

## Patient Commitment to Cardiac Rehabilitation: A Qualitative Study

### Abstract

**Background:** Commitment to Cardiac Rehabilitation (CR) is one of the essential strategies to reduce the long-term complications of cardiovascular disease. The attributes of patients' commitment have not been defined distinctly. Thus, the present study aimed to describe the attributes of commitment to CR from the participants' perspective. **Materials and Methods:** This qualitative study was carried out in Tehran from 2018 to 2019. Data were collected using semi-structured interviews with 30 participants, including 13 CR specialists, 13 patients, and four caregivers, through purposeful sampling. The analysis was performed through the conventional content analysis using the Elo and Kyngäs approach. **Results:** Commitment to CR has one theme titled the attitudinal-motivational aspect that consists of four categories including attitudinal-cognitive, attitudinal-behavioral, attitudinal-emotional, and motivational as the core features. The commitment to CR is devotion, internal desire, and voluntary obligation to initiate and continue CR cooperatively, all of which are accompanied by the purposeful initiation of the treatment plan. **Conclusions:** The patient's commitment to CR is an intrinsic interest in achieving health that stems from the acceptance of the disease and the need for treatment. Besides, the rehabilitation team facilitates purposeful interpersonal relationships between the patient and the treatment group. It provides the basis for the patient's active efforts to meet the challenges of the treatment process.

**Keywords:** *Acceptance and commitment therapy, cardiac rehabilitation, Iran, qualitative research*

### Introduction

According to the released statistics in 2017, there were an estimated 17.8 million deaths caused by Cardiovascular Disease (CVD) worldwide.<sup>[1]</sup> CVD is currently the most common and global chronic disorder and is projected to account for more than 23 million deaths throughout the world by 2030.<sup>[2]</sup> Due to the changes in sociocultural factors and dietary habits as well as inadequate physical activities, CVD is the leading cause of mortality in Iran, with a rate of 33–39.5%.<sup>[3]</sup> A valuable and cost-effective strategy for the effectiveness of post-CVD care and therapeutic interventions is Cardiac Rehabilitation (CR) implementation.<sup>[4]</sup> CR consists of a series of activities aiming to improve the patient's physical and psychological condition and lifestyle, modify risk factors that lead to adaptive behaviors, and maintain optimal functioning in daily life.<sup>[5]</sup>

The success in achieving the CR goals is driven by the patient-caregiver's long-term cooperation and commitment to

the healthcare delivery system.<sup>[6]</sup> Several strategies, including using motivational enhancement techniques, establishing a connection between the patient and the treatment team, helping the patient overcome existing barriers, and setting therapeutic goals based on the patient's needs, can support them to increase commitment to CR.<sup>[6,7]</sup> Commitment to the treatment is a factor in forming effective treatment,<sup>[8]</sup> internal desire, and voluntary obligation to initiate purposeful performance that stems from the patient's self-confidence and goals.<sup>[9]</sup> Commitment to treatment will be associated with important outcomes such as trust, satisfaction, reduced hospitalizations, and improved adherence to the treatment plan.<sup>[10]</sup> The use of CR over the usual care improves the quality-adjusted life years and cost-utility ratio.<sup>[11]</sup> In a study conducted in Iran, the prevalence rate of CVD in the patients who participated in CR 10 years after heart failure was 18%, and this rate was reported to be 36% compared to the patients who did not actively participate in the rehabilitation program.<sup>[12]</sup>

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Therefore, recognizing the characteristics and dimensions of commitment to CR plays a vital role in designing commitment-enhancing interventional programs appropriate to cultural and economic conditions. Qualitative studies, through the collection of deep and context-based data, provide valuable information based on the individuals' experiences of the phenomenon.<sup>[13]</sup> The qualitative content analysis is interpretive, naturalistic, situational, reflexive, and case-oriented with emergent flexibility that emphasizes validity. Given the effects of culture and ethnicity on understanding a phenomenon and the lack of qualitative study in identifying the attributes of commitment to CR, this study was conducted in Tehran, Iran, in 2019, using a content analysis approach to analyze and explain the individuals' perception of the attributes of commitment to CR.

