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Lived experiences of stress in patients with coronary artery bypass grafting: A Qualitative Study



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ABSTRACT

Introduction: Hospitalization for surgery is associated with stress and anxiety for most patients. Candidates for Coronary Artery Bypass Grafting (CABG) experience a lot of stress and tension. This study aimed to identify and explore the determinants of stress in CABG patients.

Methods: This qualitative study builds on content analysis. The sample consisted of 21 CABG patients. Data was collected via unstructured interviews, and the sample was selected based on purpose and with maximum variation. The process of data analysis proposed by Graneheim and Lundman was followed. Credibility and dependability

of the study were assured according to Guba and Lincoln's evaluative criteria.

Results: The results were categorized into three main themes and five categories in terms of nature. The three-emerging themes include "presentation", "situational determinants", and "uncertainty".

Conclusion: Mental stress affects the length of stay in the hospital, postoperative pain, and quality of life. It is necessary to identify the most important stressors perceived by CABG patients, to control stress, and hence to comfort patients mentally by healthcare providers.

Keywords: perceived stress, CABG patients, qualitative study

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INTRODUCTION

According to the World Health Organization, cardiovascular disease is the leading cause of death in the world and accounts for 82% of mortality in developing countries.¹ This disease is also the leading cause of death in Iran where some 138 thousand cases of death are reported annually from coronary artery diseases.² Although a substantial part of treatment for cardiovascular disease resides with medication and diets, coronary artery bypass grafting (CABG) stands as the only way to treat and prolong the life of patients in many cases.³ Each year, about 8 million open heart surgeries are performed across the world⁴ and 35 to 50 thousand in Iran.⁵ Despite the positive effects of the operation on the performance of the patients, the treatment is associated with experiences of stress. The patients undergo stress from the time the necessity of surgery is notified until discharged and return to normal daily life.^{6,7} Studies show that while open heart surgery has demonstrated technical success, the patients who have CABG tend to suffer from significant postoperative adverse events during and after surgery, such as pain, cardiologic shock, delirium, dysrhythmia, severe stress, gastrointestinal bleeding, and changes in vital signs.⁶

Mental stress and vital sign changes may lead to amplified postoperative pain, increased indirect use of analgesics, decreased resistance to infection, prolonged postoperative wound healing,⁸ and

increased the length of hospital stay.⁸ Gallagher et al. (2007) noted that several factors might add to the mental stress experienced by patients admitted to intensive care units, among which are sleep disorders, pain, and staying away from home.⁹

Mitchell (2013) proposes the risks of surgery, recovery or lack of complete recovery of the patient, long waiting time, and financial problems as contributors to increased anxiety and stress in patients.¹⁰ Qadiri et al. (2016) suggest that the experience of CABG results in pressure and impaired performance in all aspects of the patient's life, enumerating access to information about operating conditions, treatment process, and postoperative care among the main concerns of patients.¹¹ To have a child at home, weaning, fear of not waking, reduced revenue, and waiting time for operation are considered by Sony and Thomas as contributors to increased stress among patients.¹² In addition, Healy (2013) believes that lack of control over incidents, fear of the unknown, and lack of familiarity with the surroundings may create a sense of anxiety and stress.¹³ Other scholars have found that stressors consist primarily of waiting time for surgery, being away from home, and discomfort or pain.¹⁴ In this line, Berg et al. (2013) state that stress and anxiety can be reduced on the part of the patients if they can attain the related information and understand the perioperative course of events.¹⁵

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Bruce et al. (2013) assert that as yet, relatively little research has examined the role of stress as an effective factor in the CABG process. This is in fact, surprising since the very prospect of undergoing CABG can be stressful.¹⁶ Thus, evidence suggests the need to identify the determinants of stress among CABG patients.

Furthermore, the perceived stress by CABG patients is less covered in the Iranian scientific sphere although a lot of research is conducted on CABG patients in Iran. Since each patient could have a different experience in this regard, identification of stressful factors can be better achieved via the lived experience of individuals who have directly undergone the phenomenon in mind. This can be performed with a qualitative approach. Therefore, we tried to build on the qualitative approach to identify and more profoundly understand the encountered stress of CABG patients in the Iranian sociocultural context.

METHODS

This study is a qualitative content analysis that explored the perceived stress in CABG patients in Vali-Asr Hospital of Birjand city in eastern Iran during 2016. The main research focus was on major determinants and sources of stress in CABG patients.

