Int J Clin Exp Med 2021;14(1):548-556
www.ijcem.com /ISSN:1940-5901/IJCEM0121736

Original Article

Effect of high-quality nursing on psychological emotion, heart function and nursing satisfaction of patients with acute myocardial infarction with arrhythmia

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Received September 4, 2020; Accepted October 14, 2020; Epub January 15, 2021; Published January 30, 2021

Abstract: Objective: To explore high-quality nursing intervention on psychological emotion, heart function and nursing satisfaction of patients with acute myocardial infarction with arrhythmia. Methods: Altogether 144 patients with acute myocardial infarction complicated with arrhythmia from December 2017 to August 2019 were selected as the research participants, in which the control group (CG) (n=77) received routine nursing and the research group (RG) (n=67) received high-quality nursing. The clinical indexes of patients were observed. The exercise of self-care agency (ESCA) and the general self-efficacy scale (GSES) were used to evaluate self-improvement. The degree of cognition and treatment compliance of patients were observed. Self-rating anxiety scale (SAS) and self-rating depression scale (SDS) were used to evaluate the psychological status. The cardiac function grading and complication rate were recorded. Health status survey short form (SF-36) was used to evaluate quality of life. The satisfaction questionnaire made by our hospital was used to evaluate the nursing satisfaction. Results: After nursing, the improvement of clinical symptoms of the RG was better than that of the CG, ESCA and GSES scores of the RG were higher than those of the CG, disease cognition and treatment compliance of the RG were higher than those of the CG ($P<0.05$), the scores of SDS and SAS in the RG were lower than those in the CG, the improvement of cardiac function indexes in the RG was better than that in the CG, the total incidence of complications in the RG was lower than that in the CG, the SF-36 score of RG was higher than that in the CG, and nursing satisfaction of the RG was higher than that of the CG. Conclusion: For patients with arrhythmia after acute myocardial infarction, high-quality nursing can effectively relieve patients' bad mood, improve heart function, improve self-improvement ability and quality of life.

Keywords: Nursing, acute myocardial infarction, arrhythmia, cardiac function

Introduction

Acute myocardial infarction can easily cause heart injury [1]. It is the acute necrosis of myocardial tissue caused by persistent and severe ischemia and is one of the main causes of morbidity and mortality in the world [2, 3]. Studies have shown that due to the rapid decrease of blood supply after coronary artery disease, it is common to have ischemia and hypoxia of myocardial cells, thus leading to necrosis of some myocardial cells and arrhythmia [4, 5]. Under the influence of arrhythmia, the cardiac function of the patient declines rapidly, which seriously threatens the health of patients. Clinical treatment methods, such as drugs or intervention, are often used to save patients' lives [6]. However, due to the rapid and serious onset of diseases, patients are prone to symptoms such as anxiety and depression during treatment, thus affecting the treatment effect of patients [7]. Therefore, it is particularly important to provide high-quality nursing intervention services for such patients and to control various possible complications in time and effectively, so as to improve the prognosis of patients.

Studies have shown that nursing interventions for patients with acute myocardial infarction, such as drug management, follow-up, reasonable exercise, and smoking cessation, can reduce readmission within 30 days [8]. Conventional nursing intervention cannot meet the needs and expectations of most patients for nursing quality. For example, poor information transmission often leads to misunderstanding

of the disease, which leads to adverse events such as prolonged hospital stay [9]. High-quality nursing is a better choice at present, and it has achieved outstanding results in other diseases [10]. High-quality nursing is a patient-centered nursing process, and it is planned, efficient and consistent with the treatment. According to the actual situation of patients, it can better meet the needs of individual patients, uses medical expertise to support nursing, and respond to the needs of patients in a gradual and orderly manner, so as to improve the curative effect and prognosis of patients [12]. For example, in Turan Kavradim S and other studies [13], giving nursing intervention to patients with myocardial infarction can effectively improve patients' lifestyle and reduce the risk of myocardial infarction, indicating that giving effective nursing intervention can improve patients' self-efficacy and quality of life, thus improving patients' prognosis. Other studies have shown that [14], giving effective nursing intervention to patients with myocardial infarction can improve the psychological state of anxiety of patients, thus improving the therapeutic effect of patients.

