Int J Clin Exp Med 2020;13(8):5923-5931
www.ijcem.com /ISSN:1940-5901/IJCEM0113236

Original Article

Effect of continuous nursing on negative emotions and self-care ability of patients undergoing coronary artery stent implantation

Xiaojing Zhao, Lin Jin, Weizhong Han, Xiaoyang Hou, Shaolei Yi, Wei Wang

Department of Cardiology, Provincial Hospital Affiliated to Shandong First Medical University (Shandong Provincial Hospital), Ji'nan, Shandong Province, China

Received April 24, 2020; Accepted June 2, 2020; Epub August 15, 2020; Published August 30, 2020

Abstract: Objective: To explore the effect of continuous nursing on negative emotions and self-care ability of patients undergoing coronary artery stent implantation (CASI). Methods: In this prospective study, 117 CASI patients admitted to the Department of Cardiology of Provincial Hospital Affiliated with Shandong First Medical University (Shandong Provincial Hospital) from July 2017 to June 2018 were randomly allocated into research group (59 cases) and control group (58 cases). We evaluated negative emotions, self-care ability, healthy behaviors, quality of life (QOL), nursing satisfaction, and adverse reactions of patients. Results: The 1-year outcomes revealed that self-rating depression scale (SDS) and self-rating anxiety scale (SAS) in the research group were significantly lower than those in the control group ($P<0.01$). The health knowledge, self-concept, self-responsibility and self-care skills in the research group were significantly higher than those in the control group (all $P<0.001$). The health behaviors of health responsibility, mental health, stress management, interpersonal relationship, physical activity and nutrition in the research group were significantly higher than those in the control group (all $P<0.001$). The scores of physical functioning, physical role, physical pain, vitality, social function, role-emotional, mental health, and general health in the research group were significantly higher than those in the control group (all $P<0.05$). The nursing satisfaction in the research group was significantly higher than that in the control group ($P<0.05$). The incidence of radial artery spasm, hematoma, vagus reflex and arrhythmia in the research group was significantly lower than that in the control group ($P<0.01$). Conclusion: Continuous nursing is favorable for the rehabilitation and clearly improves the negative emotions and self-care ability of CASI patients, which is worthy of clinical promotion.

Keywords: Continuous nursing, CASI, negative emotions, self-care ability, health behavior, quality of life, adverse reactions

Introduction

Coronary heart disease (CHD) is a common disease induced by artery stenosis, accounting for 67.1% of cardiovascular related deaths. Owing to the capacity to reconstruct coronary blood flow, coronary artery stent implantation (CASI), a mechanical intervention, and is a preferred treatment for CHD [1]. In CASI, a metal stent is permanently placed in the coronary artery occlusion to support vessel wall through balloon dilatation or self-expansion, so as to achieve the purpose of recanalization and revascularization. Although CASI is effective in greatly reducing the mortality of CHD, it leads to high risks of coronary restenosis. Besides, discharged patients need to take medicine regularly for a long time, along with keeping a reasonable diet and exercise to consolidate surgical effectiveness [2]. In addition, the trauma of CASI itself easily causes postoperative radial artery spasms, edema, vagus nerve reflex, and reduces quality of life (QOL). Moreover, since patients are mostly middle-aged and elderly men, sudden changes in social and family roles may decrease their self-esteem, which results in negative emotions and reduction of enthusiasm for postoperative self-care [3]. Therefore, on the basis of effective psychological guidance, how to ensure their smooth access to continuous family care and improve their self-care ability and adapt to new eating habits, life-

styles and family and social identities is of vital importance.

CASI patients received routine nursing care generally, such as family guidance before discharge and routine follow-up after discharge. However, the long recovery time and outdated nursing leads to poor effectiveness [4]. Therefore, in addition to a precise analysis of the living environment, nursing needs and any major problems associated with CHD, we proposes continuous nursing to make the in-hospital and out-of-hospital nursing coherent, thus enabling patients to receive continuous and cooperative care in different environments. The application of continuous nursing in CASI patients has been rarely explored, so this study aims to provide guidance for clinical nursing by exploring the effect of continuous nursing on negative emotions and self-care ability of patients undergoing CASI [5].