Design, Participants, and procedure

Purposive sampling was used to recruit participants. The participants comprised of 21 patients (13 males and 8 females) in the age range of 40-75 years. The inclusion criteria consisted of patients who desired to participate and to share their experiences, and the ability to attend interviews. Responses made by a first participant were the base to select the next participant such that the new participant

could supposedly fulfill the informational gap for the question(s) in mind. This process continued until the data was saturated. Meanwhile, in order to observe maximum variation in sampling, a wide range of patients with different characteristics in terms of age, gender, and socioeconomic status were incorporated.

The data was collected through unstructured interviews until data saturation occurred, i.e., until the collected data were a replication of previous ones. The length of the interviews ranged from 40 to 55 minutes. All interviews were guided by one researcher. Interviews initiated with general questions on the patients' experiences with heart disease and related treatments and were continued on the basis of the responses so that further information on the experiences and perceived stress in the CABG period could be collected.

Data analysis

The data were analyzed based on the steps proposed by Graneheim and Lundman. Credibility and dependability of the study were assured according to Guba and Lincoln's evaluative criteria.¹⁸ To increase credibility, the researcher had a long engagement and sufficient interaction with the participants and tried to collect valid information verified by the participants. Repeated step by step collection and analysis of the data and review by the supervisor, adviser, and experts were measures taken to improve the dependability of the data. To improve confirmability of the data, confirmation and complimentary comments were received by faculty members. Transferability was assured via attempts to provide a rich description of the research reports so that the implications of the study could be evaluated and applied in other fields.

Ethics

Permission was obtained from the Research and Ethics Committee of Yazd University of Medical Sciences (Ethical Code No.: IR.ssu.medicine.rec.1395-124) and referrals were presented to local hospital officials to initiate the research. The objectives of the study were explained to the participants, and they were invited to participate. Informed consent, confidentiality, and privacy of participants, the right to withdraw from the study at any time and the right to demand the transcripts of the interview were also taken into consideration.

RESULTS

Participants in this study were 21 patients undergoing coronary artery surgery. [Table 1](#) displays the characteristics of study participants.

Table 1 Characteristics of participants

Variable	Man	Woman
Number	13	8
Age range (year)	40-75	54-70
Marital status	Married	Married
Education		
Illiterate	2	5
Primary	2	3
Secondary	1	0
High school	6	0
Tertiary	2	0
Occupation		
Retiree	7	0
Employee	2	0
Self-employed/Housewife	5	8

Table 2 Emerging themes and categories according to the stress perceived by CABG patients

Themes	Categories	Codes
Presentation	Physical	Insomnia, difficulty sleeping, frequent urination, change in appetite, dry mouth, tremor
	Mental	Loss of concentration, impatience
Situational determinants	Environment	Observation of other patients and medical equipment around them Environmental conditions in the hospital and operating room
	Process-oriented	Unawareness of operation process The need to get proper guidance from the medical team
Uncertainty	Consequence-oriented	Concerns with sudden death during or after surgery Doubts and fears with the operation and worry about its outcome Concerns with ability to perform activities after surgery

Three main themes and five categories emerged. The three-emerging themes included “presentation”, “situational determinants”, and “uncertainty”. Table 2 demonstrates the themes and categories emerged in the study.

Participants described their experiences of waiting for operation as very difficult such that they repeatedly recollected the bad memories they had at the time waiting for surgery.

Presentations

Patients waiting for coronary artery surgery undergo a lot of stress due to the nature of this surgical intervention. The stress can have several physical and mental presentations, such as sleep difficulty, loss of appetite, difficulty in concentration, dizziness, dry mouth, etc. After being notified of the need for CABG, a participant described his experience as: “God knows I was filled with panic; I was trembling. I was worried if I would survive the operation or not. I couldn’t understand anything, could not talk with my children, could not look at them [...]”. Another participant, a 64-year-old woman, expressed her experience as: “I cannot sleep at night for the fear and panic I have. I cannot go any further than this toilet. I am all worried. If they bring the pee bottle, I cannot use it.”

A 60-year-old man described his experience of waiting for surgery this way: “Like an image on a monitor spinning around, the world spins around my head. I cannot sleep at all. [...] I have not eaten a thing since last night; my mouth is very dry (clears throat).”

