

Research Article**Exploring the process of threat appraisal in patients' offspring with a history of myocardial infarction: A qualitative directed content analysis****Hashemifard Tahere¹, Vaezi Ali Akbar², Mazloomi Seyed Saeed³,****Kamalikhah Tahere⁴, Fallahzade Hossein⁵,****Haerian Ahmad⁶ and Baghianimoghadam Mohamadhossein*⁷**¹Department of Health Education and Promotion,

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Aim: In this research, the author decided to detect risk factors and to clear ambiguity through conducting a qualitative research method from the experiences of those people who were at risk of such disease.

Background: Global epidemic of non-communicable diseases, such as cardiovascular disease (CVD) demonstrate a major challenge of health. The evidence reveals that the changeable risk factors and unhealthy lifestyle behaviors act as the most important determinants of disability and mortality of CVD.

Methods: The qualitative study by directed content analysis method was performed. Eighteen children (over 18 years) with parents having the history of myocardial infarction took part in this study, selected through purposive sampling with the highest diversity. Data collection were carried out through deep and semi structure interviews based on Protection Motivation Theory (PMT) from March to November 2015. Data were further analyzed using Lundman and Graneheim methods. Interviews with children were performed in a relax and calm situation while the place and time were agreed on.

Results: During content analysis process 140 codes were extracted. They were classified based on their proportion and similarity. In general, 4 categories were emerged from the data including; (1) poor life style as a Predisposing factor of heart disease (2) going down quality of life with four subcategories and (3,4) extrinsic rewards and intrinsic rewards.

Conclusion: The findings in the present study depicted that perceived rewards of risky behaviors in younger participants was high. On the other hand, as the findings showed that their perceived susceptibility with respect to risky behavior was low. Thus, on the basis of above mentioned findings, reducing the perceived rewards and increasing in the perceived threat (susceptibility and severity) with aim of doing HD preventive behaviors and reduce maladaptive responses could be considered as a principle in educational program.

Keywords: Directed content analysis, Maladaptive coping modes, Heart disease

INTRODUCTION

Global epidemic of non-communicable diseases, such as cardiovascular disease (CVD) demonstrate a major challenge of health and is cause of over half of the global burden of disease [1]. It is said that 17.5 million deaths in the world and 47% of deaths in Iran are resulted from this disease (CVD) [2]. Unfortunately in recent years the age of onset of the disease has decreased [3]. The epidemiological evidence reveals that family history of heart disease (HD) is an independent risk factor for HD. Having one first-degree relative with a patient suffering from HD makes risk of HD twice compared to the people with no family history [4]. The evidence reveals that the changeable risk factors and unhealthy lifestyle behaviors act as the most important determinants of disability and mortality of CVD [5]. Protection Motivation Theory (PMT) is one of the theories that for understanding and predicting intention and health behaviors focuses on cognitive factors influencing decisions that individual make to protect her/him against the traumatic events cope with such events [6]. PMT includes two processes of threat appraisal and coping appraisal and a fear construct that the output of two processes is protection motivation and behavior [7].

Threat appraisal is measurement of risk severity and vulnerability to it and includes three scales of perceived rewards, perceived susceptibility and perceived severity [8]. Different studies were used the qualitative methods to investigate the perception and experiences of participants about risk factors of HD [9,10]. In order to determine and conceive the different dimensions and factors which affect the phenomenon social process of "preventive behaviors of people at risk of getting HD", the methods that can detect concrete concepts from abstract concepts are needed. The recognition of the these processes in order to gather new knowledge and insights and to reload people' behavior whose parents had myocardial infarction since they are more at risk of the so called disease, a qualitative research seems to be necessary, until their alive experiences can

be defied through an inductive approach, and also through a practical and efficient educational program; practical guidelines provide for their required activities.