Materials and methods

General data

In this prospective study, 117 CASI patients admitted to the Department of Cardiology of Provincial Hospital Affiliated to Shandong First Medical University (Shandong Provincial Hospital) from July 2017 to June 2018 were enrolled. According to the follow-up mode after discharge, they were allocated into the research group (59 cases) and control group (58 cases) by a random number table. The study was approved by the medical Ethics Committee and all patients signed the informed consent form.

Inclusion criteria: Patients receiving successful CASI for the first time; patients with clear consciousness, normal communication ability and no dyslexia; and cooperative and willing patients.

Exclusion criteria: Patients complicated with functional impairment of other organs, congenital diseases, mental diseases (history) or progressive chronic diseases; patients who were lost to follow-up after discharge or refused to sign the informed consent form.

A total of 114 cases were successfully followed up, 57 in the research group and 57 in the control group. Three cases were lost to follow-up, including 2 cases in the research group (1 for relocation and 1 for loss of contact) and 1 case in the control group (loss of contact).

Methods

Control group: Routine post-discharge follow-up was carried out, including prescribing statins, β receptor blockers, antiplatelet drugs, and calcium channel blockers, and carrying out health education and guidance on diet, exercise, medication, family health care and CHD risk factors.

Research group: Continuous nursing was carried out for post-discharge follow-up as follows.

(1) Set up a continuous nursing team: Seven or eight voluntary nurses were recruited to set up a nursing team, preferably with the participation of nurses who were already caring for the patients to have a good grasp of the conditions. The senior nurse or original nurse was appointed as the leader to make an in-depth analysis on the disease, surgery, constitution, and character of patients, so as to formulate individualized nursing plans. At the same time, the nursing team learned the patients' in-hospital nursing preferences to facilitate a good convergence between in-hospital nursing and post-hospital nursing.

(2) In-hospital guidance: First of all, before discharge, health education was given to the patients and their families, including medication mode, dosage, effectiveness, side effects, possible postoperative complications, preventive measures, treatment, and monitoring methods and standards of blood sugar, blood lipids and blood pressure. Besides, regular medication, prevention of complications and physiological monitoring were emphasized to enhance the self-care ability, improve health behaviors, and facilitate the continuation of post-hospital nursing. Secondly, psychological counseling and targeted preventive guidance were carried out to remind them of their significance to society and family and the effectiveness of after-hospital care, so as to enhance their confidence. Families paid attention to the patients' emotions to facilitate the continuation of post-hospital psychological care. Finally, suggestions on diet and exercise were given. Patients were encouraged to eat

frequent small meals with low-salt, low-fat, low-cholesterol, multivitamins, and balanced nutrition. Exercise was carried out reasonably, moderately and step by step for the continuation of healthy lifestyle after discharge.

(3) Regular telephone follow-up: The nursing team followed up the discharged patients regularly, once a week in the first two months, and once every 2 weeks thereafter. Making sure the nurse on duty answers every call from the patients. First of all, during telephone follow-up, subjective feelings and changes in symptoms were inquired about to know the disease recovery process, the medication compliance including drugs taken and medication mode was inquired about to ensure the correctness of medication. Recording the adverse reactions and corresponding solutions to test their ability to deal with side effects, emphasize the importance and effectiveness of following doctor's advice for maintaining the curative effect of CASI and strengthening their self-care ability. Checking the levels of blood glucose, blood pressure, blood lipids and other self-test records to evaluate their self-test ability, as well as play a supervisory role. Secondly, listening to patients' anxiety and doubts patiently and communicate with their families to understand their psychological state, and guide them to vent negative feelings. Encourage the families to pay more attention and care for their emotions, and provide home visiting service when necessary. Finally, urge the patients to eat healthily and exercise regularly, and give individualized guidance on exercise mode, frequency, intensity according to their rehabilitation condition.

