

The Relationship between Stressful Personality Environmental Factors, Coronary Heart Disease Type

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ABSTRACT

The present study seeks to investigate the relationship between stressful environmental factors, coronary artery disease and personality traits. The subjects of the study comprised all patients with coronary artery disease who were admitted to JavadAlaeme Heart Hospital between 1391 and 1392. Accordingly, 79 subjects were specified for sampling based on the Krejcie and Morgan table. Furthermore, the Eysenck questionnaire containing 57 questions was utilized for data collection. In this study, the correlation coefficient was used to analyze and interpret the obtained data. The findings of the study revealed there was a correlation between introversion and coronary heart disease and also between the stressful environmental factors and the disease. This is an exploratory research applying the correlation method.

KEY TERMS: Introversion – Coronary Heart Disease – Stressful Environmental Factors

INTRODUCTION

A coronary heart disease is one of the most prevalent kinds of cardiovascular diseases which causes that many people lose their lives through its development or they prone to different kind of chronic debilities and they bear a heavy damage with spending a heavy costs.

This disease has more prevalent in recent decades with modernize a human community and changing a life style. Today cardiologists relating the causes and corporal factors to this disease's infection that high blood pressure, high level of blood cholesterol, diabetes and fatness are among considerable risk elements which has a positive relationship with coronary heart disease. However above mentioned factors have not a determinant role in disease's infection alone. Studies show that some psychological cognitive variables have an interact with above mentioned risk factors and build most benignant conditions.

The most important of these factors which many researches carried out on it till now, are stress and character. Based on it, many researches have been done for identifying those behavioral factors and traits which have a positive relationship with coronary heart disease infection and the effective role of stress and character type in disease's infection have been emphasized (psychological researches of course 8 number 1 and 2 summer84). The effective causes and factors in coronary heart disease infection have been considered in many researches. In most researches, more emphasis was on psychological factors such as blood lipid, blood pressure, body mass index, diabetes, thyroid and treats related to the health such as smoking, alcohol and such like have a role in heart. Friedman and Poznan initiate an extended effort about the effect of personality in heart diseases which ultimately conducted to detection of type A character. They believed that the important factor of heart disease's infection is type A character. This type of behaviors generally conduces to people's infection to the heart diseases. Heart diseases have correlation with a higher level of these reactions and chronic characteristics. One of the most important psychological items and concepts that disorder a people's operation in social, psychological and corporal or physiological domains is stress. This term which has entered from physics to psychology, assumes a psychological concept. Usually stress used for describe a negative reactions and emotions which accompany with challengeable or minatory situations. Also, sometimes those minatory situations are called stress. From Salie's aspect, «stress is an attitude which is exponent of an accessory syndromes that corresponds with all uncertain changes, influence on biological system. »

Coronary thrombosis imputes to the kind of disease which is result of stricture and blockage of coronary arterial branches that carrying the blood full of oxygen to the heart. The blood vessels tighten because of platelet which arise from kind of disease called Atherosclerosis (Coronary thrombosis). Blockage happens in cases that thrombus makes with bloods platelet or plaques, clog in artery and prevent the blood stream. Also high blood pressure raises chance of Coronary thrombosis that cause stricture and hardness of vessels. These conditions entail increasing the

risk of thrombosis and cause myocardial infection, but possibly individuals is genetically susceptible in having a more cardiovascular responses.

The harmful psychological stimulus, stress, acute anxiety, hate and anger can increase sodium exudation in kidney and hence cause dysfunction of cardiovascular. Stress effects on increasing the catecholamine and corticosteroid's exudation from endocrines and its possible that high level of these hormones in long term hit artery and heart aggravate atherosclerosis and result in high blood pressure and Coronary thrombosis. In this research the main matter will be this point that is there any relationship between stressful environmental factors of cardiovascular diseases and character type?

1-1: The Study Framework

1-1-1 Stress

It is a difficult and complex term and however this term is used highly, but still has not been identify precisely and broadly (Brown and Fost, 2000). In the other word, after passing three decades from research about stress phenomenon and exploratory description for ways of individuals against this phenomenon, still term of stress is used in different ways. Also its identification is difficult and full of problem hence Vinigohutes and Marsilision (1988) that all have consensus on it, stated that don't search it. Although, Salie (1980) known stress as body nonexclusive response toward each kind of damands(Casidi,1990; Davi and colleague,2000; according to Ivanwich,1990).

1-1-2 Type

It is called to classification of individuals in several groups that each class has special characteristics and there are different classifications for defining the type of individual's characters.