In this study, a high-quality nursing intervention model was implemented in patients with acute myocardial infarction complicated with arrhythmia, and the influence of this nursing model on patients' psychological state, improvement of cardiac function and quality of life was discussed.

Materials and methods

Altogether 144 patients with acute myocardial infarction complicated with arrhythmia who were treated conservatively in Wenling First People's Hospital from December 2017 to August 2019 were selected as the research participants. The control group (CG) (n=77) received routine nursing and the research group (RG) (n=67) received high-quality nursing. Inclusion criteria: Both groups of patients were diagnosed with acute myocardial infarction and complicated with arrhythmia during treatment [15]; the clinical data were complete, and the clinical manifestations were chest tightness, shortness of breath, dizziness and fatigue. This study was approved by the Ethics Committee. The subjects and their families signed a fully informed consent form. Exclusion criteria: patients with renal failure, severe arrhythmia, malignant tumor, cognitive dysfunction, body dysfunction, mental illness or family history of mental illness; patients who dropped out of the experiment halfway; patients who did not cooperate with the research, and patients who were lost to follow up.

Nursing methods

Patients in the CG were given routine nursing: After admission, nursing staff gave patients a series of treatment interventions according to the doctor's advice, paid close attention to the changes of patients' condition and their vital signs. In case of discomfort, it was necessary to take targeted measures to intervene immediately. Patients were guided to have good rest, diet and exercise habits.

Patients in the RG were given high-quality nursing care: (1) Disease awareness: Patients' condition was evaluated, patients were introduced to information about diseases, and patients' recent physical condition were learned about. Nursing staff needed to integrate the cognitive level of patients and carry out targeted disease knowledge interpretation to improve patients' awareness of diseases and correct their bad habits and behaviors, so the patients can better cooperate with nursing staff for treatment and research. (2) Psychological nursing: As the disease is acute and serious, patients are prone to have bad emotions such as tension, anxiety and fear during treatment. Therefore, timely psychological counseling was conducted according to patients' psychological state, so as to relieve patients' emotions and enhance their sense of security. Patients' families can also be invited to comfort and encourage patients together to enhance their confidence in treatment. (3) Medication nursing: Nursing staff used easy-to-understand words to inform patients and their families in detail about the medication methods and adverse reactions of drugs for treating diseases. At the same time, it was necessary to closely observe the changes of patients' vital signs during medication and the adverse reactions. If patients had adverse drug reactions during medication, the nursing staff informd the attending doctor in real time and took intervention measures. (4) Ward care: A quiet and comfortable treatment environment was provided for patients. For example, the nursing staff ensured proper temperature and humidity in the ward, reduce the number of visits of patients' families and the flow of people, and paid close attention to whether the

Table 1. Comparison of general data between the CG and the RG [n (%)] (mean ± SD)

Classification	RG (n=67)	CG (n=77)	t/χ^2 value	*P* value
Gender			0.136	0.712
Male	36 (53.73)	39 (50.65)		
Female	31 (46.27)	38 (49.35)		
Average age (years)	55.23±4.79	55.94±4.83	0.901	0.358
BMI (kg/m^2)	23.14±1.89	22.84±1.93	0.349	0.939
Onset time (h)	4.52±2.18	4.63±2.19	0.301	0.763
History of diabetes			0.251	0.616
Yes	35 (52.24)	37 (48.05)		
No	32 (47.76)	40 (51.95)		
History of hypertension			0.174	0.676
Yes	38 (56.72)	41 (53.25)		
No	29 (43.28)	36 (46.75)		
Work history			0.009	0.922
Yes	36 (53.73)	42 (54.55)		
No	31 (46.27)	35 (45.45)		
History of smoking			0.019	0.888
Yes	41 (61.19)	48 (62.34)		
No	26 (38.81)	29 (37.66)		
Drinking history			0.034	0.852
Yes	39 (58.21)	46 (59.74)		
No	28 (41.79)	31 (40.26)		
Dietary preference			0.229	0.632
Light	33 (49.25)	41 (53.25)		
Spicy	34 (50.75)	36 (46.75)		

patients had chest pain. In case of an abnormal situation, appropriate analgesic drugs should be used to help the patients relieve the pain. (5) Rehabilitation training: Patients were helped to carry out systematic rehabilitation training.