(4) Post-hospital follow-up: The nursing team, according to the situation of the patients at the time of discharge and the information obtained during the telephone follow-up, required the patients to return to the hospital for a re-evaluation, and those with no abnormalities were asked to be reexamined once every 3 months. In addition to the basic examination, large-scale post-CASI health lectures which were presided over by professional medical experts were held to strengthen post-hospital nursing ability. Afterwards, patients were organized to exchange self-care experiences to enhance their enthusiasm. Medication plans and nursing plans were adjusted based on the follow-up outcomes, and the focus of subsequent telephone follow-up was updated.

Outcome measures and evaluation criteria

The following indicators were collected by evaluators face to face with patients before discharge and 1 year after discharge, and the collection duration for each case was not less than 20 min. The questionnaires were retrieved on the spot.

(1) Main outcome measures: Negative emotions: Self-rating anxiety scale (SAS) [6] and self-rating depression scale (SDS) [7]: Each scale has a full score of 100 points with 20 items respectively, and each item is scored 1-4 points. The integer obtained by multiplying the total score of each item by 1.25 is taken as the standard score, which is proportional to anxiety and depression.

Comparison of scores of self-care ability: The exercise of self-care agency (ESCA) scale [8] has a total score of 172 and comprises 43 items, including 4 dimensions of health knowledge, self-care responsibility, self-care skills and self-concept. The sum of each item is the required value, and the value is proportional to the self-care ability.

QOL: The 36-item short form (SF-36) [9] consists of eight dimensions, namely, physical functioning, role-physical, physical pain, vitality, social function, role-emotional, mental health, and general health. The total score of each dimension is 100 points, and the score is proportional to the QOL of this dimension.

(2) Secondary outcome measures: Health behaviors: The health promoting lifestyle profile (HPLP) scale [10] comprises 52 items with a full score of 208 points. There are 6 dimensions, health responsibility, mental health, stress management, interpersonal relationships, physical activity and nutrition. The score is proportional to health behaviors.

Nursing satisfaction: Nursing Satisfaction Standard questionnaire [11] includes 3 parts: highly satisfied (high recognition and affirmation of nursing work); moderately satisfied (recognition and affirmation of nursing work); dissatisfied (no recognition of nursing work). Nursing satisfaction = (highly satisfied + moderately satisfied)/total cases * 100%.

Table 1. Comparison of general information ($\bar{x}$ ± sd, n, %)

Items	Control group (n=57)	Research group (n=57)	χ^2/t	P
Gender			0.000	1.000
Male	40 (70.18)	39 (68.42)		
Female	17 (29.82)	18 (31.58)		
Age (year)	63.2±10.2	64.1±9.8	0.484	0.630
BMI (kg/m^2)	11.34±7.05	11.31±7.06	0.023	0.982
Course of disease (month)	30.1±4.3	30.4±4.1	0.393	0.695
First hospitalization (n, %)	30 (52.63)	31 (54.39)	0.000	1.000
Family history (n, %)	17 (29.82)	18 (31.58)	0.000	1.000
Comorbidities (n, %)			0.183	0.913
Hypertension	43 (75.44)	42 (73.68)		
Diabetes	19 (33.33)	18 (31.58)		
Cerebral infarction	7 (12.28)	8 (14.04)		
Chronic obstructive pulmonary disease	13 (22.81)	14 (24.56)		
Length of hospitalization (d)	12.2±3.8	12.0±3.5	0.272	0.786

Note: BMI: body mass index.

