negatively associated with depression, and lower social support was significantly associated with higher AF grades. This implies that healthcare practitioners should prioritize the psychological aspects to improve the health outcomes of patients with AF.

Keywords: Atrial Fibrillation; Depression; PHQ-9; Social Support; MSPSS.

INTRODUCTION

Atrial fibrillation [AF] is the most common cardiac arrhythmia, affecting more than 30 million patients globally, with an increasing prevalence of other cardiovascular comorbidities and advancing age [1, 2].

AF is associated with serious medical conditions such as heart failure, cardiac arrest, and stroke, leading to increased mortality and morbidity and resulting in medical and financial burdens [3].

Atrial fibrillation symptoms can severely impair everyday functioning and lower patients' quality of life [4], both physically and psychologically. Atrial fibrillation [AF] and depression are two common medical conditions that can have detrimental effects on cardiovascular health. A high incidence of depression has been identified in AF patients, up to 38.0% [5–7], compared with 1.0 – 2.0% in the general population [8].

Atrial fibrillation [AF], anxiety, and depression are known to have bidirectional relationships. AF symptoms can cause prolonged psychological stress, which further leads to a decline in the overall clinical course of the patient [9].

On the other hand, negative emotions, such as anxiety and depression, can worsen the development and progression of AF over the short and long term. This suggests a complex interplay between AF and negative emotions, which can have serious implications for patients [9]. The relationship between depression and AF has received more attention in recent years [10, 11].

THE AIM OF THE WORK

This study aimed to examine the relationship between perceived social support and AF symptom severity among depressed and non-depressed AF patients.

SUBJECTS AND METHODS

Study type and participants: This cross-sectional study aimed to assess the relationship between perceived social support and the severity of AF symptoms in 2 groups: depressed and non-depressed AF patients. The sample size was calculated using the following formula: $N = [Z/\Delta]^2 \times P [100 - P]$ and indicated a minimum of 23 in each group.

This study was conducted at Al-Azhar University Hospital (Cairo) between December 2022 and April 2023. All the participants provided informed consent. The inclusion criteria included long-standing persistent and permanent AF patients aged more than 18 years, while the exclusion criteria were being less than 18 years or having other types of AF [e.g., first diagnosed AF, paroxysmal AF and persistent AF].

Measures

AF grading: Atrial fibrillation was determined based on rhythm documentation, a conventional 12-lead electrocardiogram [ECG] tracing or a single-lead ECG tracing [long strip] of less than 30 seconds, and it was graded using a modified European Heart Rhythm Association [mEHRA][15] score with grade I indicating no symptoms; grade II subdivided into two classes: 2a mild symptoms: normal daily activity not affected, symptoms not troublesome to patient 2b; moderate symptoms: normal daily activity not affected but patient troubled by symptoms; grade III severe symptoms: normal daily activity affected, grade IV disabling symptoms: normal daily activity discontinued.

Depression assessment:

a. Patient Health Questionnaire depression scale **[HQ-9]:** A validated Arabic translation of the Patient Health Questionnaire depression scale [PHQ-9], which showed 85.7% reliability, was used to assess depression [16, 17] It includes nine items based on the DSM-V depression criteria [18], has been reviewed over the past 14 days, and has been used to assess depression. A total score of 0–4 indicates normal or minor depression. The score of 5–9 (mild depression) score 10–14 (moderate depression), score 15–19 (moderately severe depression); 20–27 (severe depression).

b. MINI Major depressive episode module: We used the depression module of the Mini Neuropsychiatric Interview [MINI] as the gold standard diagnostic tool for depression. The MINI is the most widely used brief and structured interview to assess psychiatric disorders. The Major Depressive Episode Module consists of a maximum of nine questions assessing depressive symptoms over the past two weeks. If the answer to the first two questions is 'No,' the interview is ended, and the participant is identified as not having a major depressive episode. If the answer to either or both questions is 'Yes,' then the interviewer will proceed with the following 7 questions. A score of 5 or more on the nine questions indicated a current major depressive episode. The interviews were conducted by a trained clinician [19].

Social support assessment:

To assess social support, an Arabic language-validated version of the Multidimensional Scale of Perceived Social Support [MSPSS] [20] was used. Each of the 12 items of the MSPSS, which assesses how much support people believe they receive from family, friends, and significant others, is rated on a Likert scale ranging from one [strongly disagree] to seven. [Strongly agree]. The total score ranged from 12 to 84, with higher scores indicating greater social support.

