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Nurse-Patient Perception of Stressors in Patients Undergoing Coronary Artery Bypass Surgery at Shahid Madani Teaching Hospital in Tabriz in 2011

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Abstract

Objective: Cardiac surgery due to its-associated stressors has the potential physiological, psychological, emotional, and spiritual consequences. Assessment of stressors needs to nurses and patients understanding these factors that are different from each other. The aim of this study was to determine nurse-patient perception of stressful factors in patients undergoing coronary artery bypass surgery (CABG).

Materials and Methods: It was a descriptive comparative study on patients who underwent CABG and were hospitalized at cardiac surgery wards between the third and fifth days after operation and also on nursing caregivers of these patients working in these wards. The Revised Cardiac Surgery Stressor Scale (RCSSS) was used for assessing related stressors after determining its reliability and validity. The data analysis was performed by SPSS and with descriptive statistical methods (frequency, percent, mean ± standard deviation) and inferential statistical analysis was performed.

Results: According to overall mean RCSSS score, the perception of stressors in nurses was significantly higher than patients (2.38 ± 0.56 versus 1.65 ± 0.44) and the nurse-patient understanding was different for interpersonal, intrapersonal, and extra-personal stressors.

Conclusion: According to the results, nurses can generally assess their patients in terms of interpersonal, intrapersonal, and extra-personal stressors and train them according to the needs of patients. It can help them to personal assessment of the patients and facilitate their adaptation.

Keywords: Perception, Nurse, Patient, Stressor, Coronary bypass

Introduction

Coronary artery disease is a major cause of death and disability in developed countries that may be treated with coronary artery bypass surgery (CABG) that effectively relieves angina and increases life expectancy (1). The patients are considered this operation as a cause of life-threatening factor and have difficulty in compatibility or hospitals routines, feel stress and lack of control over their lives, and are more sensitive to pain and weakness (2). Stress leads to a feeling of loss of control over life and increased sensitivity to pain caused weakness in patients undergoing coronary artery bypass grafting. The feeling of loss of control in patients undergoing this surgery may prevent the proper self-care that makes difficult the nursing cares and the recovery process may be prolonged (3). The known concerns identified in coronary bypass surgery are referred to as stressors (4). It is believed that nursing offers a comprehensive nursing care based on an organized system and using nursing science. Nurses are health care providers that establish planning, management, and caring the patient with other health care team members based on their consistent presence and knowledge. Health is understandable from the patient's perspective. Thus, patient perceptions of health as well as stressor factors are essential indicators for providing significant nursing and performing caring programs (5). Assessment of stressors needs to nurses and patients understanding these factors that are different from each other. Nurses must be able to accurately assess the patients' stress level for performing required caring services and focus on effective nursing interventions. Nursing care with high quality is directly depends on nurse's ability to understand the weaknesses, strengths, problems, and characteristics of patients (6). Therefore, it can be effective in addressing the nurses emphasizing these points. Identifying the stressors in patients undergoing coronary artery bypass especially those stressors which associated with anxiety is very important for nurses, because it helps in prioritizing and implementing effective and appropriate actions. Consensus among patients who have undergone coronary artery bypass and nurses who take care of them can have positive results while working In order to achieve a common goal, com-

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patibility with hospitalization and fundamental change in lifestyle after discharge. Proportionality between nurse and patient perceptions of stress will help to achieve reconstruction (7). Imbalance and conflicts may delay the healing process of the patient and presence of more stress depends on the relationship between patient and nurse.

Our study was designed based on the Neuman systems model. Neuman systems model suggests that patients are open systems that have a constant interaction with their environment. To ensure that the specific needs of the patient is detected, this open system requires two-way communication at any time and complete evaluation of the patients include all psychological, social, cultural, emotional, developmental and religious variables (8). Interpersonal, intrapersonal, and extra-personal stressors can effectively affect these systems. Therefore, the main goal of nursing is patient assessments to gain stability by achieving and maintaining health in optimum level. Nurses establish communication between the patient, the environment and health and also system stability (9). Identification and differentiation of patient and nurse perceptions in patient care situations, needs to the Neuman model. This requirement is rooted in the understanding that the stability of the patient and the patient's health outcome is endangered by the perceived conflict between the nurse and the patient. This conflicting can be inhibited by the development of cooperation between them and also with caring on conceptual understanding. The results of such a complementary partnership is join planning of care based on clear target, because understanding can affect patient response and resistance to stressors. Resolve potential differences between nurse and patient perception is a basis of Neuman's model. When stressors are identified by nurses, the nurse is able to deal with stressors through control and manipulation of patient's environment. This study determined nurse-patient perception of stressful factors in patients undergoing CABG.