1-1-3 personality

It is called to the collection of corporal, mental and behavioral characteristics that differentiate everyone from the others (Ikinson, quotes Noori, 1998).

Character is defined as individual and partly constant patterns, opinions, emotions and performance (Hafman and colleague).

1-1-3-1 Introverted

Introverted individuals, pushing the life energy (libido) toward out of him/her and into external events, individuals and situations and introverted groups are highly affected by environmental forces and have self-confidence in a broad width of social situations (Young, 1927-according to Schults).

1-1-3-2 Introverted

Introverted individuals actuate the libido flow to inside. Introverted individuals are mostly foresight and introvert and stubborn against external influences. They have a less self-confidence in relation with others and in contrast with extroverted are less sociable (Young, 1927- according to Scholds).

1-3 Prior Research

In a research (Narimani Mahmood, Zahed Mostafa, Abas Abolghasem, 2009) the result of Pierson correlation index showed that correlation feeling ($r=0.22$) and character type ($r=-0.62$) has a meaningful relationship with health of individuals with cardiovascular diseases. ($P < 0.01$) Based on analytical results of regression of some variable, only the negative affection factor of D character type can envision the health of infected individuals to the cardiovascular. (Mental health bias- autumn 2009; 11(43P):22-213).

In other research (Pahlavian Ahmad, Gharakhani Mohsen, MahjubHosein) that has been done between feuding, character type and coronary vascular disease, showed that there is not a meaningful relationship between having A character type and coronary thrombosis infection, but there is a meaningful relationship between high feuding and coronary vascular disease (Scientific journal of Hamedan university of medical science and health care 2008; 15((serial 50)4):47-44).

In a research (Vafai Maryam, ZoljanahiEhda), results showed that D character type accompanied meaningfully with increasing the activity of behavioral presentational system in total sample and in subjects accompany with highest type D character. But type D character was not meaningfully accompany with reduction of behavioral system's activity in a total sample and in subject was not accompany with highest type D character (psychology periodical of Tabriz university, summer and autumn 2006;(2-3)1:144-123).

A research (Ahmadpur Mobarake Alireza, Ahadi Hasan, Mazaheri Mohamad Mahdi, Nafisi Gholamreza) was about building and finding a scale validity to evaluate type D character and its relationship with coronary diseases showed that the difference between number of normal individuals and heart diseases was meaningful(research and knowledge in practical psychology, summer 2007;(32)9:6037).

2-Conceptual Framework of Study

2-1 : Research hypotheses

Main hypothesis is:

There is a relationship between stressful environmental factors, heart coronary diseases and character type.

Hypotheses areas following:

- There is a relationship between extroverted character type and heart coronary diseases.
- There is a relationship between introverted character type and heart coronary diseases.
- There is a relationship between stressful environmental factors and heart coronary diseases.

3-MATERIALS AND METHODS

A current research method is investigation. In this study all of heart disease referred to Javadolaeme Cardiology Hospital during 2012-2013 considered as statistical community.

Also after evaluation of stressful environmental factors in patients, some factors such as age, work background, marriage conditions and gender will be considers.

In this research, a statistical community in considering a relationship between stressful environmental factors for cardiovascular diseases and character type (Eysenck introverted and extroverted) was consist of whole heart disease that referred to Javadolaeme Cardiology Hospital during 2012-2013 that their number was 100 individuals. In this research, Morgan table has been used for number of sample. Based on Morgan table, number of sample members identifies with concerning a number of statistical communities members (Momenimansoor2010). Based on this, the number of research sample is 79 individuals.

Character (Introverted and extroverted):

In this research, character is evaluate through adult special Eysenck character test which has 57 questions and introverted, extroverted, constant, no constant features induces through that, other point is that this test has Iran's norm.

In validity provision of questionnaire which has been used in this research, content validity is viewed. Content validity is kind of validity usually used for considering the building blocks of an instrumental questions concerning characters, abilities, knowledge and whatever is measurable. Validity in this research determined. For endure measurement Crohn's alpha has been used, and the extents higher than 0.7 are demonstrative of endure higher than variables.

The number 0.877 for all variables show that whole variables are in high level and acceptable.

For considering a variables relationships in descriptive part, a central average index and standard deviation has been used and, because the aim of research is considering the relationship between variables, in data analysis part, correlation index has been used and because variables are distance basis and numerical, so Pierson's correlation index and Regression's model have been used.