Data analysis:

The collected data were arranged, coded, and analyzed using SPSS software [IBM Corp., Armonk, NY, IBM Corp version 25.0]. Quantitative variables are expressed as the mean ± SD, whereas counts are presented as numbers [%]. The chi-square test and Monte Carlo Exact probability test were used to estimate the differences between categorical variables. Both the PHQ-9 and AF were categorized according to severity. The Kruskal–Walli's test was used to determine whether there were any statistically significant differences between the studied groups. Spearman's coefficient was used to correlate the quantitative variables. A linear regression model using significant independent variables was used to estimate significant predictors, and 95.0% confidence intervals were reported. Logistic regression was conducted using the MSPSS score and AF severity to predict their effects on depression. Ordinal regression was performed using significant independent variables to estimate significant predictors of AF severity, and odds ratios with 95% CIs were reported. Statistical significance was set at $P < 0.05$.

Ethical approval and consent to participate:

Ethics approval was obtained on May 2022 from the Ethics Committee of Al-Azhar Faculty of Medicine. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee of Al-Azhar Faculty of Medicine and the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all participants included in this study.

RESULTS

A total of 93 atrial fibrillation patients were included, and their demographic data are shown in **[Table 1]**.

Females comprised 41.9% of the participants, with a mean age of 63.2 ± 10.89. A total of 77.4% said that they had manual or intellectually demanding occupations. Almost two-thirds of the participants were married, and 47.3% reported smoking. Most participants [59.2%] were classified as having grade II AF. Regarding social support status and depression, more than half [59.1%] reported a high degree of social support, while only 17.2% reported low social support. Using the PHQ-9 and MINI, we included 32 non-depressed and 61 depressed patients, including 26.9% with mild depression and 15.1% with severe depression **[Table 2]**.

The relationships between the different variables and degrees of depression are shown in **[Table 3]**.

The different groups of depression degrees showed statistically significant differences with regard to sex, work status [p< 0.001], and smoking status [p=0.027]. Perceived social support and AF grades were significantly associated with depression scores [p < 0.001]. Regarding the level of AF grade and severity, variables such as sex and working status were found to have statistically significant differences [p = 0.002 and p = 0.005, respectively] **[Table 4]**. We also found a statistically significant difference regarding perceived social support and depression between the AF grades [p < 0.001].

Spearman's correlation was performed to test whether there was an association between depression and social support, which revealed a negative correlation [r = -0.573, p <.001] between the level of social support and depression **[Figure 1]** and a negative relationship [r = -0.395, P0.001] between social support and AF grades **[Figure 2]**.

Additionally, there was a positive correlation [r=0.291, p0.005] between depression and the AF grade **[Figure 3]**.

Linear regression analysis was performed to determine the influence of multiple variables on PHQ-9 scores for depression. This model explained 65.7% of the variability in the PHQ-9 score, and the overall model was a significant predictive factor for the PHQ-9 score [F= 20.125, p<0.001]. After controlling for sex, working status, smoking, and AF grade, social support had the greatest influence and was negatively correlated with depression scores [β = -0.735] **[Table 5]**.

Univariate and multivariate logistic regression analyses were performed to study the association between different variables and the presence of depression; social support had a negative association, implying that participants with higher levels of social support were less likely to experience depression than those with lower levels of social support [OR = 0.382, P < 0.001] **[Table 6]**.

The influence of multiple variables on AF severity was determined using ordinal logistic regression. Low social support was strongly associated with higher AF grade [OR = 35.939, P = 0.024]. On the other hand, depression had no significant influence on AF severity **[Table 7]**.

Table [1]: Characteristics of the study sample

Variable		Study sample [n = 93]
Sex	Male Female	54 [58.1%] 39 [41.9%]
Age [years]	Min. – Max. Mean ± SD	36.0 – 86.0 63.2 ± 10.89
Marital status	Married Widow	57 [61.3%] 36 [38.7%]
Working status	Housewife Manual worker Mentally acting job	21 [22.6%] 40 [43.0%] 32 [34.4%]
Smoking	Yes No	44 [47.3%] 49 [52.7%]

