

Living Within Limits: Unpleasant Experiences From the Perspective of Patients After Cardiac Surgery, a Content Analysis Study

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Background: Cardiovascular diseases (CVDs) are the main cause of death around the world and coronary artery bypass grafting (CABG) has proven to be the most effective treatment for ischemic coronary heart diseases when other treatments are ineffective. Despite the perceived improvement in the health of patients undergoing CABG, there are problems that result from operations after they are discharged from hospital. Provision of information is an integral part of most psychological interventions. Having a clearer understanding of patients' experiences will be helpful to healthcare workers with respect to patients' care and education planning. Caring science places more attention on the patient's everyday life from his/her perspective. Most of the studies conducted in Iran used a quantitative method or measured care needs according to pre-defined criteria.

Objectives: The aim of this study was to explore the lived experiences of patients who have undergone cardiac surgery, in order to obtain a deeper understanding of what they experienced and what those who provide care for these patients experienced.

Patients and Methods: A qualitative design, using a content analysis approach, was adapted to collect the data and analyze the experiences of 18 patients after cardiac surgery through a purposive sampling strategy. After the selection of the participants, semi structured interviews were held in order to collect the data. Scientific accuracy, and rigor of the data and research ethics were respected.

Results: The data analysis revealed three main themes and 11 subthemes, categorized as conceptual and abstract, based on their nature: concern of going out therapeutic framework (Fear of the recurrence of heart attack, Fear of performing more activities than permitted, Fear of taking journeys, Fear of mass communication)/Tired of living within the confines of the therapeutic framework (Need to take various medications, Dietary restrictions, Limitations in function, Family fatigue)/Living between boundaries (Feeling caught between wanting to accept or reject treatment, Feeling caught between the sadness of having the disease and the joy of it not getting worse, Feeling caught between knowing and not knowing).

Conclusions: Patients' experiences after cardiac surgery indicated the need for the consideration of holistic care and supportive intervention programs after surgery to promote recovery and a better quality of life following cardiac surgery.

Keywords: Thoracic Surgery; Qualitative Research; Cardiac Surgical Procedures; Analysis

1. Background

Cardio Vascular Diseases (CVDs) are the number one cause of death around the world. Approximately, 17.3 million people died from CVDs in 2008, representing 30% of all global deaths (1). Of these deaths, an estimated 7.3 million were due to coronary heart disease (2). Coronary Artery Bypass Grafting (CABG) has proven to be the most effective treatment for ischemic coronary heart diseases when other treatments are ineffective (3). Each year, an estimated 35,000 to 50,000 heart surgeries are performed in Iran (4). Many studies showed improvements in the quality of life of patients after CABG (5). Staniute and Brozaitiene reported significant improvements in the domains of physical functioning, limitations in the

patient's functions due to emotional problems, pain, mental health, energy/vitality, and physical aspects among female patients (5). The result of Hagiabady's study indicated improvements in all dimensions except social functioning and mental health after coronary artery bypass (6). Moreover, being satisfied and having a positive experience after CABG was one of the themes that was identified in Doering et al.'s study (7). Despite the perceived improvement in the health of patients undergoing CABG, there are still problems that result from operations after they are discharged from hospital (8). In the literature, it was identified that recovery from heart surgery may be prolonged and accompanied by compli-

cations such as pain (8), fatigue and sleep disturbances (9). Patients may also experience high levels of stress and uncertainty, they may lose a lot of confidence and feel unable to do routine activities that they were able to do before surgery (9). Uncertainty about their ability to return to work, feelings of insecurity and depression about the future are reported as typical of patients' experiences after heart surgery (10). Furthermore, Fayyazi et al.'s study indicates that there was no improvement in the quality of some psychological factors after open heart surgery (11). In fact, a disease leading to heart surgery is an unwelcome event in the patient's life and the operation would affect the person's physical integrity (9). From the perspective of patients, more accurate information about CABG recovery should be given to both patients and their partners (10). Provision of information is an integral part of most psychological interventions that have proven effective, and procedures include procedural information, sensation information, behavioral instructions, cognitive behavioral approaches, emotion focused/psychotherapeutic interventions, and various combinations of these. Information provided has improved patients' abilities to make decisions, their self-efficacy beliefs, recovery, diet and ability to exercise after CABG (12).