4-RESULTS

- There is a relationship between extroverted and heart coronary diseases.
- For testing this hypothesis, below statistical hypothesis propounds and concerns:

$$\begin{cases} H_0: \beta_1 = 0 \\ H_1: \beta_1 \neq 0 \end{cases}$$

This hypothesis can be revised as follow:

$$\begin{cases} H_0: \text{There is no relationship between character type, extroverted and heart coronary diseases.} \\ H_1: \text{There is a relationship between character type, extroverted and heart coronary diseases.} \end{cases}$$

Table (1): Pierson's correlation index of extroverted character type and coronary disease

		Extroverted character type	Coronary heart disease
Extroverted character type	Pierson's correlation index	1	-0.92
	Meaningfulness		.629
	N	79	79
Coronary heart disease	Pierson's correlation index	-0.92	1
	Meaningfulness	.629	
	N	79	79

Concerning the result of above table, in which the level of error meaningfulness is higher than 0.5, there's not a meaningful relationship between extroverted character type and heart coronary disease, hence zero hypothesis approved.

Testing the second hypothesis:

There is a relationship between introverted character type and heart coronary diseases.

For testing this hypothesis, below statistical hypothesis propounds and concerns:

$$\begin{cases} H_0: \beta_1 = 0 \\ H_1: \beta_1 \neq 0 \end{cases}$$

This hypothesis can be revised as follow:

$$\begin{cases} H_0: \text{There is no relationship between introverted character type and heart coronary diseases.} \\ H_1: \text{There is a relationship between introverted character type and heart coronary diseases.} \end{cases}$$

Table (2): correlation index of introverted character type and coronary disease

		Coronary heart disease	introverted character type
Coronary heart disease	Pierson's correlation index	1	-0.53
	Meaningfulness		.002
	N	79	79
introverted character type	Pierson's correlation index	-.53	1
	Meaningfulness	.002	
	N	79	79

Based on above table, introverted character type has a converse effect on coronary heart disease and this relationship is meaningful.

Testing the third hypothesis:

There is a relationship between introverted character type and heart coronary diseases.

For testing this hypothesis, below statistical hypothesis propounds and concerns:

$$\begin{cases} H_0: \beta_1 = 0 \\ H_1: \beta_1 \neq 0 \end{cases}$$

This hypothesis can be revised as follow:

$$\begin{cases} H_0: \text{There is no relationship between stressful environmental factors and heart coronary diseases.} \\ H_1: \text{There is a relationship between stressful environmental factors and heart coronary diseases.} \end{cases}$$

Table (3): correlation index of stressful environmental factors and coronary disease

		disease	environmental factors
Coronary heart disease	correlation index	1	.23
	Meaningfulness		.000
	N	79	79
stressful environmental factors	correlation index	.23	1
	Meaningfulness	.000	
	N	79	79

Based on above table stressful environmental factors have direct effect on heart coronary diseases and this relationship is meaningful.

4- DISCUSSION & CONCLUSIONS

The result of research shows that stressful factors have a positive relationship and character type has a negative relationship with heart coronary diseases.

result	Determination index	Correlation index	Hypothesis
reject	008%	-92%	The first hypothesis: there is a relationship between introverted character type and heart coronary disease.
accept	28%	-56%	The second hypothesis: there is a relationship between introverted character type and heart coronary disease.
accept	37%	23%	The third hypothesis: there is a relationship between stressful environmental factor and heart coronary disease.

First hypothesis:

Considering the relationship between character type and heart coronary diseases indicates that these two variables have a negative relationship with together, but this relation is not meaningful.

In other research (MahjubHosein, Gharakhani Mohsen, HeidariPahlavian Ahmad) which carried out between hostility character type and heart coronary diseases infection (Scientific journal of Hamedan university of medical and health care, 2008;15(serial50):47-44). Also in previous studies of researchers which has been done in the area of relationship between character type and heart coronary diseases (CHD) there is an inconstant result. Among studies which have consistency with current research, there is a Booth-Kewley and Friedman (1987). They achieve to the result that there is not a meaningful relationship between extroverted character type and heart coronary diseases (according to Vaspens, 2003).

Second hypothesis:

Introverted character type has a convert effect on heart coronary diseases and this relationship is meaningful. For validation of mentioned findings, we can refer to a research (MahjubHosein, Gharakhani Mohsen, HeidariPahlavian Ahmad) about hostility, character type and heart coronary diseases which its results showed that there is not a relationship between having type A character and coronary thrombosis infection, but there is a meaningful relationship between high hostility and coronary artery diseases (Scientific journal of Hamedan university of medical science and health care 2008;15(4 serial 50):47-44). Also in a research (Vafai Maryam, ZoljanahiEhda) the results showed that type D character has a meaningful relationship with increasing the activity of behavioral inhibition system in whole sample and in subjects are with highest type D character. But type D character was not meaningfully accompanied with reduction of behavioral inhibition system's activity in whole sample and subjects were not with highest D character type (Psychological journal of Tabriz university, summer and autumn 2006; 1(2-3):144-123).