Materials and Methods

Study Population

It was a descriptive comparative study performed at the cardiology wards of the Shahid Madani teaching hospital in Tabriz between July and September 2011. By daily reviewing characteristics of patients who undergoing CABG, those with the study inclusion criteria were identified and enrolled. In this study, all patients who underwent CABG, aged 40 to 75 years, conscious to time and location, and hospitalized at cardiac surgery wards between the third and fifth days after operation were included into the study. Also, nursing caregivers of those patients having at least 6 years experiences of working with patients after heart surgery were also included. After a preliminary study on 10 patients and using descriptive statistics, the number of patients participating in this study was calculated as 68 subjects.

Study Measurements

The Cardiac Surgery Stressor Scale (CSSS) was created and developed by Carr and Powers (10). White (11) added six items to CSSS and created Revised Cardiac Surgery Stressor Scale (RCSSS) which includes 37 questions and was used in this study. The questionnaire consisted of two parts; the first part included personal and social information, and the second part included RCSSS items in to subsystems as interpersonal, intrapersonal and extrapersonal. Questions were based on 5-point Likert scale from 0 (lack of concern) to 1 (little concern), 2 (concern), 3 (high concern) and 4 (too much concern). The internal consistency was used to determine reliability. Ten nurses completed RCSSS and Cronbach alpha was calculated as 0.93. In the third until fifth day after surgery, nurses were asked to complete the questionnaire. The estimated time was 25 to 35 minutes. The researcher trained the nurses about the stressors. To be sure about the familiarity with the patient, the nurses had to be taking care of the patient at least for 12 hours.

Statistical analysis

The data analysis was performed by SPSS software (version 13; SPSS Inc., Chicago, IL., USA). The overall score of RCSSS was calculated by adding answers of each person to the all 37 questions. P value ≤ 0.05 was considered statistically significant.

Results

All the participating nurses were female and most of them were married, had bachelor degree, had experience of more than 36 months of working with CABG patients and had 3 to 5 years working experience in their ward. The average working hour for most of the nurses was 36 to 48 hours. Maximum numbers of hours spent in a month for reading professional journals, attending seminars and classes were 0 to 3 hours. Chi-square test showed that marital status and working experience in this ward and the hours spent in a month for reading professional journals, attending seminars and classes had a statistically significant relation with the stressors associated with CABG. Regarding demographic characteristics of the patients showed that the majority of patients were male, married, and illiterate. In terms of revenue, income and expenses were equal in most of them. In most patients, the survey was conducted on the fifth day after surgery, hospitalized within recent three months and had no history of surgery. Te results of the Spearman correlation test showed an association between the number of previous surgeries and present stressors related to CABG. The range of RCSSS score was from 0 to 4 in this study. The higher score showed the higher identification of stressors by nurses. The mean RCSSS in nurses was 2.38 ± 0.56 and in the patients was 1.65 ± 0.44 indicating greater understanding of stressors by nurses in comparison with patients and the nurse-patient understanding was different for interpersonal, intrapersonal, and extra-personal stressors (Table 1).

Discussion

Surgery is a dramatic event in the lives of many people.

Table 1. Nurse-Patient Perception of CABG Stressors

Stressors	Mean (SD)	Mean Score	Z Score	P Value
Intrapersonal stressors		27.43–35.48	3.427	0.001
Nurses	2.46 (0.55)			
Patients	2.10 (0.65)			
Interpersonal stressors		17.38–36.25	6.251	<0.001
Nurses	2.22 (0.66)			
Patients	1.20 (0.66)			
Extra-personal stressors		18.83–35.82	5.980	<0.001
Nurses	2.41 (0.59)			
Patients	1.60 (0.49)			
Total				<0.001
Nurses	2.38 (0.56)			
Patients	1.65 (0.44)			

This event can disrupt personal, occupational, and economical aspects of life as the patients physical function can be disrupted (12). In our study, the factor of "pain and discomfort" among intrapersonal stressors has been identified as the first stressor factor in patients (with the mean score of 2.86 ± 1.23) and also in nurses (with the mean score of 2.86 ± 0.86) indicating perception similarity between nurses and patients about this stressor (Table 2). So et al, also showed that the factor of "pain and discomfort" perceived by the patients with the score 1.36 ± 1.38 and by the nurses with the score of 3.33 ± 0.77 (13) showing discrepancy between the two groups and was inconsistent with our observation. Postoperatively, pain can be triggered by surgical trauma or nursing-related procedures that may be exacerbated through poorly managing pain and postoperative complications. Because the nurse perception from pain is an important factor in decision-making strategy for pain relief, similar perception of patients and nurses is very important.