As the prevalence of heart disease and consequently surgery is continuously increasing, many healthcare professionals have focused their attention on this subject (13). In the context of cardiac surgery, nurses have an important role in providing patients with support and education about their postoperative recovery and in minimizing the risk of complications (14). Having a clearer understanding of patients' experiences will be helpful to healthcare workers with respect to patients' care and education planning (9), and for meeting patients' needs more holistically. Caring science emphasizes the patient's experience and places more attention on the patient's everyday life from his/her perspective (15). A patient centered approach is characterized by emphasizing the importance of the personal meaning of the illness for the patient individually (12). Most of the studies conducted in Iran used a quantitative method or measured care needs according to pre-defined criteria.

2. Objectives

The aim of this study was to explore the lived experiences of patients after CABG, in order to obtain a deeper understanding of what they experienced and of the experiences of those who provide optimal care for patients. Qualitative research aims to explore the complex phenomena that are encountered by clinicians, healthcare providers, policy-makers and consumers in the healthcare system (16).

3. Patients and Methods

This study was conducted using a qualitative approach involving a content analysis method in 2012-2013. The

study was conducted in the cardiovascular research and cardiac rehabilitation center of Guilan Province, Iran. Using a purposeful sampling strategy, 18 (11 males, seven females) patients were recruited after CABG to participate in this study. The selection of the participants had a maximum variation in terms of age, sex and degree of education. Nearly 15 months' time was spent on the data collection process so as to have more diversity. The participants were between 42 and 69 years of age (with a mean of 56 years of age). Fourteen patients had elementary school and high school certification, and four patients had passed college university education. Audio-recorded, face-to-face, semi-structured interviews were used for the data gathering, each interview lasted 35-55 minutes, and they were held in quiet locations in the cardiac wards so as to be convenient for the participants. The interviews were conducted by the first author. The interviews covered the patients' experiences during the period of time after heart surgery. The interviews started with general and open questions, such as "Will you please tell me your story about postoperative experiences?", "Compared with before the onset of heart disease, how do you feel?" Probing questions were then asked to follow the participants' thoughts and bring clarification to the participants' responses during the interviews, such as "What do you mean?", or "Please explain more about this issue?" The data collection and analysis took place concurrently. After the analysis, initial codes emerged and they were compared to the other codes, using a constant comparative analysis to examine the similarities and differences. Data collection stopped, when the data were saturated and the acquired codes were repeated. In other words, data collection continued until data saturation, the data were replicated and there was no new information.

A content analysis approach was employed to analyze the data. Qualitative content analysis has been applied to a variety of types of data and for various depths of interpretation (17). Through content analysis, it is possible to distill words into content related categories (18). It can be an important tool for understanding the emotions, perceptions and health or education policies developed through this type of research (19). The following steps were taken to analyze the data and process the content analysis: 1) Transcribing the interviews verbatim and reading through several times to obtain the sense of the whole; 2) Dividing the text into units of meaning that were condensed; 3) Abstracting the condensed units of meaning and labeling them with codes; 4) Sorting the codes into subcategories and categories based on comparisons regarding their similarities and differences; 5) Formulating themes as the expression of the latent content of the text (17).

Based on the qualitative research principles, five researchers were involved in the data analysis and then agreed about the units of meaning selected, the coding process, the categories and themes, to increase the rigor of the study. Moreover, in order to ensure the credibility

of the study, the researcher engaged with the research subjects and the data over a long period. Based on the researcher's prior experience as a nurse in CCU and in companies conducting qualitative research in the field of heart surgery, it was understood that some difficulties were experienced by patients related to the period in which cardiac surgery took place. In addition, using member checks agreements were sought with some of the participants involved to see if what was said was true, by conducting several additional interviews. Confirmability was measured by external checks conducted by foreign observers who were familiar with quality research. To ensure reliability, the researchers documented and reported the stages and processes of the study more precisely in order to make it possible to follow the study. For transferability, the maximum variation sampling technique was used in order to choose the participants in terms of gender and age. Furthermore, the researchers tried to provide quotes from the different participants in the same form.