Outcome measures

(1) Clinical indicators: The patient's bed time, hospitalization time and respiratory rate were observed and recorded. (2) Self-improvement: The exercise of self-care agency (ESCA) [16] was applied, including 4 different fields and 43 items in the scale, and the total score after evaluation was 172 points. Nursing staff gave statistical scores after self-evaluation, and a higher score means higher self-care ability. The general self-efficacy scale (GSES) was applied [17], including 10 items in the scale, and the score of each item ranges from 1 to 4, with a total score of 40 points. The higher score indicates the higher self-efficacy. (3) The degree of cognition and the treatment compliance of the CG and the RG of patients after nursing intervention were observed. (4) Negative emotions: Self-rating Anxiety Scale (SAS) and Self-rating Depression Scale (SDS) were used to evaluate the anxiety and depression of patients in the two groups before and after nursing intervention [18]. The total score of SAS scale is 100 points, with scores of 50-70 indicating mild anxiety, scores of 71-90 indicating moderate anxiety, scores of > 90 indicating severe anxiety, and a higher score indicates more severe anxiety. The total score of SDS scale is 100 points, with scores of 50-70 indicating mild depression, scores of 71-90 indicating moderate depression, scores of > 90 indicating severe depression, and a higher score indicates more severe depression. (5) Heart function level: According to the New York Heart Association (NYHA) classification [19], the heart function levels of the CG and the RG were evaluated before and after nursing, and a lower score indicates better treatment effect. (6) The complications of the CG and the RG of patients in the nursing process was observed

Table 2. Comparison of clinical symptoms between the CG and the RG after nursing intervention (mean ± SD)

Group	Cases	Bed time (d)	Hospital stay (d)	Respiratory frequency (times/minute)
RG	67	3.25±1.16	7.89±1.74	22.31±2.57
CG	77	6.46±1.73	12.73±2.04	25.36±2.84
t	-	12.870	15.200	6.717
P	-	<0.001	<0.001	<0.001

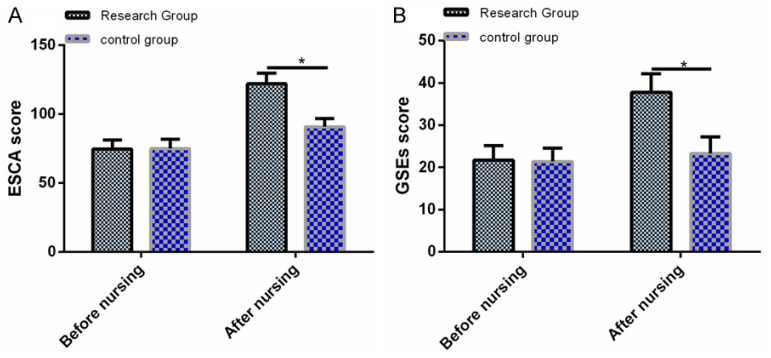

Figure 1. Comparison of self-improvement degree between the CG and the RG before and after nursing. A: There was no difference in ESCA scores between the two groups before nursing, but the ESCA scores of the RG after nursing were evidently higher than those of the CG. B: There was no difference in GSES scores between the two groups before nursing, but the GSES scores of the RG after nursing were evidently higher than those of the CG. Note: * indicates comparison of the CG and the RG, P<0.05.

and recorded. (7) Quality of life: The health status survey short form (SF-36) [20] was used to evaluate the improvement of the quality of life of patients in the two groups after nursing. There are 8 dimensions in the scale, and the total score of each dimension is 100 points. A higher score after evaluation indicates better quality of life of patients. (8) Nursing satisfaction: The patients were given a score of 100 points in our hospital's self-made Satisfaction Questionnaire. A higher score indicates higher satisfaction with the service.

