Nurse's Perception of Stressors Associated with Coronary Artery Bypass Surgery

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ARTICLE INFO

ABSTRACT

Introduction: Cardiac surgery has many physiological, psychological, emotional, growth and spiritual potential consequences due to stress. Identifying and understanding the nature of stress can help nurses in controlling and reducing it. However, few studies have been conducted to identify the stressors. Therefore, the objective of this study was to determine nurses' perceptions of patients' stressors associated with coronary artery bypass surgery. *Methods:* During a two month investigation, qualified nurses (n = 68) of patients undergoing coronary artery bypass were selected on the third to fifth day after surgery. With the use of Revised Cardiac Surgery Stressors Scale (RCSSS), interpersonal, intrapersonal and extrapersonal stressors were determined. *Results:* The findings showed that the most interpersonal, intrapersonal and extrapersonal stressors were; "the need to have cardiac surgery", "death due to illness or surgery", "needing assistance with various activities", "doctors and nurses discussing about other patients", "having chest tube" and "Payment of hospital and medical bills". *Conclusion:* Identification of stressors in patients with coronary artery bypass graft helps nurses in taking better care of them. It would make a better ground for the officials and practitioners towards managing the stressors, especially interpersonal and extrapersonal stressors. Thereby patients are helped to cope with stressors.

Introduction

One of the most important surgeries frequently performed these days is cardiac surgery.[1] Coronary artery bypass graft (CABG) has an important impact on mental and emotional aspects of patient and their families.[2] Sixty percent of open heart surgeries in Iran are CABG.[3] The concerns about CABG are known as stressors.[4,5] This surgery is a physical and mental stressor. Patients know it as a life threatening event along with problems of compliance with hospital routines, feeling of discomfort, lack of control, being separated from family, friends and everyday life.[6] The concerns related to patients undergoing CABG include: chances of a successful surgery, the waiting period before the surgery, fear of death, previous negative experiences of hospitals, fear of recovery, fear of incisional pain, concerns over loosing appetite, exhaustion, sleep disorder, resumption of normal life, activities after surgery, cardiac monitoring, drug addiction, duration of stay in hospital and its costs.[7]

It is believed that nursing is a profession that offers integrated care according to an organized system using nursing knowledge. Based on consistent presence and their

knowledge, nurses perform planning, management, evaluation and taking care of patients along with other health care team members.[8] Evaluating stressors requires nurses and patients perception of stressors, which are different from each other. Nurses must be able to accurately assess patients stress in order to provide the care needed and have a concentrated effect on nursing interventions. The quality of individual patient's care depends on the nurse's accurate understanding of patients' weaknesses, strengths, problems and features.[9] Nurses can identify patient's stressors and help them in adapting with them. This ability assists the nurses in reducing stress, adjusting their perception and in assessing specific stressors.[9] According to Dalir et al. study,[10] based on holistic care, there was a significant difference between patients' understanding and nurses perception of mental, socio-cultural and environmental stressors. This difference might be due to the nurses' professional knowledge and the information about significance and severity of the disease. Nursing interventions, especially in patients with CABG, must also identify the gaps between providing health care and disease outcomes.

This study was based on Neuman systems model. This system states that patients are an open system, and are in constant interaction with the environment. In order to insure that the specific needs of a patient is identified, this open system requires a two-way communication that complete evaluation of the patient considering all the psychological, social, cultural, emotional, developmental and religious factors.[11] The internal and external factors that have reciprocal impact on patient system are a part of the environment. The intrapersonal environment is an internal environment which includes the effects of the inside of the system. The external environment consists of the interpersonal and extrapersonal factors.[12] The inter, intra and extrapersonal stressors could affect the potential or real responses of the system, thus the main nursing objective is to evaluate patients in terms of achieving stability through acquisition and maintaining health. The nurse provides relation among patient, environment and health, resulting in a stable system.[12] Identifying and differentiating the perception of the patient and the nurse on the patient care requires Neuman's model. This requirement is because of the patient stability and his/her health outcome that will be jeopardized by the perceived conflict between nurse and patient. With the progress of cooperation between nurse and patient and with care based on their complementary understanding, the perception differences between nurse and patient can be avoided. The result of such a complementary participation is a joint care planning based on a clear objective. Since perception could affect the patient's response and tolerance towards the stressors, resolving the potential perception differences between nurse and patient in Neuman's model is crucial.[12]

Improvement in health care technologies and changes in health care raises new questions and creates new stressors especially in intensive care units (ICU). These changes have led researches to identify the new stressors that affect patients and health professionals. When these stressors are identified by the nurse, they can provide care by adjusting and controlling the environment. Therefore, this study was conducted to identify nurses' perception of stressors during recovery after CABG.