3.1. Ethical Considerations

This study is part of a nursing doctoral dissertation that was approved by the research ethics board of the social welfare and rehabilitation sciences university, Tehran, Iran. Permission to enter the clinical field was received from the ethics committee of the social welfare and rehabilitation sciences university and as well as permission from the relevant officials of the related hospitals before the data were collected. The data collection was carried out only once the participants had confirmed and signed an informed consent form. The confidentiality of the data and the anonymity of the participants were maintained by disguising the names of the participants. Before the interview, prior to commencing, verbal consent was obtained and permission to record the participants' voices was obtained. Furthermore, the participants declared their approval by signing a consent form. The participants were assured that taking part in the study was voluntary and that they could cancel the proceedings at any time. The participants were informed that the tape recordings from the interview would be kept in a safe place and, if they were interested, the recordings could be returned to them after the end of study.

4. Results

The data analysis resulted in three main themes and 11 subthemes: concern of going out therapeutic Framework (Fear of the recurrence of heart attack, Concern of performing more activities than permitted, Fear of taking journeys, Fear of mass communication)/ Tired of living within the confines of the therapeutic framework (Need for medications multiple uses, Dietary restrictions, Limitations to functions, Family fatigue)/Living between boundaries (Feeling caught between wanting to accept or reject the treatment, Feeling caught between the sadness

of having the disease and the joy of it not getting worse, Feeling caught between knowing and not knowing). Living within limits fence was common theme in all of categories (Table 1). The themes were not mutually exclusive or independent, but rather overlapping and intertwined. The themes and their related categories were summarized from the patients' experiences after cardiac surgery. Listed below are the meanings of each of these themes, explained using the participants' direct quotations.

4.1. Concern of Going Out Therapeutic Framework

Concern and anxiety through going out therapeutic framework was experienced throughout the patient's life.

4.1.1. Fear of the Recurrence of a Heart Attack

Discomfort or chest pain was accompanied by the fear on the part of the patient that they would experience a heart attack again. Patients did not expect to experience postoperative pain and the pain caused them to fear that they would have a heart attack again, and they were disappointed as they feared for their likelihood of attaining a full recovery. In this respect, patients need more information about their surgery and its after effects. "Well, when the chest pain starts, I always worry about having a heart attack again" (male 1, 65 years old). Pain and fear of having a heart attack again disrupted the patients' sleep. "This pain that occurs sometimes makes me terrified, I get really scared and fear I will have a heart attack again, and with this fear, I'm not sleeping much" (female 11, 61 years old).

Table 1. Overview of the Themes and Subthemes Constructed Based on Patients' Experiences After Cardiac Surgery

Common Theme in All of the Categories
Fear of the recurrence of a heart attack
Concern of going out therapeutic Framework
Fear of performing more activities than permitted
Fear of taking journeys
Therapeutic framework
Fear of mass communication
Need to take various medications
Tired of living with dietary restrictions
Limitations to life due to the therapeutic framework
Family fatigue
Living within boundaries
Feeling caught between wanting to accept or reject treatment
Feeling caught between the sadness of having the illness or the joy of it not getting worse
Living within boundaries
Feeling caught between knowing and not knowing

4.1.2. Fear of Performing More Activities Than Permitted

Most participants reported limitations in their physical activities after cardiac surgery. This was found to add to their frustration. Participants stated that they were always careful to not do too many activities. Some described the advice they were given as vague, very restrictive or not realistic. They were concerned to do anything that might cause them another injury. Activity guidelines should have been developed to help them resume their pre-surgical lives. "I started exercising again. But, I am always careful, I'm afraid of too much exercise as I had a heart attack" (male 5, 42 years old). "When I work, my mind is always busy. I do not have enough strength to manage my daily life. I used to love to go swimming. But I can't do that now. Now I just walk in the pool" (female 18, 62 years old).

4.1.3. Fear of Taking Journeys

Some of the participants told of their fear of travel. A lack of proper education and a lack of knowledge about proper lifestyles lead to restrictions on the lives of patients after cardiac surgery. "My first heart attack occurred whilst travelling. Afterwards, I have been afraid of traveling and I tell myself: 'Maybe it is harmful for me'" (male 3, 65 years old). "I was traveling after CABG, I traveled three times after CABG, but only short trips and I am afraid of traveling alone" (male 13, 55 years old).

4.1.4. Fear of Mass Communication

Findings revealed impaired communication abilities on the part of participants. Participants spoke of a number of their relationships being limited after CABG, including those with their colleagues and friends. "I'm not sleeping much, I feel tired all the time. For this reason, I'm afraid of too much communication, which is associated with a lot of fatigue" (female 16, 67 years old). In fact, participants considered having a good sleep pattern as being one of the definitions of recovery. "My relationship is restricted by my children and family members. The disease can impair my ability to communicate. When I'm in a crowded place, my heart beats rapidly and I am afraid" (female 2, 67 years old).

