

Effect of Personalized Nursing on The Success Rate, Emotional Status, Complications and Nursing Satisfaction of Pre-Hospital Emergency Care for Patients with Acute Myocardial Infarction

Yuanfang Liao^a, Kaiqun Huang^b, Jiyun Hong^c, Junying Pan^b, Zhongjian Chen^d, Zhiyun Guan^{e*}

Abstract

Objective: To explore the effect of pre-hospital personalized emergency care on patients with acute myocardial infarction.

Methods: Altogether 118 patients with acute myocardial infarction admitted to our hospital from April 2018 to August 2019 were selected, 56 of them received routine emergency care as the group A, 62 of them received personalized care based on group A as the group B. The success rate of first aid, emotional status, complications, self-care ability and satisfaction were observed.

Results: The group B had higher success rate of first aid, better emotional status, fewer complications, higher satisfaction and better self-care ability ($P < 0.05$).

Conclusion: Personalized nursing in pre-hospital emergency is beneficial to patients with acute myocardial infarction.

Keywords: Personalized care, acute myocardial infarction, first aid success rate, emotional status, complications, nursing satisfaction.

Introduction

Acute myocardial infarction is the leading cause of death and disability worldwide (Ong et al., 2018). It may be caused by ischemic heart disease or coronary artery disease (Aydin et al., 2019), usually caused by coronary artery thrombosis, resulting in sudden and severe reduction of blood flow (Claeys et al., 2017). Globally, more than 7 million people experience acute myocardial infarction every year. Although the mortality rate has decreased in recent years (Piepoli et al., 2017), the mortality rate of acute myocardial infarction complicated with cardiogenic shock is still very high (Ouweneel et al., 2017). Nearly 25% of patients with first acute myocardial infarction still suffer from heart failure within one year. And every myocardial infarction area increases by 5%, the hospitalization rate of all-cause mortality and heart failure increases by 20%

^a Nursing Department, Beihai people's Hospital, Beihai 536000, P.R.China

^b Department of Cardiology, Beihai people's Hospital, Beihai 536000, P.R.China

^c Pre hospital emergency department, Beihai people's Hospital, Beihai 536000, P.R.China

^d Emergency chest pain department, Beihai people's Hospital, Beihai 536000, P.R.China

^e Respiratory medicine, Beihai people's Hospital, Beihai 536000, P.R.China

*Corresponding author: Zhiyun Guan

in one year (Esposito et al., 2018). In order to ensure that patients with acute myocardial infarction can be admitted to hospital quickly and safely, first aid treatment is required for patients. Pre-hospital emergency care is an important part of the health system (Balikuddembe et al., 2017), which is also part of the patient care chain system, and continues from the occurrence of the event to the recovery and discharge of the patient. The aim is to provide care to ensure the immediate transfer of patients and reduce mortality (Torabi et al., 2018). For patients with cardiovascular diseases, the "golden time" of pre-hospital emergency care is very important, but it is a relatively underdeveloped research field. Currently, it is possible to take many advanced interventions, and further research is needed to improve survival rate and reduce morbidity (Lockey et al., 2017). This study aimed to explore the effect of pre-hospital personalized first aid care on patients with acute myocardial infarction, and good results were expected.

1. Data and methods

1.1 General data

Altogether 118 patients with acute myocardial infarction admitted to our hospital from April 2018

to August 2019 were selected, 56 of them received routine emergency care as the group A, 62 of them received personalized care based on group A as the group B.

1.2 Exclusion and inclusion criteria

Inclusion criteria: The dynamic elevation of cardiac troponin exceeded the upper limit of the reference value by 99% and patients were accompanied by dyspnea, chest pain and abdominal discomfort (Mueller et al., 2017) when admitted; the patients and their families were informed and signed informed consent forms, and the study was approved by the Ethics Committee of our hospital.

Exclusion criteria: patients with liver, kidney and respiratory insufficiency; patients with major hematological diseases; patients with severe trauma; minor patients.