Materials and methods

This is a descriptive study performed from July to August 2011, in cardiac surgery units of Shahid Madani Health Care Center in Tabriz, Iran. The patients who underwent CABG surgery for the first time with the age range of 40-75 years were considered eligible if they were alert and aware of time, place, person and situation, in third to fifth day of recovery and hospitalized in surgical wards. The nurses taking care of these patients were also selected. Inclusion criteria for nurses

included the following: caregivers or nurses who were graduated, having at least six months working experience with patients after cardiac surgery and being a fixed employee of the surgery ward. A preliminary study on 10 patients was carried out. Finally, 68 patients participated in the study.

The Cardiac Surgery Stressor Scale (CSSS) was created and developed by Carr and Powers.[13] White[14] 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. 10 nurses completed RCSSS and Cronbach's 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.

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. 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.

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 and standard deviation of RCSSS was 2.38 ± 0.56, indicated that the overall identification of stressors in patients associated with CABG was "little concern". According to the obtained mean, the understanding of inter-, intra- and extra-personal stressors was "low". The most identified stressors by the nurses were; "the need of cardiac surgery", "death due to illness or surgery" that were intrapersonal stressor; and "having chest tube" and "payment of hospital and medical bills" were extrapersonal stressor. The least perceived stressors were "having visitors at specific times" and "injections" that were extrapersonal; "receiving medication" that was interpersonal and "increased activity" that was intrapersonal stressor (Tables 1, 2 and 3).

Discussion

Surgery is a major stressor for patients. Identifying stressors is important for healthcare and nursing community and they have to protect the patients from unnecessary stressors in order to improve their compliance with treatment. Thus the patient can have the maximum response towards the upcoming stressors.[15,16] Nurses can assist patients to cope with stress through individual assessment, training based on individual needs and counseling. Cultural beliefs in different forms

can be predisposing or underlying factor for stressors. Understanding these beliefs is essential for providing effective education for patients. It appears that intervention is more effective when it is appropriate to the individual's style.[17]

Table 1. Mean and standard deviation of intrapersonal stressors identified by nurses in patients with coronary artery bypass graft

Intrapersonal stressors	Mean (SD)	95% confidence interval
The need of cardiac surgery	3.13 (0.97)	2.89 – 3.36
Fear of death due to illness or surgery	3.08 (0.95)	2.85 – 3.32
Pain and discomfort	2.86 (0.86)	2.65 – 3.07
Elapsed time before the surgery	2.67 (0.99)	2.43 – 2.91
Resumption of previous life style	2.61 (1.03)	2.36 – 2.86
The need of painkillers	2.51 (1.05)	2.25 – 2.77
Recovery process	2.29 (1.09)	2.02 – 2.55
Change in diet and eating habits	2.10 (0.96)	1.86 – 2.33
Resumption of sexual activity	1.97 (1.02)	1.72 – 2.21
Thirst	1.92 (1.02)	1.67 – 2.17
Increase in activity	1.91 (1.14)	1.63 – 2.18
Total	2.46 (0.55)	2.32 – 2.59

Table 2. Mean and standard deviation of interpersonal stressors identified by nurses in patients with coronary artery bypass graft

Interpersonal stressors	Mean (SD)	95% confidence interval
Need of assistance with various activities	2.45 (0.98)	2.21 – 2.69
Doctors and nurses discussing about other patients	2.45 (0.96)	2.22 – 2.69
To discuss concerns of surgery with doctor or nurse	2.41 (0.98)	2.22 – 2.69
Existence of one patient or more in one room	2.36 (0.99)	2.12 – 2.60
No response to the buzzer	2.17 (1.11)	1.90 – 2.44
The number of physicians involved in a patient care	2.25 (1.26)	1.94 – 2.55
Explaining hospital procedures	2.08 (0.90)	1.86 – 2.30
Different nurses taking care of a patient	1.92 (1.12)	1.65 – 2.19
Receiving medication	1.86 (1.06)	1.61 – 2.12
Total	2.22 (0.66)	2.06 – 2.38

Table 3. Mean and standard deviation of extrapersonal stressors identified by nurses in patients with coronary artery bypass graft

Extrapersonal stressors	Mean (SD)	95% confidence interval
Having chest tube	2.91 (0.89)	2.69 – 3.12
Hospital, medication and treatments costs	2.89 (1.13)	2.62 – 3.17
Loss of income due to illness	2.86 (1.14)	2.59 – 3.14
Having tubes in mouth or nose	2.82 (1.15)	2.54 – 3.10
Injection	1.82 (0.99)	1.58 – 2.06
Fragmented sleep	2.70 (0.86)	2.49 – 2.91
Being away from home or work	2.69 (1.09)	2.42 – 2.9
Having visitors in specific times	1.61 (1.12)	1.34 – 1.88
Other patients problems	2.60 (1.02)	2.35 – 2.85
Having monitoring equipment	2.51 (1.01)	2.26 – 2.76
Being limited	2.38 (1.12)	2.11 – 2.65
Cardiac monitors and other temporary facilities	2.32 (1.04)	2.07 – 2.57
Following hospital's program instead of one's self program	2.26 (0.94)	2.03 – 2.49
Lack of easy access to the buzzer, phone or drinks	2.22 (1.04)	1.96 – 2.47
Sleeping in uncomfortable beds rather than your own bed	2.17 (1.11)	1.90 – 2.44
Being transferred from the ICU	2.14 (1.09)	1.88 – 2.41
Having urinary catheter	2.05 (1.26)	1.75 – 2.36
Total	2.41 (0.59)	2.26 – 2.55