MATERIAL AND METHODS

The present study was performed on the basis of PMT and it was a directed content analysis qualitative research. The subjects of the study included 18 children whose parents were hospitalized in hospitals affiliated to Shiraz University of Medical Sciences, due to their myocardial infarction. The criteria for the subjects to be included in the study were the ones over 18 years old who have at least one parent with the history of MI, have the ability to be interviewed and have at least one other risk factor for HD. Also exclusion factors consisted of lack of interest to take part in the study and have the history of HD. The sampling was performed in different days of the week in several hours. The instruments to collect information were both deep and semi-structured interviews in various based on PMT in places such as health centers, park and hospitals. The data collection started from from March to November 2015. The sampling was carried out through purposive sampling and continued until data saturation obtained [11].

The researcher carried out interviews in a private and quiet setting for 30 to 65 minutes after explaining the objectives of the study. Interview questions were developed based on PMT as: "How is the chance of the younger members of your family to get HD?" "The incidence of HD in your later life and your family members will have what results?" "What are the benefits of not doing HD preventive behaviors for you and your family?" The researcher tried to keep the interview to the point and apply minimal interference in the interview trend. Content analysis were done based on Graneheim and Lundman's method. In order to reach a general perception, the transcript of the recored interviews were prepared on the same day and reviewed several times. Based on the concepts behind each words and sentences, they were labeled by codes. After that the codes were

classified based on their similarities and differences, at last the theme of the study was introduced through comparing different classes with a deep and careful reflection. withdrawal from the study at any time, voluntariness of participation in the research, confidentiality of the information as well as legal permission and Helsinki codes were observed [12]. Finally the ethics committee of Shahid Sadoughi University of Medical Sciences, Yazd, Iran approved the study and oral consent was obtained (Code: 15646).

Guba and Lincoln's precision criteria in qualitative research were used to ensure the reliability and accuracy of the data [13].Credibility provided by prolonged engagement of the researcher with the participants of the study and allocating enough time for data collection, Conformability provided by observing revision and dependability provided by confirmation of the extracted codes to other participants. In order to

transfer the findings of the study, the data were prepared clearly in written form and the files were saved in order to facilitate follow up by others. Also transferability of the findings of the study provided by sampling technique with maximum diversity.

RESULTS

In sum, 18 children whose parents were among patients with the history of myocardial infarction were interviewed and based on the interviews data saturation, information richness and data replication were obtained. The participants were at the age range 21-40 years and the mean age was 27±88 years. From the qualitative analysis and comparison of data, 10 subcategories and four categories were elicited including poor life style as a Predisposing factor of heart disease, going down quality of life, imposing cost to families with heart disease and internal or external reward.

Theme	Perceived Susceptibility	Perceived Severity	Perceived Rewards	
Categories	Poor Lifestyle as a predisposing factor of HD	Going down Quality of life / imposing cost to families with HD	Extrinsic Rewards	intrinsic Rewards
				Satisfaction sense with not limiting yourself by performing HD preventive behaviors
Subcategories	The way a person live as a predisposing factor of HD	Incidence of Physical problems and going down quality of life with HD	Save money and time by not performing HD preventive behaviors	
	Insufficient physical activity as a cause of HD	Incidence of Psychological problems and going down quality of life with HD		
	Poor diet as a cause of HD	Necessity of continuing medical care with HD /imposing high cost to families		
	Smoking as a cause of HD	Going down family members quality of life with Parents HD		

Table 1: The process of categories formation

In figure 1 and 2 the processes of codes formation and also subcategories have been displayed.