Table [2]: MSPSS, PQH-9 and AF of the studied sample

Variable		Study sample [n = 93]
MSPSS	Low support Moderate support High support	16 [17.2%] 22 [23.7%] 55 [59.1%]
MSPSS score	Min. – Max. Mean ± SD	1.0 – 6.67 5.01 ± 1.7
PQH-9	No Depression Mild depression Moderate depression Moderately severe depression Severe depression	32 [34.4%] 25 [26.9%] 18 [19.4%] 4 [4.3%] 14 [15.1%]
PQH-9 score	Min. – Max. Mean ± SD	1.0 – 26.0 8.94 ± 7.49
AF	Grade 1 Grade 2a Grade 2b Grade 3 Grade 4	7 [7.5%] 22 [23.7%] 33 [35.5%] 16 [17.2%] 15 [16.1%]

Table [3]: Effect of different parameters on PHQ-9 categories

Variable		PHQ-9					Test of sig. [p]
		No depression [n= 32]	Mild depression [n= 25]	Moderate depression [n= 18]	Moderately severe depression [n= 4]	Severe depression [n= 14]	
Sex	Male Female	17 [53.1%] 15 [46.9%]	20 [80.0%] 5 [20.0%]	11 [61.1%] 7 [38.9%]	4 [100.0%] 0 [0.0%]	2 [14.3%] 12 [85.7%]	**χ^2= 19.238, p= 0.001***
Age [years]	Min–Max Mean ± SD	41.0 – 80.0 62.16±11.08	39.0 – 86.0 64.24±11.92	36.0 – 77.0 64.83±12.39	48.0 – 70.0 59.0±9.56	49.0 – 70.0 63.07±6.93	H= 2.003, p= 0.735
Marital status	Married Widow	20 [62.5%] 12 [37.5%]	16 [64.0%] 9 [36.0%]	12 [66.7%] 6 [33.3%]	4 [100.0%] 0 [0.0%]	5 [35.7%] 9 [64.3%]	χ^2= 6.703 p= 0.152
Working status	Housewife Manual worker Mentally acting job	4 [12.5%] 16 [50.0%] 12 [37.5%]	2 [8.0%] 14 [56.0%] 9 [36.0%]	5 [27.8%] 7 [38.9%] 6 [33.3%]	0 [0.0%] 1 [25.0%] 3 [75.0%]	10 [71.4%] 2 [14.3%] 2 [14.3%]	**^{MC}p<0.001***
Smoking	Yes No	17 [53.1%] 15 [46.9%]	16 [64.0%] 9 [36.0%]	4 [22.2%] 14 [77.8%]	3 [75.0%] 1 [25.0%]	4 [28.6%] 10 [71.4%]	**χ^2= 10.975 p= 0.027***
MSPSS	Low support Moderate support High support	0 [0.0%] 6 [18.8%] 26 [81.2%]	0 [0.0%] 8 [32.0%] 17 [68.0%]	1 [5.6%] 6 [33.3%] 11 [61.1%]	1 [25.0%] 2 [50.0%] 1 [25.0%]	14 [100%] 0 [0.0%] 0 [0.0%]	**^{MC}p<0.001***
MSPSS score	Min. – Max. Mean ± SD	3.67 – 6.67 5.93 ± 0.84	3.67 – 6.67 5.59 ± 0.87	2.75 – 6.67 5.33 ± 1.17	1.42 – 5.58 4.15 ± 1.86	1.0 – 2.75 1.74 ± 0.52	**H= 41.057, p<0.001***
AF	Grade 1 Grade 2a Grade 2b Grade 3 Grade 4	2 [6.3%] 7 [21.9%] 12 [37.5%] 7 [21.9%] 4 [12.5%]	3 [12.0%] 9 [36.0%] 11 [44.0%] 1 [4.0%] 1 [4.0%]	2 [11.1%] 6 [33.3%] 7 [38.9%] 1 [5.6%] 2 [11.1%]	0 [0.0%] 0 [0.0%] 3 [75.0%] 1 [25.0%] 0 [0.0%]	0 [0.0%] 0 [0.0%] 0 [0.0%] 6 [42.9%] 8 [57.1%]	**^{MC}p<0.001***