From the intrapersonal stressors of this study, "the need of surgery" and "death due to illness or surgery" was more identified by nurses. "The need of surgery" with mean of 3.13 was the first factor among the intrapersonal stressors and also among all the other stressors of CABG. In White study, [14] this stressor with mean of 3.40 was also identified as the first stressor. Nurses can reduce the patients' concerns by providing education about CABG, risk factors of cardiovascular diseases, preoperative educations and establish a relationship based on trust. "Death due to illness or surgery" with mean of 3.08 was the second stressor among intrapersonal stressors. In Yava et al.[18] study this factor had mean of 3.59 showing that nurses perceived this factor more than this study. The reason of this difference is due to the fact that our study was conducted in ICUs that patients were immediately transformed to this unit after their surgery. It is obvious that patients reported the "fear of death" more than our study.

Nurses should encourage patients to talk about their anxiety. Evaluating patients' perception such as their fear and anxiety may help identify patients at risk of extensive psychological stress.[19] This can also help nurses in encouraging patients to express their feeling of anxiety and to deal with this fear as a source of stress.[18] In this study, the intrapersonal stressors that were detected by nurses with their corresponding coping strategies were determined. The difference in nurses and patients perceptions can endanger the patients' health, [12] so the nurse's proper assessment of the patient can be helpful in solving this problem.

"Needing assistance during activities" had the mean score of 2.45 and was the first stressor among the interpersonal stressors and 14th among all stressors. In White study,[14] this stressor was identified by nurses with the mean score of 3. The difference with this study is because nurses helped and supported patients on time. External environment also creates interpersonal stressors[12] that can be affected by nurses support systems, physicians and patients' family. By counseling skills nurses can facilitate patient's recovery and help reduce stress.

"Having chest tube" and "hospital, medication and treatment costs" were more identified by nurses. "Having chest tube" with mean score of 2.91 was the first stressor among extrapersonal stressors and third in all stressors. However, in White study[14] this stressor was not among the ten perceived stressors. In So and Chan[20] study, based on Intensive Care Unit Equipment Stressor Scale (ICUESS), the tubes were reported to be annoying and were the main reason for nurses' stress. Since nurse's perception of patient's pain is an important factor in decision making strategy for pain relief, therefore, in this study nurse's attention to patients' pain was very important.

"Hospital, medication and treatment costs" with mean score of 2.89 was the second stressor among extrapersonal stressors and forth factor among all the other stressors. In promoting health and empowering patients to cope with stress, not only there should be a focus on individuals but the social conditions should also be considered to be able to help them through emotional support and necessary trainings. Higher income is associated with higher levels of happiness, confidence and living in desirable social conditions and it brings maximum social support and minimum stress.[21] The use of Neuman's model helps to identify environmental and extrapersonal stressors. By identifying these factors nurses can assist patients in coping strategies. Furthermore, taking medication and injections are the stressors less perceived by nurses. In other studies such as Yava etal. [18] So and Chan[20] and Hweidi, [22] these factors were reported as being less stressful for patients.

Conclusion

The main emphasis of this study was to determine nurses' perception of patients' stressors in recovery after CABG. The study

showed that according to Neuman's model, the intrapersonal stressors were more identified by nurses. Considering that individuals' understanding of these factors can affect their response to situations and events, there is a need to make an individual assessment of each patient and obtain comprehensive information about them by nurses, to help patients in recovery to eliminate their stress and perform appropriate nursing actions. However, interpersonal and extrapersonal stressors should not be ignored. These factors are related to external environment, and according to Nueman opinion, each person is unique and their response and reaction to these factors are different. This environment can include values, beliefs and fears. Nurses with counseling skills can identify these factors and help patients in realizing or removing them. Relationship between nurses and patients should be an open. To know the patient's perception of stress, it is needed to only ask them about stressors.

Suggestions

It is suggested that by reviewing and correct understanding of stressors and according to each individual needs and preferences, nurses should plan training and care programs to eliminate or adjust stressors. These interventions lead to prevent from complications and improve physiological functions, and result in physical, mental, emotional comfort and ensure patient's satisfaction. Planning and implementing nursing care helps patients in achieving maximum performance, health and wellness. It is important that the patient is considered as an individual and in reviewing his/her needs all the existing aspects such as physical, mental, social, cultural, intellectual and environmental factors are considered.

Limitations

The small sample size was one of the limitations of this study. Sampling was also limited to cardiac surgery section. It is suggested that further studies be conducted on a larger scale and other surgical conditions.

Ethical issues

None to be declared.

Conflict of interest

The authors declare no conflict of interest in this study.

Acknowledgments

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