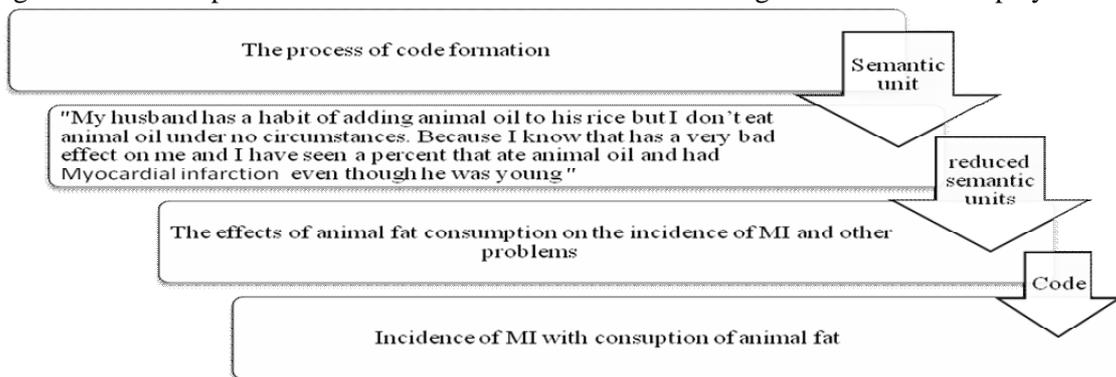


Figure1: process of code formation

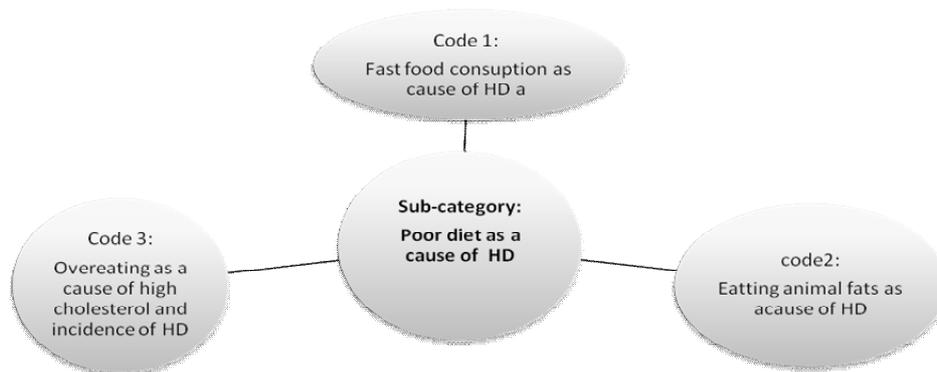


Figure2: The process of subcategories formation

3.1. Poor lifestyle as a predisposing factor of HD

Lifestyle includes activities and attitudes that can affect a person's health. Lifestyle modification through smoking cessation, physical activity and sport, weight control and dietary modification to reduce morbidity and mortality of CVDs in primordial, Primary and secondary prevention is very important [14].

3.1.1. The way a person live as a predisposing factor of HD:

Participants believed that modernization of life, keep distance from the nature and having monotonous life are rout of cardiovascular problems. A bout his parents who were involved in heart disease, a thirty-three year-old man stated that: "... My parents both in their maiden and perhaps up to the age of 50 years always used even the least opportunity for going to nature until my brother and I should be prepared for entrance exam. They stopped going to nature because of us and from that point on these disease came to them... ."

3.1.2. Insufficient physical activity as a cause of HD:

The number of participants although, believed not doing exercise and sedentary lifestyle can be effective in developing HD but did not care much about it. Regarding this, a twenty one-year-old woman elaborated her mother'heart disease as:

"... I am part of those people who don't take action until bad thing happens for them. Now also despite the fact that my mum had a stroke at an early age and I know that I myself might develop this disease, do not exercise at all.... ."

3.1.3. Poor diet as a cause of HD:

All participants believed that solid oil and continued consumption of fast food, overeating and overweight as well as high-calorie foods consumption have major impact in developing HD, but some of them even being aware of it did not feel threatened. The participant (no.8), twenty-five-year-old girl explained about his father as:

"....My father has a habit of adding animal oil to his rice but I don't eat animal oil under no circumstances. Because I know that has a very bad effect on me and I have seen a percent that ate animal oil and had Myocardial infarction (MI) even though he was young... ."