## Materials and Methods

This qualitative study was carried out using the conventional content analysis approach on the experiences of commitment to CR in patients with heart disease, their families, and specialists in the cardiac rehabilitation team in selected hospitals in Tehran between April 2018 and November 2019. This approach leads to the formation of valid data with the aim of creating new insights and knowledge about the field under study.<sup>[14]</sup> Five educational hospitals with active and large CR departments were referred. The participants entered the study through purposeful sampling. A total of 30 individuals participated in the study [Table 1]. The inclusion criteria for the specialists included at least 2 years of full-time experience in the cardiac rehabilitation department; for patients, the experience of direct participation in CR, and for caregivers, having the experience of participation—the involvement in CR and being responsible for giving care to and accompanying the patient.

The data were collected via individual, in-depth, semi-structured interviews. The first author asked the specialists' team the main questions, including "What is your experience of one working day at a CR center?" "What can help the patient not to abandon the treatment process?" "What is your definition of a patient's commitment to a treatment plan?" and the main questions from the patients and caregivers included, "Please talk about a typical day of care for your patient." "What makes it difficult or easy for the patient to control the disease?" "What is your definition of a patient committed to CR?" Afterward, the probing questions were asked from the two groups "Explain the challenges and problems that exist in the path of commitment to CR." The interviews lasted for 40–100 min, and the average duration was 50 min. At the first opportunity after the interview, they were transcribed verbatim, and data were collected and analyzed simultaneously until data saturation was reached. The data saturation was reached after 27 interviews, and the 5<sup>th</sup> and 24<sup>th</sup> participants took part in a follow-up interview.

**Table 1: Participants' characteristics**

Participants' characteristics	Numbers
Gender	
Male	15
Female	15
Participants	
Specialists of the rehabilitation team	13
Patients	13
Caregivers	4
Specialists	6
Nurses	2
Clinical psychologists	2
Cardiologists	1
Nutritionist, Physiotherapist	1
Occupational therapist	1
Patients	
onary Artery Bypass Graft	5
Heart Failure	4
Myocardial Infraction	2
Valve Replacement	2
Education	
Specialists' group:	3
Bachelor's degree	5
Master's degree	5
*PhDs	3
Patients and caregivers:	
Illiterate	7
Diploma, Bachelor's degree	5
Master's degree	2

\*Doctor of Philosophy

Data analysis was conducted using conventional qualitative content analysis through the three-step approach proposed by Elo and Kyngäs.<sup>[15]</sup> During the preparation phase, all interviews were transcribed. Following that the interviews, as units of analysis, were analyzed three times. After reviewing the semantic units related to the research questions in the organizing phase, the initial codes were extracted through the inductive approach. In the reporting phase, the semantically similar initial codes were placed in their respective subcategories. Subsequently, the resulting subcategories were reviewed, and after repeated comparisons, the same subcategories merged to form the main categories. The coding process of the phrases was done by all three authors, and afterward, they were compared to each other, and any disagreement was addressed. Table 2 provides the analysis details of one category.

Lincoln and Guba's criteria were used to examine the trustworthiness of the data.<sup>[16]</sup> To this end, the participants' selection with a maximum variety in terms of the demographic characteristics as well as purposeful sampling was considered to increase the credibility. Member checking was performed