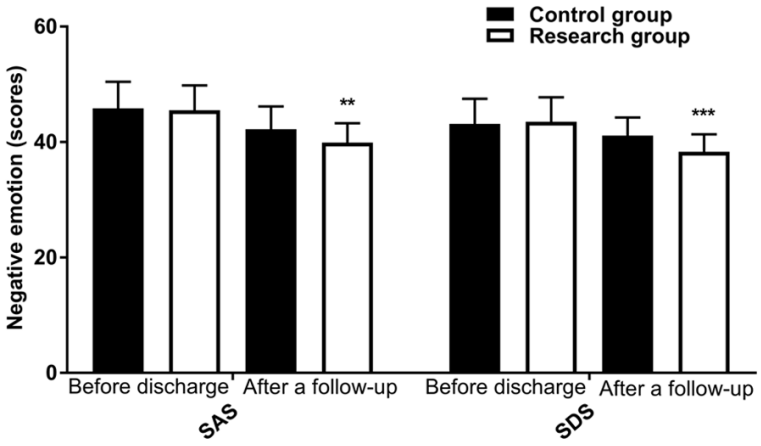

Figure 1. Comparison of negative emotion scores before and after discharge. SAS: self-rating anxiety score; SDS: self-rating depression score. Compared with the control group, **P<0.01, ***P<0.001.

Incidence of complications: There were four complications including radial artery spasm, hematoma, vagus nerve reflex, and arrhythmia. Complication rate = (radial artery spasm + hematoma + vagus nerve reflex + arrhythmia)/ total cases * 100%.

Statistical methods

All statistical data were processed by SPSS 21.0 statistical software. The measurement data conforming to normal distribution were expressed by mean ± standard deviation ($\bar{x}$ ± sd) and analyzed by independent samples t test (denoted by t). All the counting data were expressed by number (percentage) [n (%)] and analyzed by Pearson test (denoted by χ^2). Values of P<0.05 were considered statistically significant.

Results

Comparison of general data

There was no statistical difference in general data between the two groups (all P>0.05), as shown in **Table 1**.

Comparison of SAS and SDS scores before and after discharge

Before discharge, the SAS and SDS scores in the two groups were (45.77±4.65 *vs.* 45.58±4.21, t=0.229, P=0.820), (43.27±4.34 *vs.* 43.58±4.06, t=0.387, P=0.699) respectively, with no significant difference (P>0.05). After follow-up, SAS and SDS scores in research group (39.07±3.41, 38.52±3.18) were significantly lower than those in control group (41.09±3.22, t=3.252, P=0.002), (41.25±3.32, t=4.483, P=0.000) (all P<0.01), as shown in **Figure 1**.

Comparison of self-care ability before and after discharge

Before discharge, there was no significant difference in scores of each dimension and total score of self-care ability between the two

Table 2. Comparison of self-care ability before and after discharge ($\bar{x}$ ± sd, score)

Items		Control group (n=57)	Research group (n=57)	t	P
Health knowledge	Before discharge	37.21±4.31	37.49±4.81	0.327	0.744
	After follow-up	43.01±5.01***	49.01±5.00***	6.400	0.000
Self-concept	Before discharge	19.22±4.02	19.14±3.98	0.107	0.915
	After follow-up	24.03±4.89***	28.79±4.99***	5.144	0.000
Self-responsibility	Before discharge	15.23±3.72	15.35±3.82	0.170	0.865
	After follow-up	21.93±4.63***	28.84±4.87***	7.764	0.000
Self-care skills	Before discharge	25.04±3.74	25.32±3.87	0.393	0.695
	After follow-up	25.90±3.98***	32.32±4.03***	8.558	0.000
Total score	Before discharge	96.45±8.67	96.78±8.75	0.202	0.840
	After follow-up	112.12±13.04***	129.21±14.38***	6.647	0.000

Note: Compared with before discharge, ***P<0.001.

Table 3. Comparison of health behaviors before and after discharge ($\bar{x}$ ± sd, score)