Statistical methods

SPSS 20.0 (IBM Corp, Armonk, NY, USA) was used for statistical analysis, and GraphPad Prism 7 was used to illustrate the figures. The counting data were represented by [n (%)] and compared by Chi-square test. Continuous correction Chi-square test was used when the theoretical frequency in Chi-square test was less than 5. The measurement data were expressed by mean ± SD and compared by independent sample t-test. The comparison before and after nursing were conducted by paired t-test. When P<0.05, the difference was statistically significant.

Result

General information

There was no significant difference between the RG and the CG in general clinical baseline data such as gender, average age, body mass index, onset time, diabetes history, hypertension history, work history, drinking history and dietary preference (P > 0.05) (**Table 1**).

Comparison of clinical symptoms between the CG and the RG after nursing intervention

After nursing intervention, the bed time and hospitalization time of patients in the RG were evidently lower than those in the CG (P<0.05), and the improvement of respiratory rate was also evidently better than that in the CG (P<0.05) (**Table 2**).

Comparison of self-improvement degree between the CG and the RG before and after nursing

There was no significant difference in ESCA and GSES before nursing between the two groups (P > 0.05). After nursing, the scores of ESCA and GSES in the two groups increased evidently, and the scores in the RG after nursing were evidently higher than those in the CG (P<0.05) (**Figure 1**).

Comparison of disease knowledge and treatment compliance between the two groups after nursing intervention

After nursing intervention, the health knowledge and treatment compliance of patients in the RG were evidently higher than those in the CG (P<0.05) (**Table 3**).

Table 3. Comparison of disease knowledge and treatment compliance between the two groups after nursing intervention (mean ± SD)

Group	Cases	Mastery of health knowledge	Treatment compliance
RG	67	93.25±6.32	93.68±8.35
CG	77	78.37±5.84	77.43±6.27
t	-	14.680	13.300
P	-	<0.001	<0.001

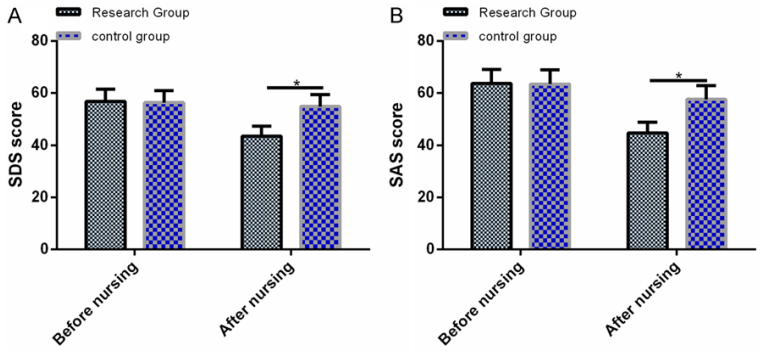

Figure 2. Comparison of SDS and SAS scores between the CG and the RG before and after nursing intervention. A: There was no difference in SDS scores between the two groups before nursing, but the SDS scores of the RG after nursing were evidently lower than those of the CG. B: There was no difference in SAS scores between the two groups before nursing, but SAS scores in the RG after nursing were evidently lower than those in the CG. Note: * indicates comparison of the CG and the RG, P<0.05.

Comparison of SDS and SAS scores between the CG and the RG before and after nursing intervention

There was no significant difference in SDS and SAS scores between the two groups before nursing intervention (P > 0.05). After nursing, the scores of SDS and SAS decreased evidently, and the scores of patients in the RG after nursing were evidently lower than those in the CG (P<0.05) (**Figure 2**).

Comparison of cardiac function classification between the CG and the RG after treatment

There was no difference between the two groups before treatment (P > 0.05). After treatment, the levels of I and II in the RG were evidently higher than those in the CG (P<0.05), while the levels of III in the RG were evidently lower than those in the CG after nursing (P<0.05) (**Table 4**).