MC; Monte Carlo Exact Probability, χ2; Chi-Square test, H; Kurskal Wallis test

Table [4]: Effect of different parameters on AF

Variable		AF					p
		Grade 1 [n= 7]	Grade 2a [n= 22]	Grade 2b [n= 33]	Grade 3 [n= 16]	Grade 4 [n= 15]	
Sex	Male Female	5 [71.4] 2 [28.6]	16 [72.7] 6 [27.3]	24 [72.7] 9 [27.3]	3 [18.7] 13 [81.3]	6 [40.0] 9 [60.0]	**χ^2= 17.536, p= 0.002***
Age [years]	Min. – Max. Mean ± SD	44.0-72.0 57.3±10.64	39.0-80.0 65.9±11.71	44.0-86.0 63.6±10.99	36.0–77.0 62.69±10.82	41.0–71.0 61.93±9.59	H= 3.960, p= 0.412
Marital status	Married Widow	6 [85.7] 1 [14.3]	16 [72.7] 6 [27.3]	22 [66.7] 11 [33.3]	7 [43.8] 9 [56.2]	6 [40.0] 9 [60.6]	χ^2= 8.316, p= 0.081
Working status	Housewife Manual worker Mentally acting job	1 [14.3] 1 [14.3] 5 [71.4]	3 [13.6] 12 [54.6] 7 [31.8]	3 [9.1] 19 [57.6] 11 [33.3]	6 [37.5] 4 [25.0] 6 [37.5]	8 [53.3] 4 [26.7] 3 [20.0]	**^{MC}p=0.005***
Smoking	Yes No	2 [28.6] 5 [71.4]	14 [63.6] 8 [36.4]	18 [54.5] 15 [45.5]	5 [31.2] 11 [68.8]	5 [33.3] 10 [66.7]	χ^2= 6.862, p= 0.143
MSPSS	Low support Moderate support High support	0 [0.0] 1 [14.3] 6 [85.7]	0 [0.0] 6 [27.3] 16 [72.7]	0 [0.0] 11 [33.3] 22 [66.7]	7 [43.8] 2 [12.5] 7 [43.8]	9 [60.0] 2 [13.3] 4 [26.7]	**^{MC}p<0.001***
MSPSS score	Min. – Max. Mean ± SD	4.83 – 6.67 6.17 ± 0.65	3.67 – 6.67 5.55 ± 1.02	4.08 – 6.67 5.65 ± 0.77	1.42 – 6.67 4.05 ± 2.32	1.0 – 6.67 3.32 ± 2.0	**H= 17.423, p= 0.002***
PHQ-9	No depression Mild depression Moderate depression Moderately severe depression Severe depression	2 [28.6] 3 [42.8] 2 [28.6] 0 [0.0] 0 [0.0]	7 [31.8] 9 [40.9] 6 [27.3] 0 [0.0] 0 [0.0]	12 [36.4] 11 [33.3] 7 [21.2] 3 [9.1] 0 [0.0]	7 [43.8] 1 [6.3] 1 [6.3] 1 [6.3] 6 [37.5]	4 [26.7] 1 [6.7] 2 [13.3] 0 [0.0] 8 [53.3]	**^{MC}p<0.001***
PHQ-9 score	Min. – Max. Mean ± SD	1.0 – 12.0 7.14 ± 4.1	1.0 – 11.0 6.09 ± 3.9	1.0 – 19.0 6.88 ± 5.27	1.0 – 26.0 12.38±10.05	1.0 – 26.0 14.8 ± 9.64	**H= 10.868, p= 0.028***

MC; Monte Carlo Exact Probability, χ2; Chi-Square test, H; Kurskal Wallis test

Table [5]: Linear regression analysis of parameters affecting PHQ-9 score

Independent variables	Unstandardized Coefficients		Standardized Coefficients Beta	t	Individual Predictors Sig	95% CI	
	B	std. error				Lower	Upper
Constant	28.163	2.252		12.505	**<0.001***	23.684	32.641
Sex [a]	1.706	1.335	0.113	1.278	0.205	-0.949	4.361
Working status [b]	-4.265	1.546	-0.239	-2.758	**0.007***	-7.340	-1.189
Smoking [c]	-0.691	1.159	-0.046	-0.596	0.553	-2.996	1.614
Grade 1 AF [d]	1.560	1.941	0.055	0.804	0.424	-2.300	5.420
Grade 2a AF [d]	-1.242	1.272	-0.071	-0.976	0.332	-3.771	1.288
Grade 3 AF [d]	-0.120	1.603	-0.006	-0.075	0.940	-3.307	3.067
Garde 4 AF [d]	-1.079	1.689	-0.053	-0.639	0.525	-4.438	2.280
MSPSS	-3.234	0.351	-0.735	-9.222	**<0.001***	-3.932	-2.537

+; grade 2b AF was excluded from the final results of the model; a; ref [Female], b; ref [not working], c; ref [nonsmoker] d; ref [other AF grades]

Table [6]: Univariate and multivariate logistic regression analyses for the different parameters affecting the presence of depression among AF patients.