Items		Control group (n=57)	Research group (n=57)	t	P
Health responsibility	Before discharge	10.31±2.32	11.02±2.34	1.627	0.107
	After follow-up	14.43±2.84***	18.43±3.01***	7.298	0.000
Mental health	Before discharge	8.02±2.01	8.11±2.10	0.234	0.816
	After follow-up	12.45±2.85***	16.34±2.93***	7.185	0.000
Stress management	Before discharge	7.34±1.54	7.38±1.34	0.148	0.883
	After follow-up	16.34±2.94***	20.32±3.01***	7.142	0.000
Interpersonal relationship	Before discharge	6.73±1.20	6.87±1.23	0.615	0.540
	After follow-up	13.33±2.73***	18.29±2.82***	9.541	0.000
Physical activity	Before discharge	4.12±0.98	4.13±0.86	0.058	0.954
	After follow-up	7.32±1.01***	10.44±1.20***	15.018	0.000
Nutrition	Before discharge	5.21±0.73	5.30±0.89	0.590	0.556
	After follow-up	9.14±1.21***	13.02±2.00***	12.532	0.000
Total score	Before discharge	41.84±7.59	42.15±7.63	0.218	0.828
	After follow-up	74.01±13.23***	93.35±15.67***	7.120	0.000

Note: Compared with before discharge, ***P<0.001.

groups (P>0.05). After follow-up, the health knowledge, self-concept, self-responsibility and self-care skills in the research group were significantly higher than those in control group (all P<0.001), as shown in **Table 2**.

Comparison of health behaviors before and after discharge

Before discharge, there was no significant difference between the two groups in scores of each dimension and total score of health behaviors (P>0.05). After follow-up, the scores of health responsibility, mental health, stress management, interpersonal relationships, physical activity and nutrition in the research group were significantly higher than those in the control group, as well as the total score of health behaviors (all P<0.001), as shown in **Table 3**.

Comparison of QOL before and after discharge

Before discharge, there was no significant difference in QOL between the two groups (P>0.05). After follow-up, the scores of physical functioning, role-physical, physical pain, vitality, social function, role-emotional, mental health, and general health in the research group were significantly higher than those in the control group (all P<0.05), as shown in **Table 4**.

Comparison of nursing satisfaction between two groups

After follow-up, the nursing satisfaction in the research group was significantly higher than that in the control group (84.21% vs. 64.91%) (P<0.05), as shown in **Table 5**.

Table 4. Comparison of quality of life before and after discharge ($\bar{x}$ ± sd, score)

Items		Control group (n=57)	Research group (n=57)	t	P
Physical functioning	Before discharge	72.34±19.01	72.54±18.93	0.056	0.955
	After follow-up	79.04±14.34***	85.87±13.05***	2.660	0.009
Role-physical	Before discharge	48.34±16.32	47.94±16.01	0.132	0.895
	After follow-up	52.95±17.45***	62.84±18.43***	2.942	0.004
Physical pain	Before discharge	71.43±12.32	71.38±12.04	0.022	0.983
	After follow-up	74.35±12.74***	80.45±13.79***	2.453	0.016
Vitality	Before discharge	71.32±15.04	72.01±15.01	0.245	0.807
	After follow-up	78.85±13.21***	84.03±12.94***	2.115	0.037
Social function	Before discharge	66.32±12.33	67.01±11.98	0.303	0.762
	After follow-up	72.83±11.34***	78.47±11.89***	2.592	0.011
Role-emotional	Before discharge	66.84±17.32	66.34±16.99	0.156	0.877
	After follow-up	70.10±12.35***	76.03±16.20***	2.198	0.030
Mental health	Before discharge	77.58±13.11	77.10±13.84	0.190	0.850
	After follow-up	80.02±15.30***	85.90±14.25***	2.123	0.036
General health	Before discharge	62.31±12.47	63.01±12.35	0.301	0.764
	After follow-up	70.45±13.01***	76.84±14.03***	2.521	0.013

Note: Compared with before discharge, ***P<0.001.

Table 5. Comparison of nursing satisfaction (n, %)

Group	Very satisfied	Basically satisfied	Dissatisfied	Satisfaction
Control group (n=57)	17 (29.82)	20 (35.09)	20 (35.09)	37 (64.91)
Research group (n=57)	31 (54.39)	17 (29.82)	9 (15.79)	48 (84.21)
χ^2				4.625
P				0.032

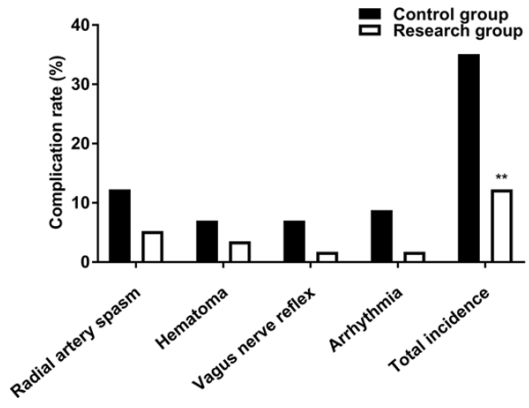

Figure 2. Comparison of complication rates. Compared with the control group, **P<0.01.