Comparison of the incidence of complications in nursing process between the CG and the RG

The total complication rate of patients in the RG was 7.46%, while that in the CG was 23.38%. The total complication rate of patients in the RG was evidently lower than that in the CG (P<0.05) (**Table 5**).

Comparison of SF-36 scores between the CG and the RG after nursing intervention

After nursing intervention, the scores of mental health, emotional function, social activity, social function, role physical, physiological function, somatic pain and overall health in the RG were evidently higher than those in the CG (P<0.05) (**Table 6**).

Comparison of nursing satisfaction between the CG and the RG of patients after nursing intervention

After nursing intervention, the nursing satisfaction of patients in the RG was 95.52%, while that in the CG was 77.92%. The nursing satisfaction of patients in the RG was evidently higher than that in the CG (P<0.05) (**Table 7**).

Discussion

Acute myocardial infarction is a kind of heart disease that is based on coronary artery disease, which is related to myocardial necrosis caused by persistent hypoxia and aggravation of the disease [21]. The common complication is arrhythmia, and various complications caused by this disease will produce greater psychological pressure on patients, which will lead to problems such as uncooperative treatment, seriously endangering patients' lives [22, 23]. Therefore, application of scientific and effective nursing intervention is of great significance to control patients' condition and improve their prognosis.

In this study, we used high-quality nursing to intervene with the clinical indicators of, heart function, psychological state, self-efficacy and quality of life of patients with acute myocardial infarction complicated with arrhythmia, and found that the patients' condition improved obviously after nursing. This study analyzed the

Table 4. Comparison of cardiac function classification between the CG and the RG after treatment [n (%)]

Group	Cases	Class I		Class II		Class III		Class IV	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
RG	67	0 (0.00)	33 (49.25)	0 (0.00)	25 (37.31)	43 (64.18)	8 (11.94)	24 (35.82)	1 (1.49)
CG	77	0 (0.00)	24 (31.17)	0 (0.00)	15 (19.48)	49 (63.64)	25 (32.47)	28 (36.36)	13 (16.88)
χ^2	-	-	4.900	-	5.679	0.005	8.546	0.005	9.669
P	-	-	0.027	-	0.017	0.946	0.004	0.946	0.002

Table 5. Comparison of the incidence of nursing complications between the two groups [n (%)]

Group	Cases	Class I		Class II		Class III		Class IV	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
RG	67	0 (0.00)	33 (49.25)	0 (0.00)	25 (37.31)	43 (64.18)	8 (11.94)	24 (35.82)	1 (1.49)
CG	77	0 (0.00)	24 (31.17)	0 (0.00)	15 (19.48)	49 (63.64)	25 (32.47)	28 (36.36)	13 (16.88)
χ^2	-	-	4.900	-	5.679	0.005	8.546	0.005	9.669
P	-	-	0.027	-	0.017	0.946	0.004	0.946	0.002

Table 6. Comparison of SF-36 scores between the CG and the RG after nursing intervention (mean ± SD)

Group	Cases	Mental health	Emotional function	Social activities	Social function
Research group	67	82.36±7.43	89.64±8.34	88.74±7.43	82.17±7.58
Control group	77	67.63±6.14	75.53±6.89	73.65±7.21	73.79±6.43
t	-	13.020	11.110	12.350	7.178
P	-	<0.001	<0.001	<0.001	<0.001
Role physical		Physiological function		Somatic pain	General health
89.47±8.32		90.37±8.54		84.17±7.53	86.57±7.54
71.17±6.38		84.79±7.43		77.16±7.21	78.46±7.32
14.910		4.193		5.701	6.539
<0.001		<0.001		<0.001	<0.001

Table 7. Comparison of nursing satisfaction between the CG and the RG after nursing intervention [n (%)]