Independent variables		Univariate				Multivariate#			
		Sig.	OR	95% C.I. for OR		Sig.	OR	95% C.I. for OR	
				Lower	Upper			Lower	Upper
Age [years]		0.487	1.014	0.975	1.055				
Sex [A]		0.485	1.360	0.574	3.226				
Marital status [B]		0.862	1.081	0.448	2.609				
Working Status [C]		0.101	0.370	0.113	1.213				
Smoking [C]		0.417	0.701	0.297	1.654				
MSPSS score		**0.001***	0.465	0.294	0.737	**<0.001***	0.382	0.235	0.622
AF severity D	Grade 1	0.873				0.199			
	Grade 2a	0.872	0.857	0.132	5.557	0.513	0.523	0.075	3.646
	Grade 2b	0.696	0.700	0.117	4.179	0.367	0.426	0.067	2.718
	Grade 3	0.496	0.514	0.076	3.488	**0.043***	0.087	0.008	0.923
	Grade 4	0.926	1.100	0.149	8.125	0.098	0.130	0.012	1.456

#MSPSS and AF severity variables were only included in the multivariate logistic analysis; A ref; Female, B ref; Married, C ref; No. D ref; Grade 1

Table [7]: Ordinal regression analysis of parameters affecting AF severity

Independent variables		Estimate	std. error	Sig	OR	95% CI	
						Lower	Upper
Age		-0.004	0.019	0.85	0.996	0.960	1.034
Sex	Female	0.358	0.515	0.487	1.431	0.521	3.928
	Male	0.000			1.000		
Working	No	0.226	0.639	0.724	1.253	0.358	4.385
	Yes	0.000			1.000		
MSPSS	Low support	3.582	1.588	**0.024***	35.939	1.600	807.327
	Moderate support	0.480	0.498	0.335	1.616	0.609	4.287
	High support	0.000			1.000		
Depression	No depression	0.855	1.641	0.602	2.352	0.094	58.172
	Mild depression	-0.280	1.645	0.865	0.755	0.030	19.004
	Moderate depression	-0.241	1.591	0.879	0.785	0.035	17.760
	Moderately severe depression	0.231	1.597	0.885	1.260	0.055	28.804
	Severe depression	0.000			1.000		

+; grade 2b AF was excluded from the final results of the model a; ref [Female], b; ref [not working], c; ref [nonsmoker] d; ref [other AF grades]