**Table 2: An example of a data analysis process**

Meaning unit	Condensed Codes	Subcategories	Main category
Commitment is the formation of two-way communication and interaction between the patient and the family with the treatment team accompanied by a feeling of emotional attachment (P9). The root of the commitment to treatment is the patient's association with the treatment plan, on which people's culture and understanding of their condition have an effect (P14).	Commitment: the factor in forming two-way and deep communication and interaction between the patient and the family with the treatment group, a two-way process between the patient and the therapist.	Establishing and maintaining interpersonal relationships in order to properly implement the treatment plan	
Commitment includes persistence in behavior following stability in it. Regardless of whether the behavior is right or wrong, when a person has such behavior, we can say that he/she is committed (P5). Commitment is the pursuit of consistent behavior. And the operational aspect of this concept is more substantial than its expressive aspect. In fact, the patient committed to treatment has passed the stage of knowledge and attitude, and his/her knowledge has become a function in life (P2).	Stability and continuity of behavior in the patient through belief in the effectiveness of treatment, an important factor in the stability of relationships, consistent and continuous behaviors	Consistency and continuity of behavior	The Attitudinal-behavioral aspect of Cardiac Rehabilitation (CR) commitment
Commitment is a proper understanding of the situation and actively pursuing the conditions for managing the physical and mental condition (P9). Commitment is generally accompanied by compliance, and when external follow-up is reduced yet the patient is still determined to actively pursue the treatment process, the commitment is formed in the patient (P13).	Active follow-up of the treatment plan by the patient and no need to be reminded by the treatment group, active participation in the treatment plan, active involvement in the treatment plan, following up on duties and responsibilities	Actively following up the treatment plan	

to ensure the data credibility, and coded interviews were shared with the five participants at different sessions, and their opinions were sought to increase the confirmability. Accordingly, the transcriptions and initial codes were provided to the participants for review and comment. Three experts' opinions were also obtained to confirm the consistency between the coded data and the participants' statements to increase the dependability. The study results were given to six participants to judge the similarity of the results with their own experiences to increase the transferability.

### Ethical considerations

This study was excerpted from a doctoral dissertation on Nursing Education with the code IR.SBMU.PHARMACY.REC.1399.241. Before the interview, the purpose and the use of the tape recorder were explained to the participants, and the written permission to record their voice was obtained from them. The time and location of the interviews were chosen according to the participants' convenience.

### Results

The final analysis of the 348 initial and 42 condensed codes was obtained in the form of 12 subcategories, four categories, and one theme [Table 3]. The participants' comments are presented using direct quotations.

#### The essence of the attitudinal-motivational aspect of commitment to the CR

Commitment to the CR is a dynamic concept that allows patients to accept illness and treatment with a sense of loyalty

and responsibility for themselves and their families. Through the establishment of stable interpersonal relationships with the treatment team, they actively pursue CR. This theme consists of four main categories, which are described below.

#### The attitudinal-cognitive aspect of CR

In this section, the participants talked about the role of the individuals' attitudes and recognition of the importance and necessity of goals in the formation of commitment. They explained how the patients' sense of duty to themselves and their families provides a good basis for them to be committed to their treatment plan, and they remain loyal despite the limitations. The acceptance of the disease and adaptation to the treatment plays an essential role for the patient and even the caregivers in changing the individuals' attitudes toward the need to adhere to CR. This category consists of two subcategories.

##### *Loyalty and internal obligation to adhere to the treatment plan*

The patient must be interested in his/her treatment plan and be motivated to adhere to it and is required not to lose touch with the heart rehabilitation team members. A respondent stated: "*Commitment for patients, I think, is first, to promise themselves to pay attention to the illness and its subsequent physical condition. If they make this promise to themselves, they'll subconsciously adjust to their rehabilitation plan.*" (P1).

##### *Acceptance of the disease and treatment*

Commitment effectively helps the treatment process and enables patients and their families to accept the condition and