1.3 Nursing methods

Group A received routine emergency care: rapid visits, understanding of the disease, monitoring of vital signs, cardiac resuscitation, oxygen inhalation, establishment of venous access and analgesia were applied.

Group B received personalized care on the basis of group A:

(1) **Timely visiting:** the professional quality and ability of visiting personnel were required. When receiving emergency calls, the nursing staff should understand the illness and appease the family members, send out a message to dispatch an ambulance, and at the same time guide the family members to make corresponding emergency measures to ensure the temporary safety of patients.

(2) **Emergency care:** the nursing staff should clean up the environment to keep quiet as soon as possible, and reduce the patient's large movements. Patients were often accompanied by chest squeezing pain, so it was needed to communicate with the patient to reduce the patient's tension and excitement and enhance the treatment confidence. Rapid establishment of venous access and appropriate establishment of multiple access were performed, this process needed skilled medical personnel to reduce the pain of patients. At the same time, various vital signs were observed to understand possible complications and signs and actively take measures to prevent them. During the period, the details were recorded. (3) **Psychological nursing:** this process should be considered according to different conditions of patients. Due to acute myocardial

infarction with acute onset and severe pain, patients would form negative emotions of fear, which was not conducive to the rescue and might aggravate the illness. Nurses should have strong pressure resistance, use reasonable words and actions to relieve patients' emotions and enhance patients' trust.

(4) **Transport care:** After the patient's condition was relieved, the patient needed to be transferred for treatment. Before this, the consent forms should be signed by the family members and the problems that might occur during the transfer should be explained. After obtaining the consent of the family members, the hospital and relevant departments should be ready to meet immediately. In the process of transportation, patients needed to lie down on stretchers smoothly, avoid moving, and maintain the usual care of venous access. The shift state of the patients should be recorded when transferred to the hospital, and the green channel was opened for critically ill patients to save lives.

1.4 Observation indicators

(1) **Self-rating Anxiety Scale (SAS)** (Svanborg et al., 1994) and **Self-rating Depression Scale (SDS)** (Zung, 1965) were used to observe the anxiety and depression of patients. The score was positively related to the anxiety and depression.

(2) **The self-care ability of the two groups after nursing** was observed with reference to the exercise of self-care agency scale (ESCA) (Gao et al., 2017), including self-care concept, skills, knowledge and sense of responsibility. The total score was 100 points, and the score was positively related to the ability.

2. Statistical methods

SPSS 20.0 (SPSS, Inc., Chicago, IL, USA) was used for statistical analysis. The measurement data were analyzed by t test and expressed as mean \pm standard deviation ($\bar{x} \pm s$). Paired t test was used before and after nursing. Chi-square test was used for counting data, which was expressed as percentage (%). When $P < 0.05$, the difference was statistically significant.

3. Results

3.1 General data of two groups of patients

There was no difference in general data between the two groups ($P > 0.05$). See Table 1 for details

3.2 Personalized emergency care had shorter first aid time

The response time of group A and group B were (75.68 ± 6.38) s and (42.25 ± 4.54) s, respectively.

The first aid time of group A and group B were (43.28±3.63)min and (25.43±3.22)min, respectively. The admission time of group A and group B were (3.24± 0.57) h, (2.17± 0.26) h,

respectively. The response time, first aid and admission time of group B were shorter than group A ($P<0.05$), which showed that group B has higher efficiency. See Figure 1 for details

Table 1. General data of patients [n (%)] (x±sd)