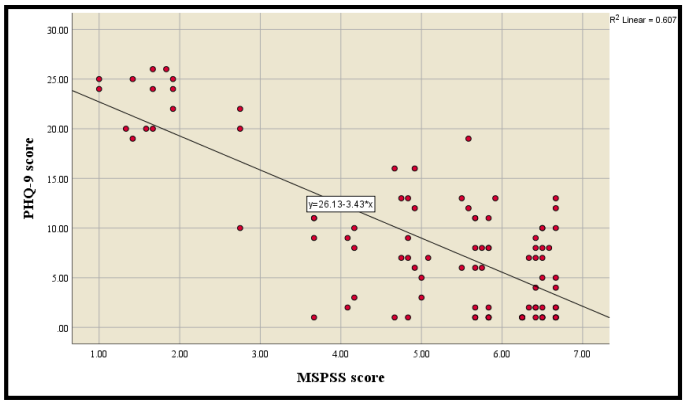

Figure [1]: Correlation between the PHQ-9 score and MSPSS score

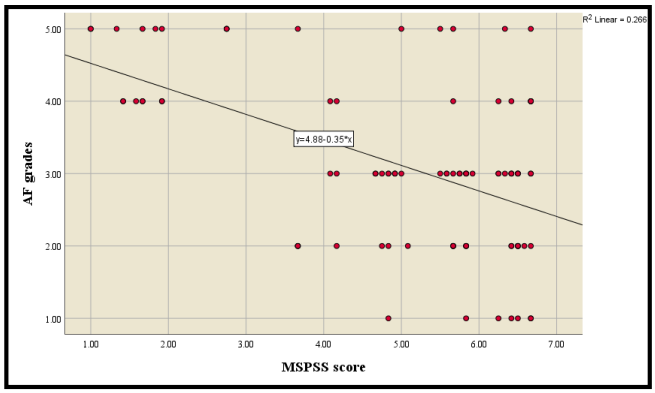

Figure [2]: Correlation between the AF grades and MSPSS score

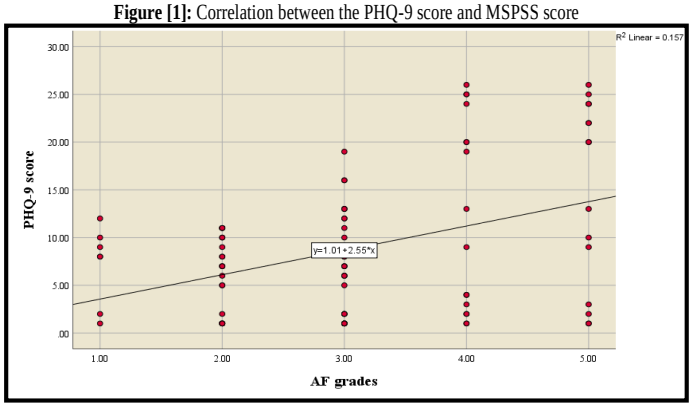

Figure [3]: Correlation between the AF grades and PHQ-9 score

DISCUSSION

Our study found a significant negative linear correlation between the degree of depression and the level of social support perceived by patients with AF. Likewise, we discovered a substantial relationship between the degree of social support and the severity of AF grades, with patients with lower social support manifesting a higher grade of AF. In our study, there was a positive correlation between depression and AF grade; however, ordinal regression found no significant effect.

The impact of social support provided for patients with AF and other cardiac diseases has been previously investigated. According to a cross-sectional study conducted among Danish patients to investigate the relationship between having a supportive family and the prevalence of anxiety and sadness in cardiac patients, the presence of a supportive family was associated with a lower incidence of anxiety and depression [12].

Another longitudinal prospective study involved cardiac patients with a 6-month follow-up and aimed to investigate the role of psychosocial factors in emotional distress among patients after cardiac rehabilitation. This finding illustrated that greater social support predicted and improved emotional well-being in both the short and long term [21].

Furthermore, a study explored the effect of social support on illness perception in AF patients during the blanking period [the first three months after radiofrequency catheter ablation] and discovered that higher levels of perceived social support were associated with greater feelings of control and positive illness perceptions. This highlights the importance of social support and sense of control in influencing AF patients' attitudes and perceptions of their condition [22].

The relationship between depression and AF onset, severity, and complications has been previously studied and has revealed variable results. A large South Korean cohort study with more than five million participants found that there is a link between depression and a higher risk of developing new-onset AF, and those who have recurring periods of depression are at greater risk [23]. Similar results were reported in a previous large meta-analysis that found that negative psychological characteristics such as anxiety, anger, depression, and work stress were associated with an increased risk of atrial fibrillation [AF], with anxiety and depression linked to 10.0% and 25.0% increases in the incidence of AF, respectively. Significant job stress was also linked to an 18.0% increase in the risk of AF [24].

Another follow-up study found that anxiety and depression were linked to exacerbated symptoms and severity among AF patients who completed anxiety and depression severity questionnaires, as well as AF symptoms and frequency severity questionnaires [AFSS] and were followed up for 3 months. However, treatment with antiarrhythmic medication or catheter ablation lowers AFSS, and no effect on depression or anxiety symptoms has been observed [25].

A similar study found that psychological comorbidities, including depression, anxiety, and somatization, were associated with a worsened general health status and AF-attributed symptom severity in stable outpatients with documented AF. Specifically, depression was associated with more frequent visits to seek medical attention for AF [26].

In contrast, a previous meta-analysis stated that no associations were observed between anger, anxiety, and work stress and the risk of AF [27]. Some studies have found no potential relationship between psychological factors and AF [28–30].

A large population-based cohort study in Denmark demonstrated that after controlling for confounding factors, there was no increased risk of AF among patients with high levels of perceived stress during up to four years of follow-up [31].

These studies indicate that the relationship between psychological factors and the incidence of AF is unclear and highlight the need for further research.

The findings of this study have important implications for the management of atrial fibrillation patients. Given the significant correlation between perceived social support, depression, and symptom severity, healthcare providers should consider incorporating assessments of social support into routine clinical evaluations of these patients. Identifying individuals with low levels of perceived social support can help healthcare professionals develop targeted interventions aimed at improving support networks and addressing psychological wellbeing. Moreover, health care providers should emphasize the importance of social connectedness and encourage patients to engage in activities that foster social support, such as joining community groups or participating in leisure activities. By recognizing and addressing the role of perceived social support, healthcare professionals can enhance holistic care and overall quality of life for individuals with atrial fibrillation.