Comparison of complication rate between two groups

The total incidence of complications of radial artery spasm (3 cases), hematoma (2 cases), vagus nerve reflex (1 case), arrhythmia (1 case) in the research group was 12.28%, significantly lower than that in the control group (35.09%, 7 cases, 4 cases, 4 cases, 5 cases) (P=0.008, χ^2=6.988), as shown in **Figure 2**.

Discussion

CASI combined with long-term postoperative medication is the first choice to reduce coronary artery restenosis in CHD. However, the enthusiasm for the use of the medication of discharged patients is limited by their own negative emotions and self-care ability. Therefore, post-hospital nursing care is of great significance to improve the rehabilitation and QOL [12-14]. Since routine follow-up has disadvantages of no continuity of in-hospital and out-of-hospital care and single follow-up content [15, 16], this study explores the effect of continuous nursing care on CASI patients.

In this study, the continuous nursing team included the original nurse of the patients, who had a good grasp of the in-hospital nursing characteristics and thus extended them to the post-hospital nursing. Besides, an in-depth analysis on the disease, surgery, constitution,

and character of patients was conducted to ensure the individualization of nursing measures, which guaranteed the continuity of out-of-hospital follow-up. Previous studies have found that, in the continuous care, drawing the essence from the in-hospital nursing care into the home nursing evidently enhances the follow-up effectiveness, proving the reliability of this nursing mode [17, 18]. Nursing instruction before discharge is the key point and lays the foundation for seamless extension from hospital to family care, which mainly includes health education, preventive individualized psychological guidance, and reasonable diet and exercise suggestions. This is the first step to improve patients' self-care ability and healthy behaviors, and emphasizes the importance of medication standards, complication prevention, and physiological monitoring, thus enhancing self-care enthusiasm and reducing complication rate [19]. Regular out-of-hospital telephone follow-up is an important part of nursing, which aims to inspect the implementation of in-hospital guidance, supervise the patient's rehabilitation, psychological state, and healthy behaviors, and guide adverse symptoms and negative emotions. On the one hand, it solves physiological and psychological issues of patients, and on the other hand, it enhances the self-care consciousness and self-care ability, so as to realize seamless continuation of the nursing from hospital to family [20]. Due to the consistent and harmonious interaction between nurses and patients, as well as regular and quantitative telephone follow-up throughout the whole process, the trust and satisfaction of patients and their families are enhanced. Post-CASI rehabilitation measures update the health education focus and optimize the medication plan in a timely manner, which contributes to the rehabilitation of patients [21]. In this study, continuous nursing organized regular follow-up visits for patients. Apart from routine physical examination, patients also received education lectures from experts and exchange of experiences, so as to update rehabilitation methods, strengthen self-care ability and ensure the development and innovation of nursing. The use of continuous care to follow up discharged patients enables patients to enjoy comprehensive, coordinated and consistent individualized care across different care sites [22, 23], providing guidance for clinical care and confirming the reliability of this study.

Our findings revealed that SDS and SAS scores in research group were significantly lower than those in control group after follow-up. This is due to the combination of in-hospital preventive psychological guidance and post-hospital psychological counseling by continuous nursing, which alleviates the negative emotions of patients [24]. The self-care ability, health behaviors and QOL in research group were remarkably better, nursing satisfaction was higher, and complication rate was significantly lower than those in control group. These also benefit from the rigorous and continuous care procedure, which extends in-hospital health guidance to the family, and supervises the patients after discharge, making the care process continuous, time-rich and complete, not only directly accelerating the rehabilitation, but also indirectly gaining the affirmation from the patients and their families [25]. The advantage of this study lies in the establishment of a continuous nursing team, which makes the whole nursing process continuous and comprehensive, avoids disconnected family care and poor nursing, thereby guaranteeing the continuation of family care for CASI patients. The disadvantage lies in the small sample size and being a single center, so the sample size will be increased and a multi-center study will be carried out.