Classification	Group a (n=56)	Group b (n=62)	t/ χ^2 value	P value
Gender			0.672	0.412
Male	24 (42.86)	22 (35.48)		
Female	32 (57.14)	40 (64.52)		
Age (years)	67.43±5.38	68.21±4.69	0.841	0.401
Height (cm)	173.27±6.24	172.43±5.45	0.780	0.436
Weight (kg)	63.32±4.72	64.13±4.28	0.977	0.330
Residence			0.014	0.904
Rural	25 (44.64)	27 (43.55)		
Urban	31 (55.36)	35 (56.45)		
Educational level			0.000	0.979
Below high school	36 (64.29)	40 (64.52)		
Above high school	20 (35.71)	22 (35.48)		
Nationality			1.629	0.201
Han	43 (76.79)	41 (66.13)		
Minorities	13 (23.21)	21 (33.87)		
Economic level			0.553	0.758
Poor	15 (26.79)	13 (20.97)		
Fairly well-of	22 (39.28)	26 (41.93)		
Rich	19 (33.93)	23 (37.10)		
Stay up late			0.850	0.356
Yes	18 (32.14)	25 (40.32)		
No	38 (67.86)	37 (59.68)		
Exercise			0.006	0.934
Yes	33 (58.93)	37 (59.68)		
No	23 (41.07)	25 (40.32)		
Obesity				
Yes	37 (66.07)	33 (53.23)		
No	19 (33.93)	29 (46.77)		
Other symptoms				
General symptom	27 (48.21)	35 (56.45)		
Mental disorder	20 (35.71)	15 (24.19)		
Heart failure	9 (16.07)	12 (19.35)		

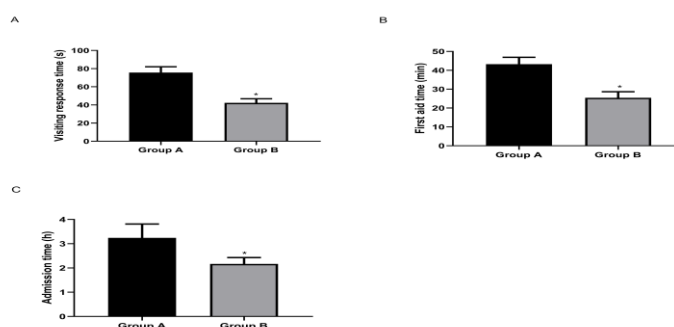


Figure 1. Comparison of efficiency between two groups.

(A) Comparison of the response time between the two groups: those of group B was significantly shorter than that of group A ($P<0.05$). Note: * indicates compared with group A ($P<0.05$).

(B) Comparison of first aid time between the two groups: the first aid time in group B was significantly shorter than that in group A ($P < 0.05$). Note: * indicates compared with group A ($P < 0.05$).

(C) Comparison of admission time between the two groups: the admission time of group B was significantly shorter than that of group A ($P < 0.05$). Note: * indicates compared with group A ($P < 0.05$).

3.3 The success rate of personalized emergency care was higher

The first aid diagnosis rate, transfer success rate and first aid success rate of group B were higher

than those of group A ($P < 0.05$), which showed that the first aid success rate of personalized emergency care was higher, as shown in Figure 2 for details.