4.2. Tired of Living Within the Confines of the Therapeutic Framework

The boredom of having to remember to take various medications, dietary restrictions, limitations of function and family fatigue were experienced by the participants. Furthermore, only a few said they considered the limitations to be a reality of life after surgery and did not worry about the limits.

4.3. The Need to Take Medications Multiple Times

A number of patients had a tendency to skip doses because of the many times in a day that they had to take the medications. Participants had little understanding

of the therapeutic effects of the drugs and were concerned about both the quantity and combination of the drugs they were prescribed. In this respect, patients need to receive information from the medical team about medicine and treatments, and need a way to ask questions. "I never had any desire to use medicine. But, now, I take six to seven tablets daily and sometimes I don't even know why. It is very boring for me" (male 9, 61 years old). Some patients were concerned about the side effects of the drugs. "I take a lot of drugs, for the heart, for foot pain and for diabetes. I'm sure they have many side effects" (male 4, 64 years old). On the other hand, a few patients pointed out that they were prepared to take their medicines because they knew the benefits of these medications. They viewed medicines as an aid for preventing the progression of cardiac disease and another heart attack.

4.4. Dietary Restrictions

Participants described their fatigue with their dietary restrictions and treatment regimen following cardiac surgery. Not being allowed to eat certain foods, their boredom with eating low fat and low salt diet and dietary differences with other family members were tiring for the patients. "A restrictive diet is very boring. You cannot go to parties or travel, because you should eat certain foods. Maybe I do not know what to eat. However, a long-term diet is really boring" (male 6, 61 years old). Based on the interviews, it seemed that the patients did not have adequate knowledge of a proper diet. In fact, patients needed to receive more necessary information and education about the types of food they could eat and how to use the food. "When I did not have complete information regarding diet, it was very uncomfortable for me" (female 7, 62 years old).

4.5. Limitations to Functions

Participants said they experienced limitations to their physical, emotional and social functions. Participants experienced tiredness, pain, and having no energy during the day and being unable to perform daily tasks after surgery.

A return to a normal social life is understood as being when the patient would be able to return to his or her previous functions. For the majority of patients, aging was associated with retirement and heart disease, and these coincide with associations with limitations to functions. "Before surgery, I had many health problems. After surgery, I was quite limited, I could not do anything" (male 12, 64 years old). Some patients withdrew from social activities and were concerned about finding a job suitable to their physical condition. Participants said they felt that they lost control and were disturbed by a single small stimulus. "I always have to be careful. All my activities are limited. I always ask myself: 'Can I do this? Can I do that?' I go to the shops less frequently. This restriction

has a great effect on my mood. I get angry too quickly" (male 8, 69 years old). For some patients, work means the world, but disease, accompanied with limited activities, meant many were concerned about returning to their previous work. "Before surgery, I worked on building, but after surgery my doctor won't let me go back to work. It has a bad influence on my mood, my work means the world to me" (male 14, 68 years old).

4.6. Family Fatigue

Patients felt their disease was tiring for their families. From the patient's perspective, family fatigue was associated with the long process of therapy, diet appropriate long-term cooking for patients, commuting problems and coping with the irritability of the patient. "The treatment of heart disease is permanent. Families are too tired, tired of commuting, cooking a meal just for me" (male 4, 64 years old). "They (the family) were tired of my heart disease. They always accompany me. They (the family) tolerate my harsh morality" (male 13, 55 years old).

4.7. Living Between Boundaries

Most patients were faced with a dichotomy in their feelings in relation to their knowledge, their acceptance of their disease and the treatment. A change in self-confidence after surgery was one of the causes of the sense of duality. They felt lower confidence in making decisions by themselves. Patients need consistent advice and guidance for appropriate decision making.

4.8. Feeling Caught Between Wanting to Accept or Refuse Treatment

From the diagnosis of the disease onwards, many patients have to make decisions about whether to undergo surgery and whether to accept or refuse treatments after surgery that are associated with several physically, mentally and socially stressful factors. "Sometimes, I follow my treatment very well and seriously. Sometimes I wonder: 'Do I really need it? Or is the treatment enough?' I do not know why." (male 10, 66 years old). "In my opinion, I am not as whole a person as I was before. My willpower is weak. Sometimes, I have difficulties in complying with the doctor's advice" (male 18, 65 years old).