To sum up, continuous nursing is favorable for the rehabilitation and clearly improves the negative emotions and self-care ability of CASI patients, which is worthy of clinical promotion.

Acknowledgements

This work was supported by the Key Research & Development Program of Shandong Province (2016GGB14484) and Clinical Medicine Science & Technology Innovation Plan of Ji'nan Science & Technology Bureau (201907042).

Disclosure of conflict of interest

None.

Address correspondence to: Wei Wang, Department of Cardiology, Provincial Hospital Affiliated to Shandong First Medical University (Shandong Provincial Hospital), No. 324 Jingwu Road, Ji'nan 250021, Shandong Province, China. Tel: +86-0531-68776368; Fax: +86-0531-68776368; E-mail: wangweisl1h@163.com

References

[1] Stegeman R, Breur JMPJ, Heuser J, Jansen NJG, de Vries WB, Vijlbrief DC, Molenschot MMC, Haas F and Krings GJ. Primary coronary stent implantation is a feasible bridging therapy to surgery in very low birth weight infants with critical aortic coarctation. Int J Cardiol 2018; 261: 62-65.

[2] Biscaglia S and Campo G. Meta-analyses on DAPT length: chasing the calm after the (perfect) storm. J Am Coll Cardiol 2017; 70: 1303-1304.

[3] Hwang D, Park KW, Lee JM, Rhee TM, Hong MK, Jang Y, Valgimigli M, Colombo A, Gilard M, Palmerini T, Stone GW and Kim HS. Efficacy and safety of dual antiplatelet therapy after coronary stenting in patients with chronic kidney disease. Am Heart J 2018; 197: 103-112.

[4] Kleinbongard P, Peters J, Jakob H, Heusch G and Thielmann M. Persistent survival benefit from remote ischemic pre-conditioning in patients undergoing coronary artery bypass surgery. J Am Coll Cardiol 2018; 71: 252-254.

[5] Kebapci A and Kanan N. Effects of nurse-led clinical pathway in coronary artery bypass graft surgery: a quasi-experimental study. J Clin Nurs 2018; 27: 980-988.

[6] Uchihashi T, Ota K, Yabuno Y, Ohno S, Fukushima K, Naito Y, Kogo M, Yabuta N and Nojima H. ELAS1 induces apoptotic death in adenocarcinoma DU145 and squamous-cell carcinoma SAS cancer cells, but not in normal KD cells. Oncotarget 2017; 8: 85868-85882.

[7] Jokelainen J, Timonen M, Keinanen-Kiukaanniemi S, Harkonen P, Jurvelin H and Suija K. Validation of the Zung self-rating depression scale (SDS) in older adults. Scand J Prim Health Care 2019; 37: 353-357.

[8] Mohammadi M, Alavi M, Bahrami M and Zandieh Z. Assessment of the relationship between spiritual and social health and the self-care ability of elderly people referred to community health centers. Iran J Nurs Midwifery Res 2017; 22: 471-475.

[9] Hagell P, Westergren A and Arestedt K. Beware of the origin of numbers: standard scoring of the SF-12 and SF-36 summary measures distorts measurement and score interpretations. Res Nurs Health 2017; 40: 378-386.

[10] Skolasky RL, Maggard AM, Wegener ST and Riley LH 3rd. Telephone-based intervention to improve rehabilitation engagement after spinal stenosis surgery: a prospective lagged controlled trial. J Bone Joint Surg Am 2018; 100: 21-30.