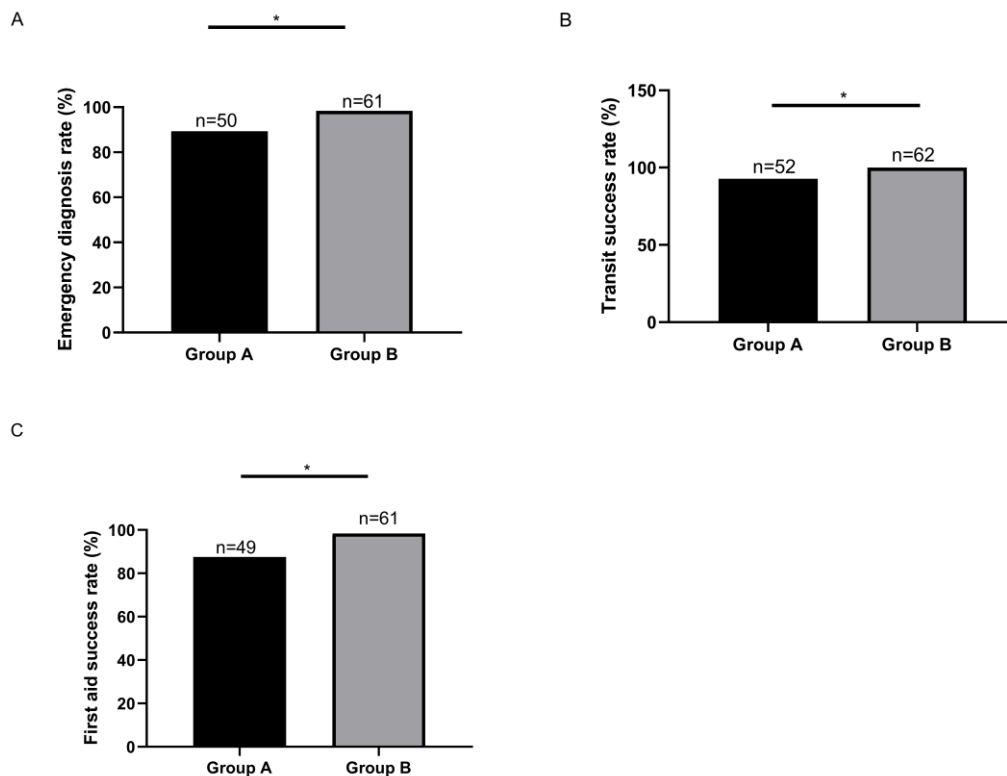


Figure 2. Comparison of success rate of first aid between two groups.

(A) The first aid diagnosis rate of group B was significantly higher than that of group A ($P < 0.05$). Note: * indicates that a comparison between group A and group B ($P < 0.05$).

(B) Comparison of the success rate of transportation between the two groups: the success rate of transport in group B was significantly higher than that in group A ($P < 0.05$). Note: * indicates that a comparison between group A and group B ($P < 0.05$).

(C) Comparison of the success rate of first aid between the two groups: the success rate of first aid in group B was significantly higher than that in group A ($P < 0.05$). Note: * indicates that a comparison between group A and group B ($P < 0.05$).

3.4 The anxiety score of personalized emergency care was lower

SAS scores before and after nursing in group A were (36.12 ± 3.48) and (27.34 ± 2.65) respectively. SAS scores before and after nursing in group B were (37.43 ± 3.26) and (19.24 ± 2.14) respectively. There was no difference in SAS scores before nursing between the two groups ($P > 0.05$). SAS scores after nursing decreased in both groups, and those in group B were lower than those in group A ($P < 0.05$), as shown in Figure 3.

There was no difference in SAS scores before nursing between the two groups ($P > 0.05$). SAS scores after nursing in the two groups were significantly decreased and those in group B were lower than those in group A ($P < 0.05$). Note: *

indicates comparison within the group before nursing ($p < 0.05$); # indicates compared with group A ($P < 0.05$).

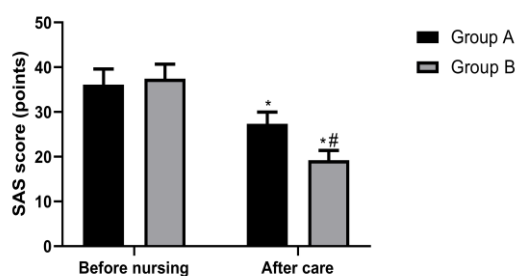


Figure 3. Comparison of anxiety scores between the two groups before and after nursing.

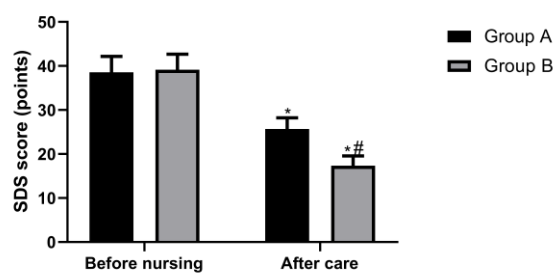


Figure 4. Comparison of depression scores between the two groups before and after nursing.