Group	Cases	Very satisfied	Satisfied	Dissatisfied	Total satisfaction
RG	67	40 (59.70)	24 (35.82)	3 (4.48)	64 (95.52)
CG	77	23 (29.87)	37 (48.05)	17 (22.08)	60 (77.92)
χ^2	-	-	-	-	9.279
P	-	-	-	-	0.002

clinical symptoms of the CG and the RG of patients after nursing. The results showed that the bed time and hospitalization time of patients in the RG after nursing intervention were evidently lower than those in the CG, and the improvement of respiratory rate was also evidently better than that in the CG, indicating that high-quality nursing can effectively improve the disease status of patients and improve the curative effect, and thus reduce the treatment time of patients in hospital. Research has shown that [24], most patients with heart diseases need a lot of nursing. For example, nursing intervention for patients with chronic heart failure can effectively improve the self-care ability of patients, improve their heart function and improve the quality of life. The results of this study showed that ESCA and GSES scores in the RG were evidently higher than those in the CG after nursing, indicating that high-quality nursing can improve patients' self-efficacy and self-care ability. In the study of Mohammadpour A [25], due to the lack of awareness of the disease, patients with cardiovascular diseases could not meet their own self-care needs, and giving patients effective nursing education intervention can improve their self-care ability, improve their awareness of the disease, and thus improve the curative effect. The results of this study showed that the patients in the RG have higher health knowledge mastery and treatment compliance than those in the CG, indicating that high-quality nursing could improve patients' cognition of disease by giving targeted disease knowledge to patients, so patients efficiently cooperate with the treatment work of nursing staff and the treatment efficacy is improved.

Studies have shown that [26] in patients with heart disease, anxiety and depression are very common and persistent, and increases stress may lead to the progression of cardiovascular disease. For example, nursing intervention for patients with cardiac diseases, such as arrhythmia, can effectively improve their psychological state, reduce their anxiety and depression, and enhance their cognitive level of diseases [27]. The results of this study also showed that the scores of SDS and SAS in the RG after nursing were evidently lower than those in the CG, which indicates that high-quality nursing can help patients to channel their bad feelings about diseases and treatment, and build up their confidence in overcoming diseases, so as to maintain an optimistic psychological state and improve the curative effect during treatment. After nursing, NYHA heart function level in grade I and II in the RG was evidently higher than that in the CG, but grade III was evidently lower, indicating that giving high-quality nursing can reduce patients' bad mood, improve

patients' enthusiasm for treatment, promote the recovery of heart function and reduce the possibility of disease recurrence. Previous studies have shown [28] that depression increases the complications of patients with myocardial infarction, and improving patients' bad mood can effectively reduce the occurrence of complications and improve the prognosis. Moreover, the total incidence of complications in the RG was evidently lower than that in the CG, which indicated that giving high-quality nursing care to patients could improve the treatment compliance of patients, thus reducing the occurrence of complications such as adverse drug events. Park M and other researchers show that [29], giving education programs to first-episode patients with acute myocardial infarction can change their behavior and quality of life. The scores of SF-36 in the RG after nursing intervention were evidently higher than in the CG, which was consistent with Park M's research. Giving high-quality nursing intervention to patients can help patients establish good and healthy living habits, keep patients in a healthy physiological state, and improve their rehabilitation and quality of life. Finally, we scored the nursing satisfaction, and the results showed that the nursing satisfaction of the patients in the RG was higher than that in the CG, which indicated that the patients had high recognition of this nursing, which provided a powerful reference for the follow-up clinical application.

Although this study confirmed that high-quality nursing can bring better benefits to patients with acute myocardial infarction complicated with arrhythmia, there is still room for improvement in this study. For example, we can further analyze the risk factors that affect the poor prognosis of patients with acute myocardial infarction complicated with arrhythmia, which will help nurses to identify which risk factors need additional attention. In the future, supplementary research will be carried out gradually from the above perspectives.

To sum up, for patients with arrhythmia after acute myocardial infarction, high-quality nursing intervention can effectively relieve patients' bad mood, improve heart function, improve self-improvement ability and quality of life.

Disclosure of conflict of interest

None.