3.1.4. Smoking as a cause of HD:

In the present study, however smoking participants were aware of cigarette consequences such as dyspnea, blood viscosity, thrombosis, stroke and many other diseases but their sensitivity about these consequences was low. The participant (no.13), a twenty-one-year boy, elaborated his experience concerning smoking as:

"...It is about 5 years that I smoke hobble babble, a period of time my consumption was too much, and with a little movement I panted and my heart was in pressure and my blood had become viscous... ."

3.2. Going down Quality of life / imposing cost to families with HD

Quality of life in patients with a history of MI had been faced with challenge in all aspects that these limitations and problems are divided in to 4 sub-categories from the perspective of their children.

3.2.1. Incidence of Physical problems and going down quality of life with HD: the majority of participants based on their experience believed in physical activity limitation subsequent to HD and MI. In this respect, one of the participants says: A twenty-five-year girl, explained her mother's disease and the problems she encountered after the disease as follow:

"...My mother after illness cannot even pick up a two-pound object; also she must walk too slowly...."

Other problems that were mentioned in this context were dietary restrictions and complications of cardiac medications.

3.2.2. Incidence of Psychological problems and going down quality of life with HD:

Other created problems for parents with MI from the perspective of their offspring was the incidence of Psychological problems which participants noted issues such as social isolation, being impatient, demoralization, reduced life expectancy, depression, suffering from others compassion and hypersensitivity after beginning of the disease. The participant (no.10) was a thirty three-year-old man who described his parents' mental problems encountered after their disease.

"...I remember before the effects of HD in my parents to be created they were very socializing after that little by little these diseases came to them and their commuting got limited... ."

3.2.3. Necessity of continuing medical care with HD / imposing high cost to families: Patients' children mentioned necessity of continuing medical care with HD and imposing high cost to families as one of other problems of HD. A twenty-five year-old woman explained her mother's physical problems and limitations after her disease as: "...Mom must test once a week for controlling her blood viscosity...."

3.2.4. Going down family members' quality of life with Parents HD: In this regard, many participants stated items such as discomfort for family members with the presence of HD in parent, limited social connections and raised the continuing concern of the patient's health status. A thirty-nine-old

man explained about the effect of his mother's disease on family life as follows:

"...Now that my mother has HD when I saw her Dyspnea while walking two steps and doesn't adhere to his diet, I get upset and torture... ."

3.3. intrinsic rewards

The reward refers to the perceived benefits of maladaptive behavior. With the increase in reward, the probability of maladaptive behavior increases [15].

3-3.1. Satisfaction sense with not limiting yourself by performing HD preventive behaviors: In this study, the number of participants especially younger one believed that by performing behaviors such as dietary adherence, daily walking, doing regular check up to understand the health state, avoidance of tobacco smoking impose restrictions on them thus preferred not to limit themselves and enjoy their lives instead of adherence to these practices.

A twenty-eight-old man described his unstability on healthy behaviours as: "...When bad things happen to me in life and nervous pressure come to me I never impress, I try to relax myself with smoking...."

3.4. Extrinsic rewards

3.4.1. Save money and time by not performing HD preventive behaviors:

A twenty-one-year old woman explained that she did not follow the preventive behaviors from heart disease as follow: "...I prefer to do overdue chores rather than doing exercise...."

DISCUSSION

The threat appraisal process of PMT was used to identify the results of this research. This process has the constructs such as perceived susceptibility, perceived severity and perceived rewards.

Category associated with perceived susceptibility is Poor Lifestyle as a predisposing factor of HD. Perceived susceptibility points to person belief about possibility of developing a disease [16]. A cohort study with aim of estimate ratio of incidence of the coronary disease that was conducted in women 27-44 years old who were followed over 20-year indicated that primary prevention through sustaining a healthy lifestyle

and can significantly reduce burden of this disease [17].

The findings of this study reflect this fact that most people were aware of the risk factor of HD and believed that modernization of life, insufficient physical activity, poor diet and smoking have crucial role in developing HD.