3.5 The depression score of personalized emergency care was lower

The SDS scores of group A before and after nursing were (38.58 ± 3.62) and (25.69 ± 2.54) respectively. The SDS scores of group B before and after nursing were (39.13 ± 3.56) and (17.35 ± 2.21) respectively. There was no difference in SDS score between the two groups before nursing ($P > 0.05$). SDS score after nursing decreased in both groups, and those in group B were lower than those in group A ($P < 0.05$), as shown in Figure 4 for details.

There was no difference in SDS score between the two groups before nursing ($P > 0.05$). SDS score after nursing in the two groups decreased significantly and that in group B was lower than that in group A ($P < 0.05$). Note: * indicates comparison within the group before nursing ($p < 0.05$); # indicates compared with group A ($P < 0.05$).

3.6 Personalized emergency care had fewer complications

The total incidence rate in group B was lower than that in group A ($P < 0.05$), see Table 2 for details.

Table 2. Comparison of complications between the two groups [n (%)]

Complication	Group A (n=56)	Group B (n=62)	χ^2 value	P value
Cardiogenic shock	4 (7.14)	1 (1.61)	-	-
Arrhythmia	3 (5.36)	2 (3.23)	-	-
Heart failure	2 (3.57)	1 (1.61)	-	-
Pulmonary edema	3 (5.36)	0 (0.00)	-	-
Total incidence	12 (21.43)	4 (6.45)	5.631	0.017

3.7 The satisfaction of personalized emergency care was higher

The satisfaction of group B was higher than that of group A ($p < 0.05$), as shown in Table 3 for details.

Table 3. Comparison of satisfaction between two groups [n(%)]

Satisfaction	Group A (n=56)	Group B (n=62)	χ^2 value	P value
Satisfied	21 (37.50)	37 (59.68)	-	-
Basically satisfied	24 (42.86)	22 (35.48)	-	-
Dissatisfied	11 (19.64)	3 (4.84)	-	-
Overall satisfaction rate	45 (80.36)	59 (95.16)	6.167	0.013

3.8 Personalized emergency care had higher self-care ability

The self-care concepts of group A and group B were (65.24 ± 4.54) and (78.43 ± 5.18) respectively. The self-care knowledge of group A and group B was (72.32 ± 5.29) and (81.26 ± 4.84) respectively. The self-care responsibility of group A and group B

were (57.28 ± 5.32) and (79.84 ± 6.45) respectively. The self-care skills of group A and group B were (62.63 ± 6.21) and (85.47 ± 4.23) respectively. The self-care ability of group B after nursing was higher than that of group A ($P < 0.05$), see Table 4 for details.

Table 4. Comparison of self-care ability of two groups after nursing ($\bar{x} \pm s$)

Group	n	Self-care concept	Self-care knowledge	Responsibility of self-care	Self-care skills
-------	---	-------------------	---------------------	-----------------------------	------------------

Group A	56	65.24±4.54	72.32±5.29	57.28±5.32	62.63±6.21
Group B	62	78.43±5.18	81.26±4.84	79.84±6.45	85.47±4.23
t		14.640	9.587	20.600	23.540
p		<0.001	<0.001	<0.001	<0.001