**Table 3: Main theme, categories, subcategories, and codes emerged from data analysis**

Theme	Categories	Subcategories	Codes
The essence of the attitudinal-motivational aspect of commitment to the cardiac rehabilitation	The attitudinal-cognitive aspect	1-Loyalty and internal obligation to adhere to the treatment plan	-The patient's promise to himself/herself -The inner promise to do the rehabilitation -A promise between the patient and treatment group -A promise to accept duties -Acceptance of rehabilitation program -Acceptance of the disease as a part of the self -Adapting with the disease along with the living conditions
		2-Acceptance of disease and treatment	
	The attitudinal-behavioral aspect	1-Establishing and maintaining interpersonal relationships in order to properly implement the treatment plan	-Interaction between the patient and family -Cooperation of the treatment team with the patient -Not losing contact with the treatment team -Coordinating all treatment plans -Stability and continuity in the patient's behavior -Important factor in the stability of relationships -persistent behaviors -No need to be reminded by the treatment team
		2-Consistency and continuity of the behavior	-Involvement with the treatment program -Treatment follow-up by the patient
3-Actively following up the treatment plan			
The attitudinal-emotional aspect		1-Desire to continue and adhere to the treatment plan	-Pursuit along with a sense of pleasure -Understanding the situation -The importance of the goals -Feeling dependent on the treatment team -A sense of attachment to family
		2-Feelings of belonging and attachment to people, goals, and performance	
Motivational aspect		1-Responsibility for disease and treatment	-Accepting responsibility for the disease -Not giving up the behaviors
		2-Respect for independence to manage the treatment plans	-Accepting responsibility for activities -Accepting responsibility for valuing life -Feeling obligated to the efforts of others
		3-Sense of having control over physical and mental conditions	-The patient's independence -The managerial ability to take care
		4-Dependence on time	-Sense of being able to manage situations -Feeling of authority over your situation
		5-Active effort to deal with challenges in order to recover	-A sense of control over the physical condition -The patient's adherence to internal motivations -Following rehabilitation without outside control -Long-term support of the treatment plan -Positive feeling to the treatment over time -Patient involvement in treatment over time -Efforts to address treatment challenges -The patient's effort to use the capabilities -The constant effort to overcome challenges to achieve health

continue the treatment process. After the illness, the patient needs to accept the new condition and all limitations and

adapt to the new physical condition. A participant noted that *"I must be interested in my treatment plan and be motivated to*

*follow it. After the illness, I need to accept my new condition and its limitations and adapt to the new physical condition I face.... So, I can say that commitment to treatment is a kind of interest and love of the treatment plan obtained because of the acceptance of the disease and the treatment plan”* (P23).

### **The attitudinal-behavioral aspect of CR**

Commitment explains why individuals are involved in activities that are compatible with each other over time and under different circumstances. The participants talked about the role of intimate relationships of the treatment group with the patients and the importance of involving them in care decisions. They described using strategies such as partnering with the patient in setting goals based on the patient's needs, creating a strong relationship between the patient and the treatment team to help and empower the patient, taking into account setting goals based on the patient's needs. This category consists of three subcategories.

#### *Establishing and maintaining interpersonal relationships to properly implement the treatment plan*

Commitment has been defined as a consistent relationship with others based on an effort to retain the long-term and meaningful relationship between two sides, perseverance for maintaining relationships and overcoming the challenges in relationships. In this regard, a participant stated: *“The relationship between the patient and members of the treatment team begins from the patient's first visit and continues for years after, and it's very important in cardiac rehabilitation because patients, due to the nature of their chronic illness, always need to have contact with members of the treatment team. The more correct this relationship is, the more responsible they'll feel toward each other.”* (P11).

#### *Consistency and continuity of behavior*

Adaptation to illness is the process of maintaining a positive attitude toward oneself despite having physical problems. A participant said: *“Commitment is stability in behavior ... When a person behaves in this way, whether the behavior is right or wrong, we can say that the person is committed to that issue. When the patient believes in treatment effectiveness, this belief causes continuity in behavior.”* (P5).

#### *Actively following up the treatment plan*

The chronic heart disease process creates conditions requiring the patient, the family, the caregiver, and the treatment team to actively follow the treatment plan. A patient described, *“Commitment is the interest in following the tasks and responsibilities that patients believe they must always take to achieve health and it's not necessary to remind the patient of these cases... It's like following a low-salt diet, limit fluid intake... which is a part of your eating habits forever.”* (P24).