Since most of the participants had academic education this finding is not far-fetched. But those participants who were younger, their perceived susceptibility to HD development was low and felt more barriers such as time constrains, high costs, laziness and impatience in relation to performing prevention of HD behaviors. These people believed that until not to be patient and don't experience disease conditions wouldn't think about disease prevention. It has been shown that among people at risk of familial diabetes, having family members with coronary HD or stroke significantly has effect on risk perception and concern of regarded people [18]. Similar to the results of present study, Ghahroudi and colleagues also displayed that there is significant correlation between age and perceived risk (perceived susceptibility and severity) and its reason is that with increasing in age, all people with different academic levels, backgrounds and lifestyles, consider themselves at more risk at developing various diseases and even in many cases being patient attributed to age [19]. while other studies didn't find a significant relationship between age and perceived risk of HD [20,21]. A study conducted by MacDonell indicates a negative correlation between perceived susceptibility and intention and committing risky behaviors [22]. Category associated with perceived severity construct is Going down Quality of life and imposing cost to families with HD. Feelings about seriousness of developing a disease include evaluation of medical, clinical and social outcome refers to the concept of perceived severity [23]. It has been shown that heart patients due to chronic disease nature and the problems arising from it don't have satisfactory quality of life and different limitations that HD provide for patients, all reduce the quality of life [24]. Participants in

this research, especially educated one, since have been witness of created problems and limitations after their parents' MI, had acceptable perceived severity of HD and considered incidence of physical and psychological problems, dependence on family in everyday chores, necessity of continuous medical care and imposing high costs on the family as the consequences of HD. The relationship between level of education and perceived severity has been confirmed in other studies [25,26]. Study conducted by Xiao also showed that the perceived severity positively correlate with motivation and health behavior [27]. Therefore, the results suggest that for performing HD preventive behaviors, behavioral change strategies should be based on threat appraisal factors (perceived susceptibility and severity) which sawant study has mentioned this point [28].

Category associated with perceived reward construct includes extrinsic and intrinsic rewards. Individual evaluation of extrinsic and intrinsic rewards associated with unhealthy behavior is called perceived rewards [29]. The perceived rewards of risky behavior increase the probability of doing it [30]. Some participants in present study especially younger one had high perception of rewards related to risky behaviors such as tobacco smoking, lack of doing physical activity and lack of doing regular check up to inform their health status and achievement to enjoyment and relaxation and also economizing on money and time were mentioned as a reward of such inconsistent. Consistent to this research, Verhoeven in his study showed that people for enjoying from a special situation consume junk food and unhealthy foods that must be considered in health interventions to reduce the incentive to consume this unhealthy food [31]. In terms of tobacco smoking studies also displayed that people smoke to relieve fatigue and stress and also for pleasure [32,33]. Perceived rewards of smoking behavior particularly intrinsic rewards of smoking behavior is positively associated with intention and smoking behavior [34]. Overall, conducted studies show a significant correlation between perceived rewards and protection motivation [27,35,36]. In order to promote greater

adherence to a healthy diet and reduce intake of processed and convenient foods, strategies with the aim of taste improvement of low-fat diets and increase in nutrition awareness can be effective and in terms of smoking avoidance, attention and eliminate the main reason of smoking tendency and implementation of life skills training programs can have an important role.

CONCLUSIONS

Obtained findings from this study indicated that perceived reward of risky behaviors) e.g. achieving calmness, time and money saving, enjoying the flavor and taste of foodstuffs, and ...) in younger participants was high and perceived susceptibility was low. The functional significance of these results was that since people's perception of HD and its causes, was an important factor in their tendency to perform HD preventive behaviors, thus reducing the perceived rewards and increase in the perceived threat (susceptibility and severity) with aim of doing HD preventive behaviors and reduce maladaptive responses could be considered as a principle in education. According to this study is conducted with content analysis approach to explain the experiences of children with parents of myocardial infarction, Therefore, it is recommended that the experiences of the patients directly be examined in future researches.

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CONFLICT OF INTEREST

No conflict of interest would be declared.

AUTHORS' CONTRIBUTIONS

All the six authors read the final manuscript and approved it and were contributed to this study equally.

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