Discussion

Personalized nursing is a patient-centered whole-person treatment plan method (Bolton et al., 2020), which is a formal process for clinicians and patients to cooperate to create longitudinal treatment plans. It is a frequently mentioned tool for improving the quality of primary care for patients with complicated medical care and high demand, and is patient-centered (Edwards et al., 2017). Clinicians also carry out personalized treatment by reviewing the qualification criteria and baseline table of clinical trials, so as to apply the results of subgroup analysis in gestalt treatment or systematic evaluation as the clinical basis for treating specific patients (McAlister et al., 2017). Pre-hospital personalized emergency care belongs to personalized care. Since acute myocardial infarction has acute onset, nursing staff should arrive at the patient's location as soon as possible so as not to delay the "golden treatment time". The results of this study also showed that personalized emergency care was more efficient and faster and had shorter hospitalization time. It is because our personalized nurses have received professional training to enhance their decision-making skills, which is helpful for nurses to make quick decisions and handle emergencies. Some studies have found that there is a correlation between the use of specialized emergency physicians' care mode and the reduction of transportation time, and the emergency specialized emergency physician model plays an important role in coping with the increasing number of patients who need to be transported by ambulance (Higashi et al., 2019). This can all reveal that professional personalized first aid care can reduce first aid time. Faster admission of patients to hospital may be related to good treatment results. Some studies showed that starting appropriate treatment as early as possible was related to improving prognosis, and that well-defined clinical programs have the potential to guide individual risk stratification and treatment decisions, thus possibly improving the nursing and treatment effects of patients (Schuetz et al., 2012). The results of this study also showed that personalized first aid care had a higher success rate of first aid, patients and their families were more willing to accept transfer, and the occurrence of complications of patients was less. The reason for this result may be the professionalism of the individualized nursing staff and the detection of all

vital signs of the patient during the process. If an emergency occurs, the patient can be treated quickly. Other studies have shown that emergency nursing intervention can increase safety, minimize pain and increase the possibility of survival of patients (Andersson et al., 2017). All these show that personalized emergency care is effective and safe.

Social and emotional support is an important structure, which is related to reducing the risks of mental diseases, physical diseases and mortality (Strine et al., 2008). Negative emotions can seriously affect self-perception, and are closely related to prevention and treatment (Bekker et al., 2004), which may have negative cumulative effects on brain and body (Prendes-Alvarez and Nemeroff, 2018). Some studies showed that potential social psychological interventions should give priority to anxiety and depression so that effective coping strategies could be formulated in the future (Bachmann et al., 2018). Therefore, personalized nursing staff should appease the patients and ease their emotions throughout the first aid period, and our research results also showed that the emotional scores of patients undergoing personalized first aid care were lower. Some studies found that there was an obvious relationship of nurses with patients' emotions and depression scores (Sacher et al., 2018), and our personalized nurses communicated patiently with patients and respected each other, so this may be the reason for the better emotional status. Finally, we concluded that the patient satisfaction and self-care ability of personalized care mode were higher. Studies have shown that the intervention of personalized care can enhance patients' trust and satisfaction with nursing staff (Berman et al., 2016), and can also enhance disease control, strengthen self-management and reduce resource consumption (Lopez-Martinez et al., 2017).

To sum up, personalized emergency care can increase the success rate of emergency care for patients with acute myocardial infarction and reduce complications.

References

- [1] Andersson SO, Lundberg L, Jonsson A, Tingstrom P and Abrandt Dahlgren M 2017. Doctors' and nurses' perceptions of military pre-hospital emergency care