4.9. Feeling Caught Between the Sadness of Having the Disease and the Joy of it Not Getting Worse

Some participants spoke of a duality of feeling in relation to heart disease. In fact, they needed emotional support from various sources. "Sometimes I was happy that the disease is curable, but sometimes I wondered: 'Why my heart?'" (male 5, 42 years old). "Sometimes I think heart surgery is much better than mastectomy. Why am I depressed? But sometimes, from sorrow, I just sit and cry" (female 15, 64 years old).

4.10. Feeling Caught Between Knowing and Not Knowing

Patients spoke of a duality of feeling - of knowing and not knowing. A lack of education about self-care and inadequate awareness in this regard were associated with uncertainty. "Sometimes I did not know what to do. It seems I am in a quandary. Sometimes, I feel I know everything. Sometimes, I am a stupid" (male 2, 64 years old). "Previously, I would always give advice to all my families and friends, but, now, sometimes I feel I know as much as you and sometimes I do not know anything" (female 7, 62 years old).

5. Discussion

A qualitative approach was used to explore and obtain a deeper understanding of the experiences of patients after cardiac surgery. Based on the results, life after cardiac surgery is seen as a dynamic experience, characterized by periods of certainty, uncertainty, and changes in behavior and feelings that evolve over time. The patients described a high level of limitations after cardiac surgery. The findings showed that struggling to live with their limitations was a common theme in all of the categories. Restrictions can destroy an individual's sense of control of their life (20). The illness and hospital treatment of CAD both represent serious challenges to the patient. These challenges are likely to stimulate a range of problem-focused (i.e. seeking help, information, and social support, and initiating life style changes) as well as emotion-focused strategies (i.e. strategies for managing the fear and anxiety associated with the illness, treatment and the hospital setting) (12). The results of Shojaei's study demonstrate the impact of heart disease on all aspects of patients' life (21). The lived experiences of patients after heart operations as narrated by the informants in this study can be understood within the following themes: concern of going out therapeutic framework, Tired of living within the confines of the therapeutic framework and living between boundaries. Within the first theme, the patients' experiences represent the concern of going out therapeutic framework. The fear of the recurrence of a heart attack, the fear of doing more activities than permitted, the fear of taking journeys and the fear of mass communication were experienced by patients. Exploring the patients' lives led us to the fact that a huge part of the patients' fears were due to changes that had happened after cardiac surgery. Having a heart attack had had a profound impact on the patients in many ways (8). In this study, patients spoke of their fear of having a heart attack again with going out therapeutic framework. These findings were confirmed by the patients in White's study, who expressed considerable fear and anxiety that they might have another (fatal or severely debilitating) acute event at any time, especially that it might be fatal. Moreover, this is often coupled with sadness or depression over the loss of their previous good health, which may remain for

months afterwards (8). Since occasional chest pains are reported as a reason for fear and anxiety, and anxiety is a factor known to negatively influence recovery after a cardiac event (22), patient pain could be reduced with suitable treatments. Although there is no consensus on the mechanisms underlying CPOP (Chronic Postoperative Pain), knowledge of predictors for increased risk of CPOP should be integrated into health care professionals' pain assessments of CABG patients. Treating acute pain and analgesic medications are needed after cardiac surgery (23). Few patients did not talk about their fears, although this did not necessarily mean that they were not worried about having another heart attack.

Fear of doing more activities than permitted was another concern for patients. Similarly, in Namazy's study, patients were sick after surgery, felt sicker than before, and their activities were limited (9). In another study, patients spoke of the "fear in the back of their mind that they were frightened of doing something that will bring it on again" (8). In Lie et al.'s study, patients used to a high level of physical activity prior to surgery systematically increased their activity after surgery even if they felt it was tough (10). Perhaps cultural differences and adequate knowledge of the scope of activity are reasons for the difference.