In the present study, perception of the stress factors of "need to surgery" was more reported in nurses than patients (mean score: 3.13 ± 0.97 versus 2.61 ± 1.50) and thus these groups have no similar understanding about this stressor (Table 2). Similar study by White about patient-nurse perception of CABG-related stressor showed similar perception about "need to surgery" stress factor in patients and nurses (mean stress score of 3.37 and 3.40, respectively) (11) that was also inconsistent with our result. The observed discrepancy might be due to training and mental support from nurses. Nurses can reduce the patient's concerns with some educational programs on controlling CABG risk factors before surgery as well as with increasing nurse-patient confidence.

Regarding stress effect of "Fear of Death," understanding of nurses was significantly higher in nurses compared with patients (mean score of 3.08 ± 0.95 versus 2.51 ± 1.38) (Table 2). In the study by Yava et al, about nurse-patient perception in intensive care unit wards in 2011, perception of "Fear of Death" stressor was partially similar in nurses (mean score of 3.59 ± 0.75) than the patients (mean score of 3.21 ± 1.00) (14), while total reported perception was higher than that observed in our survey. But given that this study was conducted in the intensive care unit and operated patients were transferred directly to the operating room, higher obtained perception scores in their study are predictable. The perception of our nurses was slightly higher than the patients due to this fact that nurses might generalize experience of stress in ill patients to other ones. However, nurses should help their patients

Table 2. Intrapersonal Stressors Identified by Nurses and Patients

Intrapersonal Stressors	Mean (SD)	95% CI
The need of cardiac surgery		
Nurses	3.13 (0.97)	2.89–3.36
Patients	2.61 (1.50)	2.25–2.98
Fear of death due to illness or surgery		
Nurses	3.08 (0.95)	2.85–3.32
Patients	2.51 (1.38)	2.17–2.85
Pain and discomfort		
Nurses	2.86 (0.86)	2.65–3.07
Patients	2.86–1.23	2.56–3.16
Elapsed time before the surgery		
Nurses	2.67 (0.99)	2.43–2.91
Patients	2.39–1.45	2.04–2.74
Resumption of previous life style		
Nurses	2.61 (1.03)	2.36–2.86
Patients	1.89 (1.31)	1.57–2.21
The need of painkillers		
Nurses	2.51 (1.05)	2.25–2.77
Patients	2.35 (1.32)	2.03–2.67
Recovery process		
Nurses	2.29 (1.09)	2.02–2.55
Patients	1.35 (1.12)	1.07–1.62
Change in diet and eating habits		
Nurses	2.10 (0.96)	1.86–2.33
Patients	2.22 (1.36)	1.88–2.55
Resumption of sexual activity		
Nurses	1.97 (1.02)	1.72–2.21
Patients	1.38 (1.14)	1.10–1.65
Thirst		
Nurses	1.92 (1.02)	1.67–2.17
Patients	1.47 (1.48)	1.11–1.82
Increase in activity		
Nurses	1.91 (1.14)	1.63–2.18
Patients	2.10 (1.18)	1.81–2.39
Total		
Nurses	2.46 (0.55)	2.32–2.59
Patients	2.10 (0.65)	1.94–2.26

by encouraging patients to tell their anxiety. Assessment of patient perceptions such as fear and anxiety may help identifying the patients exposed to massive psychological stresses (15).

Also, with respect to interpersonal nurse-patient perception, there was an association between perception of patients and nurses. Patients had a total interpersonal perception score of 1.20 ± 0.66 indicating low level of stress among patients. Also, interpersonal perception score in nurses was scored 2.22 ± 0.66 indicating low stress level among them.

In our study, the stress indicator of "need to help" was perceived by patients with the mean score of 2.22 ± 1.18 and by nurses with the mean score of 2.45 ± 0.98 that was nearly similar between them (Table 3). In White study, this stressor was also similarly perceived by nurses (mean score of 3.00) and patients (mean score of 2.66) that seemed to be higher in the former group. Part of stressful factors that occur outside but near the border with client systems are classified as interpersonal (9) that can be influenced by supportive systems for nurses, physicians and patient families. Thus, nurses can help patients to facilitate the patient's recovery and help them to reduce stress with counseling skills.