- When training becomes reality. *Int Emerg Nurs* ; 32: 70-77. [Dhttps://doi.org/10.1016/j.ienj.2017.01.001](https://doi.org/10.1016/j.ienj.2017.01.001)
- [2] Aydin S, Ugur K, Aydin S, Sahin I and Yardim M 2019. Biomarkers in acute myocardial infarction: current perspectives. *Vasc Health Risk Manag* ; 15: 1-10. doi: 10.2147/VHRM.S166157.
- [3] Bachmann AS, Zaunbauer AC, Tolke AM, Siniatchkin M, Kluck C, Wiltfang J and Hertrampf K 2018. Well-being and quality of life among oral cancer patients - Psychological vulnerability and coping responses upon entering initial treatment. *J Craniomaxillofac Surg*; 46: 1637-1644. <https://doi.org/10.1016/j.jcms.2018.05.042>
- [4] Balikuddembe JK, Ardalan A, Khorasani-Zavareh D, Nejati A and Raza O 2017. Weaknesses and capacities affecting the Prehospital emergency care for victims of road traffic incidents in the greater Kampala metropolitan area: a cross-sectional study. *BMC Emerg Med*; 17: 29. <https://doi.org/10.1186/s12873-017-0137-2>.
- [5] Bekker MH, van de Meerendonk C and Mollerus J 2004. Effects of negative mood induction and impulsivity on self-perceived emotional eating. *Int J Eat Disord*; 36: 461-469. <https://doi.org/10.1002/eat.20041>
- [6] Berman AT, Rosenthal SA, Moghanaki D, Woodhouse KD, Movsas B and Vapiwala N 2016. Focusing on the "Person" in Personalized Medicine: The Future of Patient-Centered Care in Radiation Oncology. *J Am Coll Radiol* ; 13: 1571-1578) <https://doi.org/10.1016/j.jacr.2016.09.012>
- [7] Bolton RE, Bokhour BG, Hogan TP, Luger TM, Ruben M and Fix GM 2020. Integrating Personalized Care Planning into Primary Care: a Multiple-Case Study of Early Adopting Patient-Centered Medical Homes. *J Gen Intern Med* ; 35: 428-436. <https://doi.org/10.1007/s11606-019-05418-4>.
- [8] Claeys MJ, Rajagopalan S, Nawrot TS and Brook RD 2017. Climate and environmental triggers of acute myocardial infarction. *Eur Heart J* ; 38: 955-960. <https://doi.org/10.1093/eurheartj/ehw151>.
- [9] Edwards ST, Dorr DA and Landon BE 2017. Can Personalized Care Planning Improve Primary Care? *JAMA* ; 318: 25-26. doi:10.1001/jama.2017.6953
- [10] Esposito ML, Zhang Y, Qiao X, Reyelt L, Paruchuri V, Schnitzler GR, Morine KJ, Annamalai SK, Bogins C, Natov PS, Pedicini R, Breton C, Mullin A, Mackey EE, Patel A, Rowin E, Jaffe IZ, Karas RH and Kapur NK 2018. Left Ventricular Unloading Before Reperfusion Promotes Functional Recovery After Acute Myocardial Infarction. *J Am Coll Cardiol* ; 72: 501-514. DOI: 10.1016/j.jacc.2018.05.034.
- [11] Gao H, Soderhamn U, Cliffordson C, Guo L, Guo Q and Liu K 2017. Reliability and validity of the Chinese version of the Self-care Ability Scale for the Elderly. *J Clin Nurs* ; 26: 4489-4497. <https://doi.org/10.1111/jocn.13779>
- [12] Higashi H, Takaku R, Yamaoka A, Lefor AK and Shiga T 2019. The Dedicated Emergency Physician Model of emergency care is associated with reduced pre-hospital transportation time: A retrospective study with a nationwide database in Japan. *PLoS One* ; 14: e0215231. <https://doi.org/10.1371/journal.pone.0215231>
- [13] Lockey DJ 2017. Research questions in pre-hospital trauma care. *PLoS Med*; 14: e1002345. <https://doi.org/10.1371/journal.pmed.1002345>.
- [14] Lopez-Martinez N, Segu JL, Vazquez-Castro J, Brosa M, Bohigas L, Comellas MJ and Kalfhaus L 2017. Analysis of the implementation of a personalized care model in diabetes mellitus as an example of chronic disease with information and communication technology support. *Expert Rev Pharmacoecon Outcomes Res*; 17: 141-148. <https://doi.org/10.1080/14737167.2017.1290525>
- [15] McAlister FA, Laupacis A and Armstrong PW 2017. Finding the right balance between precision medicine and personalized care. *CMAJ* ; 189: E1065-E1068. DOI: <https://doi.org/10.1503/cmaj.170107>
- [16] Mueller C, Giannitsis E, Mockel M, Huber K, Mair J, Plebani M, Thygesen K, Jaffe AS, Lindahl B and Biomarker Study Group of the ESCACCA 2017. Rapid rule out of acute myocardial infarction: novel biomarker-based strategies. *Eur Heart J Acute Cardiovasc Care* ; 6: 218-222. <https://doi.org/10.1177/2048872616653229>.
- [17] Ong SB, Hernandez-Resendiz S, Crespo-Avilan GE, Mukhametshina RT, Kwek XY, Cabrera-Fuentes HA and Hausenloy DJ 2018. Inflammation following acute myocardial infarction: Multiple players, dynamic roles, and novel therapeutic opportunities. *Pharmacol Ther*; 186: 73-87. <https://doi.org/10.1016/j.pharmthera.2018.01.001>.
- [18] Ouweneel DM, Eriksen E, Sjaauw KD, van Dongen IM, Hirsch A, Packer EJ, Vis MM, Wykrzykowska JJ, Koch KT, Baan J, de Winter RJ, Piek JJ, Lagrand WK, de Mol BA, Tijssen JG and Henriques JP 2017. Percutaneous Mechanical Circulatory Support Versus Intra-Aortic Balloon Pump in Cardiogenic Shock After Acute Myocardial Infarction. *J Am Coll Cardiol* ; 69: 278-287. DOI: 10.1016/j.jacc.2016.10.022.
- [19] Piepoli MF, Corra U, Dendale P, Frederix I, Prescott E, Schmid JP, Cupples M, Deaton C, Doherty P, Giannuzzi P, Graham I, Hansen TB, Jennings C, Landmesser U, Marques-Vidal P, Vrints C, Walker D, Bueno H, Fitzsimons D and Pelliccia A 2017. Challenges in secondary prevention after acute myocardial infarction: A call for action. *Eur Heart J Acute Cardiovasc Care* ; 6: 299-310. <https://doi.org/10.1177/2047487316663873>.
- [20] Prendes-Alvarez S and Nemeroff CB 2018. Personalized medicine: Prediction of disease vulnerability in mood disorders. *Neurosci Lett* ; 669: 10-13. <https://doi.org/10.1016/j.neulet.2016.09.049>
- [21] Sacher M, Meixensberger J and Krupp W 2018. Interaction of quality of life, mood and depression of patients and their informal caregivers after surgical treatment of high-grade glioma: a prospective study. *J Neurooncol* ; 140: 367-375. <https://doi.org/10.1007/s11060-018-2962-x>