SITUATIONAL DETERMINANTS

Environment

According to the participants, to observe other patients and medical equipment around them was stressful during the time waiting for surgery. Participant no. 14 described the stressful environmental conditions as: “When I see the big cut on the patients (i.e., the chests cut open) and their crying, I feel scared of the surgery. It is a burdensome operation; I’m much too worried. When I see the patients around me as such, I become stressed.”

Participant no. 15 stated: “The very two or three days I have been here have affected me. When I see so many tubes, serums, etc. connected to patients after surgery, impeding their movement, the pee bottle and other stuff around... I do not like this kind of situation; I do not like anyone to come here, be troubled here, the pee in a bottle, [...]”

In addition to the stress caused by the disease, environmental conditions also played a role in increasing stress. Participant no. 6 recalled: “I have never been or seen an operating room. I have visited a physician at most for a cold. [Silence for a few seconds]. I feel stressed to be in the operating room.” Participant no. 7 stated: “Seeing the atmosphere, the operating room personnel, and thinking that all have prepared for you, and that you are alone in fact, that they are peculiar, make me much worried. I’m afraid of the operation, and rather I’d better say, the operating room atmosphere. I do not know how to control myself. Just thinking about it is making my heart beat more quickly. What should I just do? Is there a drug to relax us before surgery?” Participant No. 14 says: “I wonder if it’s possible to get unconscious before entering the operating room. I would be less stressed this way. To lie down on the bed is much too difficult for me; perhaps I get fainted before the anesthetic substance is used on me.” Participant No. 19 recited his experience of the operating room as follows: “What I think is that the operating room is familiar and ordinary to them all; no one cares how much it is unfamiliar, strange and unusual to you ... Everyone is busy with his/her work requirements, and you try to analyze things yourself.”

UNCERTAINTY

Process-oriented

Unawareness of the treatment process and the surgery can bring about several concerns and preoccupations with the surgery, its length, and postoperative recovery. A 66-year-old male participant maintained: “I could not make heads or tails what kind of operation is my operation. I do not really know how long after surgery I would be

conscious. I do not know what they are going to do on my heart." A 60-year-old male participant commented: "I do not understand what kind of surgery this is. You doctor, you tell me. No one has guided me clearly. I do not know; I have never experienced a surgery. I am worried. I think this is a thing that has filled me with fear."

In some cases, anxiety arises because the patient does not know what will happen during the procedure. Failure to inform patients about the operation length, the way the operation is performed, etc. creates a lot of stress and worry for the patient. This concern would diminish to a certain extent when the patients are well informed on these matters. The surgeon should provide a realistic view of the process and potential outcome of the surgery for the patient. The participants expressed their concerns as follows: "How many days are we going to stay in the operating room? How many hours after the surgery will we be conscious? How long should we stay in the ICU? What kind of place is the ICU?" Participant No. 18 stated: "You cannot go without stress until you undergo it (the surgery) and it is finished. I seem to have lost myself. Everything comes to the mind of someone who knows nothing. He thinks of the worst things possible, but I wish I knew."

Consequence-oriented

Worry about the failure of the operation, stress with the thought of sudden death during or after surgery, concerns with rehabilitation and return to normal daily life, and the possibility of managing to perform working activities were stressful to the patients. Concerning their experiences with the operation outcome, the participants said: "I wouldn't have a word now if I would hopefully be good and do not die during anesthesia; what else can I do but to hope. What can be done?" A participant stated: "Five years ago I was told to have the surgery. Actually, I was scared of it. I didn't know what would be the end, the outcome, that I may die God forbid. I didn't perform the surgery, but now I have to." Another participant stated: "More than anything, my concern and fear lie with the future and the time after surgery. What am I going to do after I leave here?"

DISCUSSION

Based on the findings, CABG patients undergo a lot of stress and tension that can be categorized under presentation, situational determinants, and uncertainty. Stress and tension have been similarly reported in other studies. Miller writes that prior awareness of the fact that one is to undergo

anesthesia can cause psychological stress which is characterized by anxiety.¹⁹ The results of Ghardashi's study (2007) demonstrated the presence of stress the night before surgery in the candidates.²⁰ Sadeghi et al. consider the patient's concerns with surgery and financial problems as the major preoccupations of patients' families in a surgery.²¹