Finally, it can be stated that achieved results from this research are correspond with results of other studies in this area. Based on research (1988, Wright; 1987 Landbergufranknhavrz; Crants; 1985 Diamond and Hamfris, Karor) there is a relationship between introverted character type and heart coronary diseases and on the one hand this research concerned to severe physiological reaction of type A character and on the other side concerned to type A individuals especially those who get a high score in anger and hostility scale: in stressful situations they show a higher reaction than type B individuals (Spiga 1986, Diamond and colleagues 1984, Diamond 1982).

The third hypothesis:

The stressful environmental factors have a direct effect on heart coronary disease and this meaningful relationship.

According to below research finding, there is a relationship between stress and heart coronary disease.

In research (NarimaniMohamad, Zahed Mostafa, Abolghasemi bas 2009) the correlation index showed that sense of relation ($r=0.22$) and D character type ($r=-0.62$) has a meaningful relationship with the individuals health who suffers from heart coronary disease ($p<0.01$) based on analytical research of multivariable Regression only expects the negative affection component of D character type, health of individuals suffering from heart coronary disease (Principles of mental health, autumn 2009;11(3(serial 43)):22-213). The research (Nafisi Gholamreza, Mazaheri Mohamad Mahdi, Ahadi Hasan, Ahmadpur Mobarake Alireza) which is about building and validation of scales for D character type and its relationship with heart coronary disease showed that the difference between normal peoples scores and heart disease was meaningful (Knowledge and research in practical psychology, summer 2007;9(32)60-37).

Also we can refer to the research studies of Epstein and colleagues which its result shows that stress increases the secretion of corticosteroids from endocrine glands and high level of these hormones in long time may intensify the artery damage and heart and lead to high pressure and atherosclerosis. Also stress may cause to irregularity in heartbeat, heart attack and sudden death (Epstein and colleagues).

- 1-First hypothesis: There is no meaningful relationship between introverted character type and heart coronary disease.
- 2-Second hypothesis: There is a meaningful relationship between introverted character type and heart coronary disease
- 3-First hypothesis: The stressful environmental factors have a direct effect on heart coronary disease and this relationship is meaningful.

1-4 Suggestions

- 1- Identifying a fortifier factors of stress and remove them.
- 2- Creating different supportive networks for introverted individuals.
- 3- Identifying the individual's character type.
- 4- Utilizing individuals in different jobs concerning their character type.
- 5- Identifying the stressful environmental factors whether particular or social.

2-4 Future researches

Certainly stress and character type in addition of heart coronary disease have other influences on the other cases which researchers can exhaust it including:

- The effect of stress on human body performance
- The effect of stress on embryo during the pregnancy.
- The effect of stress on bones health.

can be referred.

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5 REFERENCES

- 1- Stuard, J.B. (1998). Tension or Stress, new civilizations disease (translated by Parviz Dadsetan). Tehran: Roshd.
- 2- Psychological Researches (2005). 8 volume number 1 and 2 summer.
- 3- Bolghasem bas, Zahed Mostafa, Narimani Mohamad (2009), Principles of Mental Health; 11(3 (serial 43)):3(22-213).
- 4- Ahmadpur Mobarake Alireza, Ahadi Hasan, Mazaheri Mohamad Mahdi, Nafisi Gholamreza, (2007) Knowledge and Research in Practical Psychology summer; 9(32):60-37).
- 5- Hafeznia Mohamad Reza, (2001), an Introduction to Research in Humanistic Science. Tehran: Department publication of studying and editing of humanistic science books of universities.
- 6- Heidari Pahlavian Ahmad, Gharakhani Mohsen, Mahjubhosein, Hamedan (2009) Scientific journal of university of medical science and health care, winter; 15(serial 50): 47-44).
- 7- Psychological journal of Tabriz university, summer and autumn (2006); 1(2-3):144-123).
- 8- NooriVali, and Seif, A.(1996). Internal-external control source relationship and A and B character type behavioral patterns with thought of suicide, 37, 13-24.
- 9- Friedman, M., Thoresen, CE., Gill, J. J., Ulmer, D., Powell, L. H., Price, Price, V.A., & et al. (1996). Alteration of type a behavior and its effect on cardiac recurrences in post myocardial infarction patients: summary results of the Recurrent Coronary Prevention Project. *American Heart Journal*, 112:653-65.