Fear of taking journeys was another finding of the present study. Some patients' concern of cardiac attacks during journeys can lead to them avoiding going on journeys. The most prominent impacts of cardiac disease on a person's everyday life have been identified as social isolation and living in fear (24). Hazelton wrote: "Many patients withdraw from social or physical activities, often under the conception that they are helping themselves" (25). The results of this study reflect the patient's inability to comply with the condition and to return to life before the illness. The ability to cope with a crisis, such as a disease, depends to a great extent on factors, such as support from family and friends, and advice from health-care professionals, to feeling appreciated and loved (26). In this respect, the perceived support and information from family and staff are very effective. Family support is considered crucial to regaining health as soon as possible and changes the life of the patient after a heart attack (27).

Fear of mass communication was experienced by patients in this study. Lack of good sleep and chest pain were the main causes of fear of mass communication. Similarly, tiredness or fatigue, such as the need to rest or sleep during the daytime, and difficulties with sleep patterns were reported as problems, as were falling asleep or waking up too early, in Lie et al.'s study (10). Furthermore, the main findings of Schou and Egerod's results relate to general phenomena such as discomfort and impaired communication (28). Since fear and concern have different meanings depending on the individual, as these are experienced differently from person to person, even appropriate information delivered can be used to plan appropriate on need of patient by health care professionals.

The second theme that was extracted based on the experiences of patients was being tired of living within the confines of the therapeutic framework. Taking Medications Multiple Times, dietary restrictions, limitations and family fatigue, were the most common issues mentioned by the patients. Similar results have been obtained in other studies.

5.1. Taking Medications Multiple Times

Excessive use of drugs led to patients experiencing fatigue and not adhering to their medication regimen. Some studies showed that patients with cardiovascular disease are known to adhere poorly to medication (29). Based on the findings of a qualitative research study, it was shown that patients perceived medicines as an "intrusion into their daily life", were concerned about having to take them for the rest of their lives, and that some patients disliked taking medicines (8). Some of the participants spoke of a lack of awareness of the need to take medicine. In line with these findings, Tolmie and colleagues found that some patients were not taking their medicines and that one of the reasons for this was that they were not convinced that their diagnosis was accurate or that the medication was necessary (30). Similarly, 35% of the patients in Lie et al.'s study did not know why they had to take the prescribed medication (10). In addition to the above, Shafipour et al. reported that all the patients in their study requested the necessary information and education about how to use food and their medicine (13). The results from this study indicate a need for an improvement in information, education and individualized advice and, also, for there to be a way for the patient to ask questions that is very straightforward.

Being tired of dietary restrictions was one of the sub-themes of this study and it seemed that insufficient information was aggravating this issue. A similar result was obtained in Sabzmakan et al.'s study. In this study, conflicts between patients' diet regimens and their families' diet regimens, and the patients becoming tired of the taste of their diet regimens were perceived as barriers to behavioral change in patients (31). Furthermore, a lack of information after CABG (10) and at discharge was reported in other studies (10, 32). Inadequate provision of appropriate information may be a particular problem for certain groups of patients (33, 34). Several studies have claimed that patients have unmet information needs after discharge, following acute myocardial infarctions (AMI). One major theme in a study was informational needs being unmet (needing more or different information) (7). For example, studies have found that patients were aware that they needed to reduce their fat intake but they were often not sure about exactly what they should be eating (8). Since there is a link between understanding the positive effects of a behavior and following the behavior (35), improving patients' understanding of dietary restrictions is essential for positive behavior.

After heart surgery, patients experienced limitations to

their functions, including limitations to physical, psychological and social functions. The illness disturbs the body's access to the world and prevents the person from carrying out their natural daily life (15). Feeling tired and having no energy during the day, and being unable to handle daily living activities like taking a bath, buttoning up clothes and walking, were expressed by patients postoperatively in Namazi's (9) study. Heart disease and heart surgery as a life event is naturally experienced as a threat to life (36), and accompanied by physical and psychological changes in patients (20). More attention is necessary in CABG patients who are manual workers and who feel insecure about the future. This occupation is an independent predictor for patients' failure to return to work after CABG (10). Some patients report pain, fatigue and sleep disturbances as prevalent symptoms during the first weeks after CABG (37) and, in Namazi's study, spoke of strong and rapid heartbeats in the first few weeks after the operation as inhibiting their engagement in normal daily activities (9). Banner wrote: "Unsuccessful patients frequently talked about how their inability to engage in physical activity was ... the result of limitations related to coronary disease" (38). Patients had different experiences with physical activity, thus, patients should be assessed individually and their education should be planned based on their needs. Patients experienced psychological limitations. Similarly, the main findings in Schou and Egerod's study relate to general phenomena, such as psychological phenomena, such as loss of control and loneliness, and existential phenomena, such as temporality and difficulties in human interactions (28). In a qualitative study, participants expressed losing control, inability to handle stress, and being disturbed by a single small stimulus (9).