This is the first cross-sectional study in Egypt to explore the relationship between depression and social support among patients with AF. However, it has some limitations, including a limited number of participants and an inability to establish causality. A larger study with more participants and the aim of determining causality is suggested.

In conclusion, our findings emphasize the importance of social support for patients with AF: higher social support was negatively associated with depression, and lower social support was significantly associated with higher AF grades. This highlights the importance of psychological assessment and implies that treating both AF and psychosocial comorbidities may be positively associated with AF symptom relief. As a result, healthcare providers ought to value psychological components to enhance AF patients' health outcomes.

Declarations

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REFERENCES

1. Lippi G, Sanchis-Gomar F, Cervellin G. Global epidemiology of atrial fibrillation: An increasing epidemic and public health challenge. Int J Stroke. 2021;16[2]:217–21. doi: 10.1177/1747493020978254.

2. Lip GYH, Fauchier L, Freedman SB, Van Gelder I, Natale A, Gianni C, et al. Atrial fibrillation. Nat Rev Dis Primers. 2016 Mar 31; 2: 16016. doi: 10.1038/nrdp.2016.16.

3. Brundel BJJM, Ai X, Hills MT, Kuipers MF, Lip GYH, de Groot NMS. Atrial fibrillation. Nat Rev Dis Primers. 2022; 8:21. doi: 10.1038/ s41572-022-00347-9.

4. Wood KA, Drew BJ, Scheinman MM. Frequency of disabling symptoms in supraventricular tachycardia. Am J Cardiol. 1997;79[2]:145–9. doi: 10.1016/ s0002-9149[96]00706-4.

5. Dąbrowski R, Smolis-Bąk E, Kowalik I, Kazimierska B, Wójcicka M, Szwed H. Quality of life and depression in patients with different patterns of atrial fibrillation. Kardiol Pol. 2010;68[10]:1133–9. PMID: 20967705.

6. Hindricks G, Potpara T, Dagres N, Arbelo E, Bax JJ, Blomström-Lundqvist C, et al. 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery [EACTS]. Russ J Cardiol. 2021; 26[9]:4594. doi: 10.15829/1560-4071-2021-4594.

7. Thrall G, Lip GYH, Carroll D, Lane D. Depression, Anxiety, and Quality of Life in Patients with Atrial Fibrillation. Chest. 2007;132[4]:1259–64. doi: 10.1378/chest.07-0036.

8. Glaesmer H, Riedel-Heller S, Braehler E, Spangenberg L, Luppa M. Age- and gender-specific prevalence and risk factors for depressive symptoms in the elderly: a population-based study. Int Psychogeriatr. 2011;23[8]:1294–300. doi: 10.1017/S1041610211000780.

9. Ladwig KH, Goette A, Atasoy S, Johar H. Psychological aspects of atrial fibrillation: A systematic narrative review. Curr Cardiol Rep. 2020; 22 [11]:137. doi: 10.1007/s11886-020-01393-z.

10. Ruo B, Rumsfeld JS, Hlatky MA, Liu H, Browner WS, Whooley MA. Depressive Symptoms and Health-Related Quality of Life. JAMA. 2003; 290[2]:215–21. doi: 10.1001/jama.290.2.215.

11. Galli F, Borghi L, Carugo S, Cavicchioli M, Faioni EM, Negroni MS, et al. Atrial fibrillation and psychological factors: a systematic review. Peer J. 2017;5: e3537. doi: 10.7717/peerj.3537.

12. Hansen C, Zinckernagel L, Schneekloth N, Zwisler ADO, Holmberg T. The association between supportive relatives and lower occurrence of anxiety and depression in heart patients: Results from a nationwide survey. Eur J Cardiovasc Nurs. 2017;16[8]:707–15. doi: 10.1177/ 1474515117702026.

13. Essien UR, Kornej J, Johnson AE, Schulson LB, Benjamin EJ, Magnani JW. Social determinants of atrial fibrillation. Nat Rev Cardiol. 2021;18[11]:763–73. doi: 10.1038/s41569-021-00561-0.

14. Kang Y. The relationships between uncertainty and its antecedents in Korean patients with atrial fibrillation. J Clin Nurs. 2011;20[13–14]:1880–6. doi: 10.1111/j.1365-2702.2010.03648.x.

