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Original article

Predictors of Illness Perception in Patients Undergoing Coronary Artery Bypass Surgery

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ABSTRACT

Introduction: Cognitive factors such as individual perceptions and beliefs about their illness can play an important role in individuals adaptation style with their illness. The purpose of this study was to determine the predictors of illness perception in patients undergoing coronary artery bypass surgery (CABG). **Methods:** In this cross-sectional study, 217 patients who had CABG for over 6 months were selected by systematic random sampling method and by using a questionnaire consisting of two sections including socio-demographic and illness perception instrument. Data were analyzed using descriptive statistics and inferential statistics (Kruskal-Wallis and Mann-Whitney test). Also we used multiple logistic regressions for detecting predictor factors. **Results:** The mean age of samples was 58.70 ± 9.46. The majority of them were male (61.3%), married (83.4%), housewife (34.1%), The education level of majority was high school diploma (44.2%). The majority had desirable illness perception (93.5%). The mean score of total illness perception was 83.53 ± 5.96 and mean scores of its domain including cause, treatment and control, consequence and Timeline were 32.36 ± 3.6,28.07 ± 3.68,17.54 ± 2.26 and 5.57 ± 2.07, respectively. Multiple logistic regressions results showed about cause domain only monthly income (P<0.034, OR =0.290) and about treatment and control only age (P< 0.014, OR =2.217) were predictor factors. **Conclusion:** Fortunately in this study the majority of samples had desirable illness perception. Illness perception can affect the patients' adaptation with their illness and their treatment adherence after CABG. Thus, interventions to promote understanding of the disease appear to be necessary.

Key words: coronary artery bypasses Illness, perception, Patients.

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INTRODUCTION

Mechanical life transformation has raised coronary artery disease.[1,2] The studies have depicted that 10 million people are suffering from this disease worldwide.[3] Also according to the American Heart Association Report, 1.2 million Americans are afflicted by myocardial infarction and 25% of them die in the emergency ward.[4] In our country, this disease is taken of the most prevalent mortality causes, too and annually around 3.6 million cardiovascular sufferers are only hospitalized in the hospitals covered by the Medical Education, Treatment and Health Ministry, to whom 46% deaths are attributed.[1]

Getting affected by this disease can bring about hazardous complications such as myocardial infarction.[5,6] As a symptoms controller, pharmacotherapy can decrease the complications prevalence.[7] But in some cases, reducing the symptoms of the disease with the help of non-surgical intervention is not possible.[8] Due to this disease affliction raise, Coronary Artery Bypass Graft (CABG) is increasing.[9,10] CABG is a method that can postpone Coronary artery symptoms aggravation or lower the symptoms worsening speed.[11,12] Most of the patients assume that after CABG surgery, they get completely treated and are free from observing medical and care instructions.[13,14] While this surgery cannot absolutely treat its outbreak cause and symptoms aggravation.[11,15] Thus it is imperative to observe post-surgery care instructions life time.[8,13,15,16] Several studies derived results imply that observing medical and care instructions and following healthy life style in such patients is very poor after surgery.[13,15] It seems that if these patients reached an accurate perception of their condition, it would help them to observe more and prevent the complications

exacerbation.[16-20] Thus at least 6 months after the operation, this perception of the disease that the post-surgery complications got declined and the patient returned to their normal life can help plan accurately to reduce the disease symptoms.

MATERIALS AND METHODS

The current research as a cross-sectional study of descriptive analytical type, where the community consists of the patients whose CABG surgery in one of Rasht educational hospitals passed at least 6 months. This study samples number as 167 has been set referring to the Kotsis study[21] and then for each variable, 5 individuals have been added to the samples and ultimately, the sample size has been defined 217 subjects .Sampling has been performed using systematic random sampling method .For this purpose, in the recorded files in the research center educational hospital archive , the names of the patients with minimum 6 months and maximum 1 year passing their CABG have been identified and number 2 has been selected as the fixed one using the random table and the sample has been determined applying regular interval .Then the contact number in their file has been addressed .The inclusion criteria covered their CABG passing at least 6 months, free from mental disorders, no record of taking drugs affecting psychiatric system both of which have been according to medical and CABG file contents for the first time and their oral consent. In this regard, 453 files have been dealt with and their contact numbers have been recorded .The tool used to achieve the objective has been a questionnaire .

The tool consisted of two parts as the patients' personal and social traits and the Mann-Whitney specific cardiac illness perception tool (1996). This tool has been made up of 4 areas of the disease cause perception (10 items), disease duration (2 items), disease induced adverse events (6 items) and disease control and treatment (7 items). The tool scoring has been based on Likert scale as "absolutely disagree" to "absolutely agree". Getting score higher than the mean in each area has signified higher perception of the disease.[22,23] To define the tool's validity, it has been handed to 12 nursing college faculty members and its CVI and CVR scores have been gained 84.9 and 78.3%. Re-test has been applied to define its re-

Table 1: The regression co-efficient of the disease cause perception area predictors

Confidence for odd ratio interval 90%		Odd ratio	Significance level	S.D	Beta regression coefficient	Predictors of disease cause perception area
Upper limit	Lower limit					
1/594	0/178	0/532	0/260	0/559	-0/630	Income <200 US$ monthly
0/911	0/092	0/290	0/034	0/585	-1/239/	Income range from 200 – 350 US$ monthly
Reference						Income > 351 US$ monthly

Table 2: The regression coefficient of the disease treatment & control perception area predictors

Confidence for odd ratio interval 95%		Odd ratio	Significance level	S.D	Beta regression coefficient	Predictors of disease cure and control perception area
Upper limit	Lower limit					
2.832	0.263	0.864	0.809	0.606	-0.147	Below 45yrs
4.176	1/177	2.217	0.014	0.323	0.796	45-64years
			Reference			Above 65 years

liability and the correlation between the two steps has been obtained 96.3% with 15 days interval.