- [22] Schuetz P, Haubitz S and Mueller B 2012. Do sepsis biomarkers in the emergency room allow transition from bundled sepsis care to personalized patient care? *Curr Opin Crit Care*; 18: 341-349. doi: 10.1097/MCC.0b013e328354b2c8
- [23] Strine TW, Chapman DP, Balluz L and Mokdad AH 2008. Health-related quality of life and health behaviors by social and emotional support. Their relevance to psychiatry and medicine. *Soc Psychiatry Psychiatr Epidemiol*; 43: 151-159. <https://doi.org/10.1007/s00127-007-0277-x>
- [24] Svanborg P and Asberg M 1994. A new self-rating scale for depression and anxiety states based on the Comprehensive Psychopathological Rating Scale. *Acta Psychiatr Scand*; 89: 21-28. <https://doi.org/10.1111/j.1600-0447.1994.tb01480.x>
- [25] Torabi M, Borhani F, Abbaszadeh A and Atashzadeh-Shoorideh F 2018. Experiences of pre-hospital emergency medical personnel in ethical decision-making: a qualitative study. *BMC Med Ethics*; 19: 95. <https://doi.org/10.1177/0969733015604700>.
- [26] Zung WW 1965. A Self-Rating Depression Scale. *Arch Gen Psychiatry*; 12: 63-70. doi:10.1001/archpsyc.1965.01720310065008.