In relation to nurse-patient perception to extra-personal stressors, the total perception score was 1.60 ± 0.49 among patients and 2.41 ± 0.59 among nurses that the stress level was classified as very low level in patients and moderate level in nurses. Therefore, nurse and patient perceptions of external stressors related to CABG surgery is different.

Table 3. Interpersonal Stressors Identified by Nurses and Patients

Interpersonal Stressors	Mean (SD)	95% CI
Need of assistance with various activities		
Nurses	2.45 (0.98)	2.21–2.69
Patients	2.22 (1.18)	1.93–2.50
Doctors and nurses discussing about other patients		
Nurses	2.45 (0.96)	2.22–2.69
Patients	0.94 (1.19)	0.65–1.23
To discuss concerns of surgery with doctor or nurse		
Nurses	2.41 (0.98)	2.22–2.69
Patients	1.29 (1.35)	0.96–1.62
Existence of one patient or more in one room		
Nurses	2.36 (0.99)	2.12–2.60
Patients	1.48 (1.11)	1.21–1.75
No response to the buzzer		
Nurses	2.17 (1.11)	1.90–2.44
Patients	0.55 (1.15)	0.28–0.83
The number of physicians involved in a patient care		
Nurses	2.25 (1.26)	1.94–2.55
Patients	0.72 (1.00)	0.47–0.96
Explaining hospital procedures		
Nurses	2.08 (0.90)	1.86–2.30
Patients	0.94 (0.84)	0.73–1.14
Different nurses taking care of a patient		
Nurses	1.92 (1.12)	1.65–2.19
Patients	1.33 (1.00)	1.09–1.58
Receiving medication		
Nurses	1.86 (1.06)	1.61–2.12
Patients	1.30 (1.21)	1.01–1.60
Total		
Nurses	2.22 (0.66)	2.06–2.38
Patients	1.20 (0.52)	1.07–1.32

Of extra-personal stressors, "having fragmented sleep" was perceived by patients with the mean score of 2.30 ± 1.41 and by nurses with the mean score of 2.70 ± 0.86 (Table 4). White reported that the perception of this stressor by nurses and patients was scored as 2.91 and 3.10, respectively that were nearly consistent with our results regarding similarity of extra-personal perception of patients and nurses.

In our observation, the factor of "being away from home and work" was perceived by patients with the score of 2.77 ± 1.30 and with nurses with the score of 2.69 ± 1.09 that seemed to be similar (Table 4). In White study, the mean score for perception of patients and nurses was measured as 2.86 and 2.70 (11), respectively that were also similar between them. In our study, most cases tended to spend their recovering period with their families before they return home. This concern can be resolved with proper planning to meet the patients with their families, especially in times of stress away. By applying Neuman model, identification of environmental and extra-personal stressors affecting client systems will be facilitated. In addition, by identifying these factors, nurses can help the patients to perform copying strategies.

In our survey, stressor factor of "injection" was similarly understood by patients and nurses with the mean scores of 1.67 ± 1.32 and 1.82 ± 0.99 (Table 4), respectively. In Yava et al study, this stressful factor was more perceived by nurses compared with patients with the mean scores of 2.66 ± 1.20 and 1.35 ± 1.22 (14), respectively that was inconsistent with our study.

In our study, the mean of perception score from all CABG-related stressors in patients was 2.41 ± 0.59 and in nurses was 1.60 ± 0.49 that was totally classified as low level and very low level of stresses, respectively. On the other hand, the perception of nurses was totally higher than that observed in patients. In a study by White, the total score of perception was classified as low level (11) in both study groups. According to their findings in 1998 and due to the passage of time and improvement of healthcare systems, the reduction of stressors in patients is expectable, however according to the observed discrepancy in perception of nurses and patients, nurses should be encouraged to review and understand the correct nature of stressors. Ranking nurses and patients perception from stressors in previous studies (7,10,16,17) showed that nurses had higher rank compared with patients that was similar to our finding, because the Wilcoxon rank test in our survey indicated significant associations between intrapersonal, interpersonal, and extra-personal stressors between patients and nurses.