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References

[1] Yang F, Liu W, Yan X, Zhou H, Zhang H, Liu J, Yu M, Zhu X and Ma K. Effects of mir-21 on cardiac microvascular endothelial cells after acute myocardial infarction in rats: role of phosphatase and tensin homolog (PTEN)/vascular endothelial growth factor (VEGF) signal pathway. Med Sci Monit 2016; 22: 3562-3575.

[2] Xue S, Zhu W, Liu D, Su Z, Zhang L, Chang Q and Li P. Circulating miR-26a-1, miR-146a and miR-199a-1 are potential candidate biomarkers for acute myocardial infarction. Mol Med 2019; 25: 18.

[3] Agiannitopoulos K, Pavlopoulou P, Tsamis K, Bampali K, Samara P, Nasioulas G, Mertzanos G, Babalis D and Lamnissou K. Expression of miR-208b and miR-499 in greek patients with acute myocardial infarction. In Vivo 2018; 32: 313-318.

[4] Yin Y, Han W and Cao Y. Association between activities of SOD, MDA and Na(+)-K(+)-ATPase in peripheral blood of patients with acute myocardial infarction and the complication of varying degrees of arrhythmia. Hellenic J Cardiol 2019; 60: 366-371.

[5] Della Rocca DG, Santini L, Forleo GB, Sanniti A, Del Prete A, Lavalle C, Di Biase L, Natale A and Romeo F. Novel perspectives on arrhythmia-induced cardiomyopathy: pathophysiology, clinical manifestations and an update on invasive management strategies. Cardiol Rev 2015; 23: 135-141.

[6] Zhang Y, Cao H, Jiang P and Tang H. Cardiac rehabilitation in acute myocardial infarction patients after percutaneous coronary intervention: A community-based study. Medicine (Baltimore) 2018; 97: e9785.

[7] Daniel M, Agewall S, Berglund F, Caidahl K, Collste O, Ekenbäck C, Frick M, Henareh L, Jernberg T, Malmqvist K, Schenck-Gustafsson K, Spaak J, Sundin Ö, Sörensson P, Y-Hassan S, Hofman-Bang C and Tornvall P. Prevalence of anxiety and depression symptoms in patients with myocardial infarction with non-obstructive coronary arteries. Am J Med 2018; 131: 1118-1124.

[8] Spaulding EM, Marvel FA, Lee MA, Yang WE, Demo R, Wang J, Xun H, Shah L, Weng D, Fashanu OE, Carter J, Sheidy J, McLin R, Flowers J, Majmudar M, Elgin E, Vilarino V, Lumelsky D, Bhardwaj V, Padula W, Allen JK and Mar-