### **The attitudinal-emotional aspect of CR**

This category describes that commitment is an individual's tendency to be actively involved in the treatment plan,

which creates a chain of activities and interconnectedness. A strong connection between the therapeutic aspects allows the patient to perform their therapeutic tasks without retreating from decisions and actions. Consequently, this provides a kind of attachment in the patient to the treatment program, family, and treatment team over time. This category consists of two subcategories.

#### *Desire to continue and adhere to the treatment plan*

Commitment in the healthcare system leads to the formation of a strong communicative network between the treatment team, the patient, and the family that will be accompanied by profound results in clinical care such as trust, satisfaction, and adherence to the therapeutic plan. A respondent stated: *“Commitment to treatment is a kind of interest and love of treatment plan obtained by accepting disease and treatment and, in fact, it's the patient's own desire to follow all the instructions carefully and correctly with interest and awareness. So, the patient follows the whole treatment plan over time and in different conditions.”* (P17).

#### *Feelings of belonging and attachment to people, goals, and performance*

Commitment is an effective attachment in a patient to the caregivers, created over time, thus causing a sense of need in them. It, in turn, leads to enhancing the efforts to achieve therapeutic goals and improve treatment outcomes by affecting the patients' behavior, understanding, and emotions. One of the respondents said: *“When a patient believes in the effectiveness of treatment and the efforts of physicians and nurses to heal, they begin to try hard and follow cardiac rehabilitation seriously, both at medical centers and home.”* (P4).

### **The motivational aspect of CR**

Participants stated that commitment was a type of duty or responsibility to do what one was most aware of, which stemmed from the individual's sense of vigorousness and control over their life and surroundings. It had caused the patient to adapt to the condition and challenges of illness and treatment over time. Most participants stated that the treatment group's efforts to improve the patients' and the families' knowledge and take into account their independence and follow-up their treatment plan formed the patients' trust. Therefore, they considered it the facilitator of adherence to health behaviors. This category consists of five subcategories.

#### *Responsibility for disease and treatment*

A sense of responsibility toward one's health, accepting responsibility for the disease, and creating a relationship between patients and the CR team all play an important role in creating commitment. One of the participants mentioned in this regard: *“Commitment is the responsibility that individuals consciously feel for the tasks assigned to them based on their situations. The source of this duty is internal, which makes it easier for people not to waver and to continue active participation in all treatment programs”* (P5).

### *Respect for independence to manage the treatment plan*

Doing an activity in conjunction with interaction, independence through having more knowledge, and active and purposeful involvement in action are significant parts of forming commitment to a rehabilitation program. A respondent stated: *“When cardiac rehabilitation training is according to the patient’s needs, it strengthens his or her knowledge and skills for self-care, and increasing patients’ ability to manage illness and treatment enhances their independence in self-care”* (P7).

### *Sense of having control over physical and mental conditions*

The formation of the committed action in individuals is influenced by motivational processes such as adaptation, dependence on time, giving meaning to self and life, freedom in performing the duties and having control over self and environment. One of the participants noted in this regard: *“When the patient’s adherence to the treatment plan is with his or her own will and without outside control, they gain an understanding of the benefits of treatment over time and if this feeling is supported, it’ll improve their ability to develop the belief that they can control their life events”* (P10).

### *Time dependence*

Commitment is a concept focused on patient-centered care over time. In this regard, a participant stated: *“When the content of the training is different from the patient’s culture, he or she may follow it in the early stages, but stability isn’t maintained over time. What is defined as a commitment to treatment is the sense of responsibility that most patients get after active participation over time”* (P8).

### *Active effort to deal with challenges in order to recover*

Committed people have a belief system that diminishes the perceived menace of any stressful life event, leading to remaining safe in stressful and challenging situations. A respondent stated: *“Commitment is an active and dynamic relationship in which the patient and the treatment team continue to control the disease and the effectiveness of treatment, and this relationship helps them to overcome all the problems and challenges that may occur during a person’s involvement in heart disease.”* (P13).