Patients also experienced limitations to their social functions. Similarly, in another study, patients were worried about the possibility of not maintaining their previous role and level of responsibility in their family and in society (13). In White's study, patients revealed that after discharge, they had not been able to do anything, even small jobs, and were easily tired (8). Furthermore, in Pourghane et al.'s study, patients spoke of the reduction of individual roles and activities due to the problems of heart disease (39). Various psychosocial factors have been associated with RTW (Return to Work), including negative emotions and illness related cognitions. Review studies have concluded that psychological factors are the most important and are decisive factors associated with RTW after a cardiac event (12).

Participants were concerned about their family's fatigue in the treatment process. It was clear that having a heart patient in the family would have a broad impact on the family. The family of the patient is also affected by this crisis (9). The patient may recover more slowly or have trouble resuming the activities of daily living (ADL) (40) and, in this process, family vulnerability is not unexpected. Participants in Dabirian et al.'s study reported having encountered family problems for a few months

after surgery (41). In this study, some patients could not adequately explain their concerns. It seemed some had a tendency to not express their concerns, which is consistent with Shafipour et al. and Karlsson et al.'s studies (13, 42). Living between boundaries was the third theme extracted based on the experiences of patients. Patients found themselves at the boundary between knowing or not knowing, feeling caught between wanting to accept or reject their treatment, and satisfaction or dissatisfaction that heart disease is curable.

Severe illnesses often lead to a crisis. A crisis means a feeling of distance, confusion, and a loss of control and a loss of ability to handle the situation (42). In this study, patients lost a lot of confidence. The incidence of such cases can cause patients not to seek follow-up treatment. Thus, if the care of the patient is to be continued after they are discharged and go home, it is essential that they receive a good care plan from their health care providers and receive proactive support from both nurses and their family; these can have a valuable and assuring influence on patients. In Rakhshan et al.'s qualitative study, "Hesitation in accepting life with a pacemaker" was one of the subthemes identified (20). Berghammer et al. have claimed that patients had to strike a balance between being different and not being different; being sick and being healthy (40). These patients faced delays in their recovery, and they need emotional and practical advice from expert health care professionals (7). Repeatedly telling patients that they need further treatment and methods of care is not enough, and may cause patients to feel a reduced sense of wellbeing and a feeling of loss of personal control over their health (43), and trust in their efficiency and ability to perform self-care. Depending on the implementation of the desired behavior (31, 44), health experts can emphasize the patient's ability and efficiency.

The findings of this study give us an in-depth and more detailed understanding of the lived experiences of patients after cardiac surgery. Knowledge of patients' needs may provide direction for clinical practice. The results can be used by health care providers to create a supportive environment that promotes a better quality of life for cardiac patients. The strength of the study is that the interviews were conducted by a researcher (the first author) to promote consistency in interviewing. The forgetfulness or unwillingness of some patients to completely recount their experiences can be considered as the limitations of this qualitative study.

This study revealed patients' experiences after cardiac surgery. Based on the results of the study, we see that patients need information and support to resume their routine lives after cardiac surgery. The study's results will be useful for medical teams seeking to relate to what patients experienced as limitations and how health teams can devise strategies for health promotion and to improve the patients' quality of life after surgery. Further research is needed to better understand the complications that will occur after cardiac surgery and in the follow-up

to produce better outcomes. This study focused on the patients' perspectives after cardiac surgery in the Guilan province of Iran. Therefore, conducting further studies in different cultures and contexts is suggested in order to substantiate and follow up on this study's findings, as well as to improve awareness among health teams regarding the different aspects of patients' experiences after cardiac surgery.

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Authors' Contributions

Parand Pourghane was the main researcher; she performed the interviews, analyzed data and prepared final report. Mohammadali Hosseini was cosupervisor and participated in peer checking, data analyzing and drafting the manuscript. Farahnaz Mohammadi was advisor. She participated in peer checking, and preparing the research report. Fazlollah Ahmadi was advisor and participated in methodology. Rasool Tabari was advisor and participated in peer checking and methodology.

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