tin SS. Corrie health digital platform for self-management in secondary prevention after acute myocardial infarction. Circ Cardiovasc Qual Outcomes 2019; 12: e005509.
[9] Withers KL, Wood KA, Carolan-Rees G, Patrick H, Lencioni M and Griffith M. Living on a knife edge-the daily struggle of coping with symptomatic cardiac arrhythmias. Health Qual Life Outcomes 2015; 13: 86.
[10] Symon A, McFadden A, White M, Fraser K and Cummins A. Using a quality care framework to evaluate user and provider experiences of maternity care: a comparative study. Midwifery 2019; 73: 17-25.
[11] Shin E and Yoon SH. Development of the patient-centered nursing culture scale for hospitals. J Korean Acad Nurs 2019; 49: 613-630.
[12] Jeong H and Park M. A predictive model on patient-centered care of hospital nurses in Korea. J Korean Acad Nurs 2019; 49: 191-202.
[13] Turan Kavradim S and Canli Ozer Z. The effect of education and telephone follow-up intervention based on the Roy Adaptation Model after myocardial infarction: randomised controlled trial. Scand J Caring Sci 2020; 34: 247-260.
[14] Tsai ST and Chou FH. The effectiveness of multimedia nursing education on reducing illness-related anxiety and uncertainty in myocardial infarction patients after percutaneous coronary intervention. Hu Li Za Zhi 2012; 59: 43-53.
[15] Ferrante M, De Luca G, Fantaci G, Pollina Addario S and Scondotto S. Distance from the nearest hospital and mortality for acute miocardial infarction (AMI) in Sicily Region (Southern Italy). Epidemiol Prev 2014; 38: 373-378.
[16] Guo L, Soderhamn U, McCallum J, Ding X, Gao H, Guo Q, Liu K and Liu Y. Testing and comparing two self-care-related instruments among older Chinese adults. PLoS One 2017; 12: e0182792.
[17] Zurca AD, Olsen N and Lucas R. Development and validation of the pediatric resuscitation and escalation of care self-efficacy scale. Hosp Pediatr 2019; 9: 801-807.
[18] Liang Y, Chen M, Zheng X and Liu J. Screening for Chinese medical staff mental health by SDS and SAS during the outbreak of COVID-19. J Psychosom Res 2020; 133: 110102.
[19] Briongos-Figuero S, Estevez A, Perez ML, Martinez-Ferrer JB, Garcia E, Vinolas X, Arenal A, Alzueta J and Munoz-Aguilera R. Prognostic role of NYHA class in heart failure patients undergoing primary prevention ICD therapy. ESC Heart Fail 2020; 7: 279-283.
[20] Bluthner E, Bednarsch J, Stockmann M, Karber M, Pevny S, Maasberg S, Gerlach UA, Pascher A, Wiedenmann B, Pratschke J and Pape UF. Determinants of quality of life in patients with intestinal failure receiving long-term parenteral nutrition using the SF-36 questionnaire: a German single-center prospective observational study. JPEN J Parenter Enteral Nutr 2020; 44: 291-300.
[21] Arai R, Fukamachi D, Akutsu N, Tanaka M and Okumura Y. Surviving case of a blowout-type left ventricular free wall rupture during percutaneous coronary intervention for a lateral acute myocardial infarction. Int Heart J 2020; 61: 606-610.
[22] Javidanpour S, Dianat M, Badavi M and Mard SA. The inhibitory effect of rosmarinic acid on overexpression of NCX1 and stretch-induced arrhythmias after acute myocardial infarction in rats. Biomed Pharmacother 2018; 102: 884-893.
[23] Xu X, Bao H, Strait KM, Edmondson DE, Davidson KW, Beltrame JF, Bueno H, Lin H, Dreyer RP, Brush JE, Spertus JA, Lichtman JH, D'Onofrio G and Krumholz HM. Perceived stress after acute myocardial infarction: a comparison between young and middle-aged women versus men. Psychosom Med 2017; 79: 50-58.
[24] Hua CY, Huang Y, Su YH, Bu JY and Tao HM. Collaborative care model improves self-care ability, quality of life and cardiac function of patients with chronic heart failure. Braz J Med Biol Res 2017; 50: e6355.
[25] Mohammadpour A, Rahmati Sharghi N, Khosravan S, Alami A and Akhond M. The effect of a supportive educational intervention developed based on the Orem's self-care theory on the self-care ability of patients with myocardial infarction: a randomised controlled trial. J Clin Nurs 2015; 24: 1686-1692.
[26] Serpytis P, Navickas P, Lukaviciute L, Navickas A, Aranauskas R, Serpytis R, Deksnyte A, Glaveckaite S, Petrulioniene Z and Samalavicius R. Gender-based differences in anxiety and depression following acute myocardial infarction. Arq Bras Cardiol 2018; 111: 676-683.
[27] Dougherty CM, Lewis FM, Thompson EA, Baer JD and Kim W. Short-term efficacy of a telephone intervention by expert nurses after an implantable cardioverter defibrillator. Pacing Clin Electrophysiol 2004; 27: 1594-1602.
[28] AbuRuz ME. Patients with ST segment elevation myocardial infarction: moderating effect of perceived control on the relationship between depression and in-hospital complications. BMC Cardiovasc Disord 2019; 19: 143.
[29] Park M, Song R and Jeong JO. Effect of goal attainment theory based education program on cardiovascular risks, behavioral modification, and quality of life among patients with first episode of acute myocardial infarction: randomized study. Int J Nurs Stud 2017; 71: 8-16.