## **Discussion**

Analyzing the participants’ experiences and understanding showed that commitment to the CR is a dynamic and complex concept with four main aspects and results in stable behavior, prevention of inconsistent behaviors, and the achievement of effective care. The commitment includes cognitive<sup>[17]</sup> and attitudinal<sup>[18]</sup> dimensions that lead patients to search for more understanding and acceptance of the condition and follow medical instructions. The findings of this aspect focused on loyalty and internal obligation to adhere to the treatment plan and accept the

disease and treatment. Yuan has identified commitment as the act or process of building trust or voluntary obligation to maintain a goal.<sup>[9]</sup> In Meeker and Ghahnaviyeh’s studies, commitment to treatment has been introduced as motivation and internal obligation to recover.<sup>[19,20]</sup> Therefore, educating the patient to adapt to the disease and treatment is one of the essential tasks of the treatment team to improve the commitment to treatment.

The attitudinal-behavioral aspect of commitment to CR included three main areas. The first aspect was building and maintaining interpersonal relationships for the proper implementation of the treatment plan. Commitment has been introduced as the main reason for the formation and development of interpersonal relationships in society.<sup>[21]</sup> Commitment is a behavioral factor that seeks to maintain a long-term relationship between the two parties since, if one or both parties feel that the relationship is not profitable, the commitment will not occur.<sup>[22]</sup> Commitment to treatment is a form of a desire to have an interpersonal relationship.<sup>[23]</sup> Accordingly, taking into account participatory educational approaches with the presence of the caregivers and families and the use of telephone follow-up programs after discharge will help strengthen the therapeutic relationships and maintain those relationships.

The second and third aspects encompassed the stability and continuity of behavior and active follow-up to adhere to the treatment plan. Formation of the commitment to a therapeutic plan between a nurse and a patient would help identify the patients’ needs, deliver an effective training program, take the patients’ background into account in preparing the care program, and improve satisfaction and consistency of healthcare behaviors.<sup>[24]</sup> Continuity of behavior is another attribute of commitment that has been defined in the literature as a degree of obligation to have consistent behaviors formed between the patient and caregiver following the creation of the trust, moral obligation, volunteer obligation to maintain the goal and an obligation to the behaviors that result in an active follow-up to adhere to the treatment plan.<sup>[25]</sup> Therefore, the formation of committed behaviors in the patient is time-dependent, and the nursing managers are required to take steps to evaluate the training provided to the patient and family over time while implementing commitment-based adherence interventions.

The third part of the data is the attitudinal-emotional aspect of CR. The first area of this aspect was the desire to continue and follow the treatment plan. Commitment is an attitude that reflects a desire to accept and continue the action, which gives a person a sense of responsibility.<sup>[26]</sup> Individual commitment is a strong attachment or strong personal dedication to perform a chain of activities without retreating from a decision or action, a kind of attraction and desire to start and continue a therapeutic activity.<sup>[8]</sup>

The second area of this aspect was the sense of belonging and dependence on individuals, goals, and performance.

In this regard, in Jaros's study, commitment includes three aspects: (1) Affective commitment, including the individual's affective attachment to the group and the desire to continue the activity. (2) Continuance commitment, including the individual's psychological attachment to the group and activity. (3) Normative commitment, the sense of duty to continue the collaboration.<sup>[26]</sup> Commitment is a relationship with a multidimensional construct with separate components, including (a) psychological dependence of the relationship, (b) the long-term orientation of relationships, and (c) the intention to continue the relationship.<sup>[27]</sup> Accordingly, in order to strengthen this aspect of commitment to CR, various measures, such as building trust between the patient and the therapist, developing regular follow-up and training programs, are implemented by treatment centers.