In conclusion, the main emphasis of this study was to determine patients' perceptions of stressors in recovery after CABG and determine nurse perceptions of stressors in their patients. We showed that patients and

Table 4. Extra-personal Stressors Identified by Nurses and Patients

Extra-personal Stressors	Mean (SD)	95% CI
Having chest tube		
Nurses	2.91 (0.89)	2.69 – 3.12
Patients	2.61(1.41)	2.27 – 2.96
Hospital, medication and treatments costs		
Nurses	2.89 (1.13)	2.62 – 3.17
Patients	1.54 (1.45)	1.19 – 1.89
Loss of income due to illness		
Nurses	2.86 (1.14)	2.59 – 3.14
Patients	1.23 (1.63)	0.84 – 1.63
Having tubes in mouth or nose		
Nurses	2.82 (1.15)	2.54 – 3.10
Patients	1.76 (1.58)	1.38 – 2.14
Injection		
Nurses	1.82 (0.99)	1.58 – 2.06
Patients	1.67 (1.32)	1.35 – 1.99
Fragmented sleep		
Nurses	2.70 (0.86)	2.49 – 2.91
Patients	2.30 (1.41)	1.96 – 2.65
Being away from home or work		
Nurses	2.69 (1.09)	2.42 – 2.90
Patients	2.77 (1.30)	2.46 – 3.09
Having visitors in specific times		
Nurses	1.61 (1.12)	1.34 – 1.88
Patients	2.00 (1.41)	1.65 – 2.34
Other patients problems		
Nurses	2.60 (1.02)	2.35 – 2.85
Patients	1.72 (1.24)	1.40 – 2.02
Having monitoring equipment		
Nurses	2.51 (1.01)	2.26 – 2.76
Patients	1.07 (1.24)	0.77 – 1.37
Being limited		
Nurses	2.38 (1.12)	2.11 – 2.65
Patients	1.51 (1.35)	1.18 – 1.84
Cardiac monitors and other temporary facilities		
Nurses	2.32 (1.04)	2.07 – 2.57
Patients	0.66 (0.82)	0.46 – 0.86
Following hospital's program instead of one's self program		
Nurses	2.26 (0.94)	2.03 – 2.49
Patients	1.08 (1.01)	0.84 – 1.33
Lack of easy access to the buzzer, phone or drinks		
Nurses	2.22 (1.04)	1.96 – 2.47
Patients	1.16 (1.16)	0.87 – 1.44
Sleeping in uncomfortable beds rather than your own bed		
Nurses	2.17 (1.11)	1.90 – 2.44
Patients	1.85 (1.18)	1.56 – 2.14
Being transferred from the ICU		
Nurses	2.14 (1.09)	1.88 – 2.41
Patients	1.26 (1.31)	0.94 – 1.58
Having urinary catheter		
Nurses	2.05 (1.26)	1.75 – 2.36
Patients	1.07 (1.24)	0.77 – 1.37
Total		
Nurses	2.41 (0.59)	2.26 – 2.55
Patients	1.60 (0.49)	1.48 – 1.72

nurses perceptions regarding intrapersonal, interpersonal, and extra-personal stressors were different and higher in the latter group. Based on the Newman model, almost all intrapersonal stressors were perceived by patients and according to this fact that the patients' perception can affect their response to situations and events, nurses should assess their patients minutely and obtain comprehensive information about their patients' states to help them to recover or eliminate stressors. However, the interpersonal and extra-personal stressors should not be ignored, because these stressors are associated with the patients' environment and can be different due to individual differences between the patients. This environment can be included values, beliefs and fears that should be identified with nursing science and on the basis of counseling skills of nurses. This process can facilitate patients' compliance with these factors. Also, establishing open communication between nurse and patients is necessary and nurses should not assume that the patient can perceive stress states only with a particular method. In fact, patients' perception of stress can be achieved by asking questions and communicating with other patients and nurses.

However, the present study had some potential limitations. First, the study was designed as a single-center study and thus its results cannot be generalized to other center in the community. Other limitations was the effects of physical fatigue and mental condition of the patients and also night shift nurses on how to answer to the questions that can be reduced by postponed interviewing to the next session. Also, there was an increased possibility of bias because of interaction between a nurse and two patients, leading to probable Impact of former patient's stressors on nurse.

Finally, in order to reduce the nurses-related bias, each participating nurse fills out just a patient questionnaire. Also, it is recommended that the number of day and night shifts of nurses is selected equal to better understanding and comparing patients-nurse perceptions of stressors in day and night shifts, separately. Moreover, it can be concluded to design and perform further studies with considering larger sample size to allow comparing and achieving generalized results.

Ethical Issues

This study was approved by the Research Council of Nursing and Midwifery and ethical approval was obtained. The researcher explained the reason of the study to the nurses and written informed content was obtained from each of them.

Conflict of Interests

None.

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