According to our study, the patients experienced several psychosomatic responses and physiological and psychological symptoms because of stress from surgery such as insomnia, dizziness, tremor, etc. In line with our study, Neyse et al. (2011) showed that anxiety, stress, and fear of death from myocardial infarction could lead to poor sleep or insomnia in the patients.⁷ The results from Ghardashi's study also reveal insomnia and lack of sufficient sleep the night before surgery in patients waiting for surgery.²⁰ Santos et al. (2008) highlight the symptoms and presentations of stress and anxiety, and associate the stress with worry about the results of the surgery, especially the possibility of failure, the need for further transplantation, and postoperative complications.²² Caruana et al. (2008) report symptoms and psychological presentations of stress in patients with a history of transplantation and link them with the history of transplantation success or viral rejection after operation.²³ Hashemi et al. (2012) consider operation as a stressful experience for patients, suggesting that as patients have little control physiologically and psychologically on the circumstances or surgery outcomes, they would experience increased heartbeat, hypertension, physiological responses, and neuroendocrine secretion, that can lead to dramatic consequences during surgery and in the postoperative recovery phase.²⁴

Environmental conditions of the hospital and the operating room and observation of other patients and medical equipment around them were environmental determinants of stress. Lack of familiarity with the ICU and the sophisticated equipment's, according to Gaieni et al. (2016), are the most common causes of stress in patients hospitalized in the ICU.²⁵ Healy (2013) describes the experience of going to the hospital for surgery as daunting, stating that the majority of parents of children admitted for surgery required greater advice about waiting time, the equipment used, pain relief, and the routines in the recovery room.¹³

Our results showed that unawareness of the operation process and lack of proper guidance were among contributors of increased uncertainty among the participants. The patients were uninformed with or felt doubtful about some issues including the course of the disease, duration of surgery, and in some cases, the behavior and performance of the staff. The patient has several preoccupations

concerning the surgery, anesthesia, duration of operation, and length of stay in the ICU. Other studies also attribute the most common causes of stress and anxiety before surgery in patients to fear of the unknown, lack of proper understanding of the disease and surgery, and being in an unfamiliar and unpleasant situation.^{24,26} Kohan et al. (2004) stated that non-provision of information to the patients attributed to the highest percentage of patients dissatisfaction.²⁷

Sjöstedt et al.'s study (2011) suggests that patients needed information about the surgery, procedure, medication, and duration of operation prior to the operation, to reduce the psychological pressure and make them feel more comfortable.²⁸ According to Asghari et al., designing and implementing an appointment scheduled by the nurse and physician for surgery candidates to get familiar with a peer in the ward and attain the required information before surgery can help to reduce the stress.²⁹ In line with that, Sadeghi et al. postulate the need to get information about the disease, the course of surgery, and the need for consultation among the needs of the patients would reduce the uncertainty in the operation process.²¹ Lindwall et al. (2009) emphasize the dialogue and interaction between the anesthesiologist and the patient before surgery is beneficial.³⁰ Berg et al. (2013) point out to focus on the patient and continuous provision and exchange of information during the waiting time. They also believe that an understanding meaningful nurse-patient interaction can be achieved before CABG surgery.¹⁵

Among the major concerns of the participants in our study were the outcome of the surgery, postoperative recovery, success/failure of the operation, fear of death, and worry about the ability to do activities after surgery. According to Butzlaff's results, cited in Charron et al.'s study, surgery-related stress, including the stress from prediction of the outcome, recovery or death, etc. are the most important sources of stress in patients.³¹ In Park's study, participants acknowledged the dangers and concerns arising from the operation and emphasized the need to maintain a positive and optimistic attitude.³² Padmanabhan et al. (2005) consider surgery as one of the major stressors in people's lives, believing that concerns with the outcome and fear of death are the causes of these stresses.²⁶ In Barnieh et al.'s study, also, the participants were uncertain about recovery from dialysis.³³ In Pourghane el al.'s study, the participants experienced fear of cardiac surgery, death, and worry about morbidity after surgery.⁵ Santos et al. (2008) observed socio-individualistic factors, such as difficulty in rehabilitation with work after transplantation, among participants in their study.²²

CONCLUSION

Patients waiting for CABG surgery undergo a lot of psychosomatic reactions due to the stress of waiting for an operation. Situational stress, uncertainty of the treatment process, and operation outcome were the main perceived stresses in these patients. Understanding of the determinants of stress in these patients and taking measures to provide psychological comfort to them on the part of healthcare providers can result in reduced stress, greater satisfaction, and shorter length of hospital stay.

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