15. Wynn GJ, Todd DM, Webber M, Bonnett L, McShane J, Kirchhof P, et al. The European Heart Rhythm Association symptom classification for atrial fibrillation: validation and improvement through a simple modification. Europace. 2014;16[7]:965–72. doi: 10.1093/europace/ euu011.

16. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9: Validity of a Brief Depression Severity Measure. J Gen Intern Med. 2001;16[9]:606–13. doi: 10.1046/j.1525-1497.2001.016009606.x.

17. AlHadi AN, AlAteeq DA, Al-Sharif E, Bawazeer HM, Alanazi H, AlShomrani AT, et al. An Arabic translation, reliability, and validation of Patient Health Questionnaire in a Saudi sample. Ann Gen Psychiatry. 2017; 16:32. doi: 10.1186/s12991-017-0155-1.

18. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-5. 5th ed. Washington, DC: American Psychiatric Association; 2013.

19. Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, et al. The Mini-International Neuropsychiatric Interview [M.I.N.I.]: the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. J Clin Psychiatry. 1998;59 Suppl 20:22–33. PMID: 9881538.

20. Merhi R, Kazarian SS. Validation of the Arabic translation of the Multidimensional Scale of Perceived Social Support [Arabic-MSPSS] in a Lebanese community sample. Arab J Psychiatry. 2012; 23 [2]:159–68.

21. Blikman MJC, Jacobsen HR, Eide GE, Meland E. How Important Are Social Support, Expectations and Coping Patterns during Cardiac Rehabilitation. Rehabil Res Pract. 2014; 2014:1–7. doi: 10.1155/ 2014/973549.

22. Ding YM, Liu CP, Xu HX, Wang MJ, Zhang JY, Gu JY, et al. Effect of social support on illness perception in patients with atrial fibrillation during "Blanking Period": Mediating role of sense of mastery. Nurs Open. 2023;10[1]:115–22. doi: 10.1002/nop2.1287.

23. Kim YG, Lee KN, Han KD, Han KM, Min K, Choi HY, et al. Association of Depression with Atrial Fibrillation in South Korean Adults. JAMA Netw Open. 2022;5[1]: e2141772. doi: 10.1001/jamanetworkopen. 2021.41772.

24. Wu H, Li C, Li B, Zheng T, Feng K, Wu Y. Psychological factors and risk of atrial fibrillation: A meta-analysis and systematic review. Int J Cardiol. 2022; 362:85–92. doi: 10.1016/j.ijcard.2022.05.048.

25. Thompson TS, Barksdale DJ, Sears SF, Mounsey JP, Pursell I, Gehi AK. The Effect of Anxiety and Depression on Symptoms Attributed to Atrial Fibrillation. Pacing Clin Electrophysiol. 2014;37[4]:439–46. doi: 10.1111/pace.12309.

26. Gehi AK, Sears S, Goli N, Walker TJ, Chung E, Schwartz J, et al. Psychopathology and Symptoms of Atrial Fibrillation: Implications for Therapy. J Cardiovasc Electrophysiol. 2012;23[5]:473–8. doi: 10.1111/j.1540-8167.2011.02264.x.

27. Fu Y, He W, Ma J, Wei B. Relationship between psychological factors and atrial fibrillation: A meta-analysis and systematic review. Medicine [Baltimore]. 2020; 99 [16]: e19615. doi: 10.1097/ MD.0000000000019615.

28. Feng T, Malmo V, Laugsand LE, Strand LB, Gustad LT, Ellekjær H, et al. Symptoms of anxiety and depression and risk of atrial fibrillation—The HUNT study. Int J Cardiol. 2020; 306: 95–100. doi: 10.1016/ j.ijcard.2020.02.035.

29. Garg PK, O'Neal WT, Diez-Roux AV, Alonso A, Soliman EZ, Heckbert S. Negative Affect and Risk of Atrial Fibrillation: MESA. J Am Heart Assoc. 2019;8[1]: e010603. doi: 10.1161/JAHA.118.010603.

30. Whang W, Davidson KW, Conen D, Tedrow UB, Everett BM, Albert CM. Global Psychological Distress and Risk of Atrial Fibrillation Among Women: The Women's Health Study. J Am Heart Assoc. 2012;1[3]: e001107. doi: 10.1161/JAHA.112.001107.

31. Graff S, Prior A, Fenger-Grøn M, Christensen B, Glümer C, Larsen FB, et al. Does perceived stress increase the risk of atrial fibrillation? A population-based cohort study in Denmark. Am Heart J. 2017; 188:26–34. doi: 10.1016/j.ahj.2017.02.025.

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