[11] Schmidt JL, Wetzel CM, Lange KW, Heine N and Ortmann O. Patients' experience of breast reconstruction after mastectomy and its influence on postoperative satisfaction. Arch Gynecol Obstet 2017; 296: 827-834.

[12] Nonaka Y, Hayashi N, Matsumae M and Fukushima T. Wedge-technique for transposition of the vertebral artery in microvascular decompression for hemifacial spasm: technical nuances and surgical outcomes. Acta Neurochir (Wien) 2019; 161: 1435-1442.

[13] Adams H, Paratz E, Somaratne J, Layland J, Burns A, Palmer S, MacIsaac A and Whitbourn R. Different patients, different outcomes: a case-control study of spontaneous coronary artery dissection versus acute coronary syndrome. J Interv Cardiol 2018; 31: 41-47.

[14] Olivier CB, Turakhia MP and Mahaffey KW. Anticoagulant and antiplatelet therapy choices for patients with atrial fibrillation one year after coronary stenting or acute coronary syndrome. Expert Opin Drug Saf 2018; 17: 251-258.

[15] Beck RW and Riddlesworth TD. Continuous glucose monitoring versus usual care in patients with type 2 diabetes receiving multiple daily insulin injections. Ann Intern Med 2018; 168: 526-527.

[16] Ponzetto A and Figura N. Letter: bleeding in cirrhotics receiving coronary stenting and antiplatelet therapy. Aliment Pharmacol Ther 2017; 46: 709.

[17] Elliott J, Kelly SE, Bai Z, Skidmore B, Boucher M, So DYF and Wells GA. Dual antiplatelet therapy following percutaneous coronary intervention: protocol for a systematic review. BMJ Open 2019; 9: e022271.

[18] De Backer D, Bakker J, Cecconi M, Hajjar L, Liu DW, Lobo S, Monnet X, Morelli A, Myatra SN, Perel A, Pinsky MR, Saugel B, Teboul JL, Vieillard-Baron A and Vincent JL. Alternatives to the Swan-Ganz catheter. Intensive Care Med 2018; 44: 730-741.

[19] Polastri M, Stella F, Lambertini M, Trani W, Ghetti A and Dell'Amore A. Physiotherapy immediately after thymectomy in patients with myasthenia gravis. Two cases and review of the literature. Ann Ital Chir 2017; 88: 105-109.

[20] Currie J, Bond RR, McCullagh P, Black P and Finlay DD. Eye tracking the visual attention of nurses interpreting simulated vital signs scenarios: mining metrics to discriminate between performance level. IEEE T Hum Mach Syst 2018; 48: 113-124.

[21] Yajima S, Yoshioka D, Fukushima S, Toda K, Miyagawa S, Yoshikawa Y, Hata H, Saito S, Domae K and Sawa Y. Multiple coronary stenting negatively affects myocardial recovery after coronary bypass grafting. Gen Thorac Cardiovasc Surg 2018; 66: 446-455.

[22] Bagheri A, Simbar M, Samimi M, Nahidi F and Majd HA. Exploring the concept of continuous midwifery-led care and its dimensions in the

prenatal, perinatal, and postnatal periods in Iran (Kashan). Midwifery 2017; 51: 44-52.
[23] Serruys PW, Cavalcante R, Collet C, Kappetein AP, Sabik JF 3rd, Banning AP, Taggart DP, Sabate M, Pomar J, Boonstra PW, Lembo NJ, Onuma Y, Simonton CA, Morice MC, McAndrew T, Dressler O and Stone GW. Outcomes after coronary stenting or bypass surgery for men and women with unprotected left main disease: the EXCEL trial. JACC Cardiovasc Interv 2018; 11: 1234-1243.
[24] Finch W and Lee MS. Percutaneous coronary intervention for coronary bifurcation lesions. Rev Cardiovasc Med 2017; 18: 59-66.
[25] Patel S, Svermova T, Burke-Gaffney A and Bogle RG. Drug-eluting balloons with provisional bail-out or adjunctive stenting in de novo coronary artery lesions-a systematic review and meta-analysis. Cardiovasc Diagn Ther 2018; 8: 121-136.