The current research has been recorded and verified by Guilan Medical Science University Research and Technology Department Ethics Committee under the No. 29100 29704.

To collect data, the researcher contacted the patients through their medical file with at least 6 months passing their surgery and invited them to participate in the study while informing them about the study objectives. Out of 453 calls, 208 individuals didn't reply, 10 died, 11 were unable to reply due to lack of sufficient alertness, 2 were hospitalized and 5 were non-Persian speakers. This way, 217 telephone calls were contacted to complete the tool. The findings have been analyzed using SPSS ver. 16 and the descriptive and inferential statistics tests. First off, via Kolmorgoroff-Smirnoff test, it has been determined that the data didn't follow a normal distribution. Consequently, Mann-Whitney U and Kruskal-Wallis tests have been employed for statistical analysis. To determine the disease perception predictors in the four aforementioned areas, among all variables with significance less than 0.2%, a linear meaningful relationship has been seen with 4 disease perception areas imported in the multi logistic regression model by Backward : LR method and then analyzed .

RESULTS

The present study results suggested that the majority of the study units have been in the age range 45-64 yrs (65.9%), the min age of 31 and max 80 yrs. The majority of the samples have been men (61.3%) and married (83.4%), with under-diploma education (44.2%), housewives (34.1%), city dwellers (62.2%) and having the living conditions with their spouse (83.4%). As well as, the majority of the study units have had no history of family coronary artery disease (50.7%), lacked history of hypertension (65%) and no history of chronic diseases (57.6%).

In addition, the study findings depicted the mean disease perception score as 83.53 ± 5.96.The mean and standard deviation of the disease cause perception has been 32.3 ± 63.6, the disease control and treatment as 28.07 ± 3.68, the disease induced complications 17.54 ± 2.26 and the disease duration 5.57 ± 2.07, respectively. Regarding the data lacking normal distribution, Mann-Whitney test revealed that there is no meaningful statistical relationship between the variables as age, gender, marital status, education, job, living conditions, income, family history of coronary artery disease, hypertension and other chronic diseases and the illnees perception in the 4 areas. However, according to the Kruskal-Wallis test results, there is a significant relationship between the variables known as income and age and the disease control and treatment (P>0.006 & P>0.009). This test has led to no other meaningful relationship with other areas.

Importing the variables having relationship with 4 areas of the illness perception with significance level 0.2%, it has been outlined by the logistic regression model via Backward LR method. In the disease cause area, the income ranging 200 - 350 US$ monthly (Table 1) and in the disease control and treatment area, the age below 45 years. (Table 2) were the predicting variables. In the disease induced adverse events and disease suffering duration, none of the variables with significant relationship has predicted these areas.

DISCUSSION AND CONCLUSION

This study derived results support that the majority of the study units have acquired score higher than the mean in the disease perception and also its areas. The research by Yaraghchi *et al*. titled "CABG Patients' Disease Perception & Life Quality Relationship" conducted in Tehran displayed a favorable disease perception in these patients.[20] It seems that given the point that the patients undergoing heart surgery have been engaged in coronary artery problem long before the operation and hospitalized several times and or referred to the medical offices, so they reached an appropriate perception of their disease. Of course it is worth mentioning that the tool applied to measure the disease perception in the current survey has generally been the specific cardiac illness perception-tool and maybe this issue hasn't been exclusively the patients' perception about their disease situation after surgery.

About the relationship between the personal and social traits and also the disease related variables and the areas as the disease perception ones, the results merely depicted the significant relationship between the two

variables, namely, income and age and disease control and treatment area. This finding is compatible with that of the research by Stafford *et al*.[24] With respect to this point that suffering from coronary artery disease has been a chronic one whose symptoms get exacerbated by aging and lead the patient to frequently refer to treatment centers and encounter the treatment and care service providers .This matter can probably be under the effect of this point that income raise is likely itself influenced by the units education and literacy and as this variable increases, the perception of the disease control and treatment gets promoted .

Modeling with the use of logistic regression also showed that in the disease control and treatment perception area, the age below 65 has been the predictor of lower disease perception .In the research by Stafford *et al*., it has also been shown that age has played the role as one of the predictors of this disease perception area.[24] Besides, in the research by Ross *et al*., it has been spotted that the elderly have higher perception of the disease control and treatment compared with the youth.[25] It seems that as the patient gets more engaged in their malady conditions and further refer to the treatment centers, their perception increases.

In addition, the monthly income lower than 350 US $ monthly is the disease cause predictor, so that by earning raise, the perception improves. About this finding, maybe we can state that the elderly get more assured as their earning potential goes up and it will be possible for them to better analyze their disease conditions and probably this issue has resulted in better perception in the disease cause area with income raise. Moreover, regarding the private centers associated treatment service provision rate being high and the public centers being crowded, it is likely that as income gets more, referring to the treatment centers and as a result, knowledge about the disease cause increases. And related to the limitations of this research, we can point out data collection via phone call interview.

Concerning lack of the post-heart surgery rehabilitation service providing systems at the data collection center and the patients not being able to refer after several moths passing their operation, the data have been collected by phone contact and it may have been impossible to obtain lots of real data.

Regarding the study suggested that the majority of the patients have high perception of their disease, this finding can be employed to plan effective rehabilitation cares influencing their life style and observing their treatment and care instructions.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this manuscript.

ABBREVIATIONS USED

CABG: Coronary Artery Bypass Graft; CVR: Content Validity Ratio; CVI: Content Validity Index

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