The final part of the findings is the motivational aspect of CR, which includes five main areas. The first area is the responsibility for disease and treatment. Commitment is realized when a person feels responsible for his or her actions and behavior.<sup>[18]</sup> The most important factors influencing commitment include a person's motivation and abilities, productivity, matching commitments with individual values, commitment clarity, self-importance, and responsibility.<sup>[24]</sup> Similarly, Jaros perceives commitment as a desire to accept and continue the action and to be responsible.<sup>[26]</sup> Commitment is a sense of responsibility that individuals feel for each other in interpersonal relationships that gives them a new impetus to ensure that they will not relinquish their goals facing any issue or problem.<sup>[28]</sup> Involving the patient in setting goals and using motivational promotion techniques are among the interventions that need to be used in CR to promote patient responsibility.<sup>[6]</sup>

The second area of this aspect was to respect the independence for the management of treatment programs. Commitment includes independence in performing purposeful action, and therefore, the result is desirable and visible.<sup>[9]</sup> The third area was the sense of having control over physical and mental conditions. Commitment is a sense of control over the relationships in which individuals take advantage to achieve their goals.<sup>[23]</sup> Commitment has general effects on an individual's behavior leading to the tremendous effort and willingness to maintain relationships, better adapt to the situation, and have control over the general condition of life.<sup>[29]</sup>

Dependence on time was the fourth area of this aspect. In order to create a commitment, the patient needs to be considered an independent human being; and in providing care, his/her background should be taken into account, and adequate time ought to be allocated to properly recognize and meet his/her needs.<sup>[24]</sup> Commitment requires focused and consistent behaviors, and the formation of adherence, which requires consistency in behavior and shows itself best over time, leads to the rejection and elimination of inconsistent behaviors.<sup>[30]</sup> A sense of commitment leads to a person's engagement to act over time and the desire to keep in touch until the goal is achieved.<sup>[31]</sup>

The final area of this aspect is the active effort to encounter the challenges of recovery. In this regard, commitment has been introduced as the ability to control the affairs and circumstances that help individuals face the challenges of illness.<sup>[32]</sup> Committed individuals have more control over the events around them and view all life changes as natural challenges, a motivation for progress, and a threat to life.<sup>[33]</sup> Therefore, to strengthen the motivational aspect of commitment to CR, psychological interventions, including training sessions on stress and time management, and interventions to strengthen the patient and the family's ability to encounter the illness challenges should be taken into account. The unwillingness of some participants to attend the interview is one of the limitations of this qualitative study. Furthermore, in the interviews, the participants might have omitted some parts of their answers due to the fear of exposure to their statements. Therefore, there is the probability that they may have censored some parts of their statements. In the present study, the attribute of commitment to CR is a concept with a dynamic framework that consists of four aspects: attitudinal-cognitive, attitudinal-behavioral, attitudinal-affective, and motivational, which help to achieve therapeutic goals by creating a purposeful relationship between the patient and family caregiver. In this regard, the specialists of the CR team have a role in developing the patients' and health workers' knowledge and practice to improve the commitment to the therapeutic plan. One of the limitations of this study was interviewing some elderly patients and families due to insufficient time and illiteracy. Furthermore, another limitation of this study, similar to other qualitative studies, is related to the generalizability of the findings to other environments. The present study attempted to make the findings more generalizable by ensuring maximum variation in selecting the participants.

## Conclusion

Commitment to CR is a multidimensional concept formed through a collaboration between the patient, the family, and the rehabilitation team. Therefore, the patient's efficient commitment to CR improves the physical and psychological condition and prevents CR abandonment. Understanding the different aspects of commitment to CR is essential for the treatment team members, particularly nurses, as coordinators. By recognizing the cognitive, behavioral, emotional, and motivational aspects of commitment to CR, the rehabilitation team members can pay attention to the mentioned aspects in designing and implementing educational and supportive programs to promote patient and family commitment.

It is suggested that in future studies, with the help of CR commitment features obtained from this study, the design and psychometrics of cardiac rehabilitation commitment assessment tools be performed to evaluate the effectiveness of educational-supportive programs on promoting commitment.

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## Conflicts of interest

Nothing to declare.

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