

A comparative study of extraversion and neuroticism Between persons with cardiovascular disorder and Diabetes From urban middle class

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ABSTRACT: *The present study is an attempt to compare extraversion and neuroticism between persons with cardiovascular disorder and diabetes from the urban middle class of Guwahati city, Assam. The sample for the study consisted of 200 known cases of cardiovascular disorders (CVD) and 200 known cases of diabetes following WHO criteria. The age range was between 40-60 years. The control group consisted of 200 normal persons who have not suffered from any major ailment matched for age, sex, and socioeconomic status supported by SESS (urban). All the three groups were administered Maudsley Personality Inventory (MPI) developed by Eysenck (1959). Both CVD and diabetic persons were less extraverted than normal persons. The diabetic persons were more extraverted than CVD persons. The CVD persons were more neurotic when compared to normal and diabetic persons. The results were discussed and implications have been drawn*

Keywords: *Extraversion, Neuroticism, Cardiovascular disorder, Diabetes.*

I. INTRODUCTION

Psychological characteristics maybe a cause of physical illness but they are also a consequence of it. Many major illnesses take a long time to develop and it is frequently the case that patients have experienced unusual and disturbing symptoms for some time before a diagnosis is given. It is therefore possible that psychological characteristics that appear to be a cause of subsequent illness are in fact a consequence of symptoms of developing illness occurring prior to diagnosis (David, 2008).

A disease is a collection of physical findings and symptoms that, when taken together, form a definable entity. A disease has clear symptoms, a method for diagnosis and a course of treatment that is likely to result in a cure or the elimination of the symptoms. "Disease is what practioners have been trained to see through the theoretical lenses of their particular form of practice" – (Kleinman, 1988).

Several factors have been found to influence people's reactions to their physical symptoms. People vary in extent to which they focus their attention on threatening events such as symptoms. Some people minimize the implications of these events and behave as though the Occurrences are minor. One psychological factor that has often been related to reporting of a physical symptom is the personality trait of neuroticism (Brown & Moskowitz, 1997). People, who are high in neuroticism, tend to be anxious and somewhat 'high-strung'. This may be reflected in their tendency to exaggerate small symptoms and complain a lot (Robin, 2008).

Epidemiological surveys in India identified a higher prevalence of all the coronary risk factors such as high blood pressure, cholesterol and diabetes. The prevalence rate of coronary risks and its risk profile is higher among Indian people than that of most Western countries (Saini, 1998). According to the projections of global mortality and burden of disease from 2002 to 2030, cardiovascular disorders will rank stably among the top leading causes of death in the world (Mathers & Loncar, 2006). The incident of cardiovascular disorders increases with age having peak at middle age around 50 to 55 years (Sri Lakshmi, 2002).

Diabetes is on the increase in India. ICMR study showed a prevalence of 2.5% in the urban and 1.8% in the rural population above the age of 15 years, (Sri Lakshmi, 2002). The number of diabetics in India has shown a staggering rise from 19 million to 57 million during the last few years (Shah, 1998). According to an estimate, approximately 150 million people are affected by diabetes today and this number is likely to reach at least 300 million by the year 2025 (King, 1999). It is also estimated that, by the year 2005, approximately 75% of the diabetic persons will be living in developing countries. India will have a large majority of this number (approximately 220 million) and by the year 2025, diabetic population in India will be equal to diabetics from all over the world (Shah, 2001).

The cardiovascular disorders include diseases of the heart and blood vessels (arteries and veins). Coronary heart disease (CHD) and hypertension (HT) are the main cardiovascular disorders (Iqbal, & Ahmed,

1998). Higher the blood pressure the greater the risk for coronary events and stroke (Bittner, 2002; Brezinka&Kittel, 1996; Carrol et al, 1997; Gupta, 1997). Studies on hypertension shows that 33.3% people are suffering from hypertension at the age of 30 years and above in Assam (Hazarika, 2004).

Diabetic Mellitus is a chronic metabolic disorder that prevents the body to utilize glucose completely or partially. It is characterized by raised glucose concentration in the blood (hyperglycemia) and alterations in carbohydrate, fat and protein metabolism. This can be due to failure in the formation or liberation or action of insulin- the hormone, secreted by the beta cells of islets of Langerhans which are an endocrine portion of the pancreas. According to WHO recommendations, if the fasting plasma glucose of a person is greater than 140 mg/dl or the random plasma glucose is greater than 200 mg/dl on more than two occasions, a diagnosis of diabetes maybe made (WHO, Technical Reports no. 727, 1985).

Cardiovascular disorder and diabetes mellitus are two chronic diseases and by definition chronic diseases are long lasting, often lifelong. The symptoms may not be present all the time but the chances of recurrence of the symptoms suggest that the prospects of recovery are limited. Because of the long drawn nature of the disease, a person is required to integrate the disease into his or her daily life. The disease becomes part of a person's existence. The afflicted person is required to comprehend the significance of the disease in terms of the nature of adjustments that he or she expected to make to live with a disease in the world of healthy (Dalal,2000).

Personality has been found to be playing a crucial role in health and disease. According to Marshal (1994), the notion that personality characteristics might influence vulnerability to illness and illness progression continues to attract widespread attention.

Personality is the sum total of the psychological characters of the individual (Cattel, 1950). Allport (1997) says, "Personality is the dynamic organization within the individual of those psychophysical systems that determine his unique adjustment".

Studies showed that essential hypertensives are emotionally depicting a neurotic personality (Balakrishna, 1996). A number of studies show that persons suffering from diabetes experience tension and anxiety which cause frustration when they try to conform to the demands of their social environments (Cruickshank,& Johnson,1967).

In the light of the above studies, the present study was undertaken with an aim to assess and compare the Extraversion and Neuroticism between persons with diabetes and cardiovascular disorder from the urban middle class. The following hypotheses have been formulated for the present study:

- I. Persons suffering from diabetes and cardiovascular disorders will not differ in the personality dimension of Extraversion.
- II. Persons suffering from diabetes and cardiovascular disorders will not differ in the personality dimension of Neuroticism.

II. METHODOLOGY

Sample:

The sample for the study consisted of 200 known cases of cardiovascular disorders and 200 known cases of diabetes fulfilling WHO criteria. Non probability purposive sampling technique was used for selecting the samples. The cases thus diagnosed and referred by physicians and cardiologists formed the experimental group. The age range was between 40-60 years. Both male and female cases were included. (Male=100, Female=100) for both CVD and Diabetic groups. The control group consisted of 200 (Male=100, Female=100) normal persons who have not suffered from any major ailments matched for age, sex and socioeconomic status supported by SESS (urban). All the subjects were from urban middle class families of Guwahati city.

Tools:

Personal data sheet incorporated a number of biographical and demographical informations like name, age, sex, education, occupation, socioeconomic status, geographical locale (place of residence etc.). G.P. Srivastava's SESS Scale (urban) was used to select the sample from middle class families.

Maudsley Personality Inventory (MPI) developed by Eysenck (1959) consisting of 48 items for two scales, e.g. Extraversion and Neuroticism was administered on each subject. Each of these two personality dimensions are measured by means of 24 questions with the help of the scoring key and interpreted as per the manual of instruction.

The mean scores of Extraversion and neuroticism of normal CVD and diabetic persons were computed and 't' test was applied to examine the significance of difference among means. All data were analyzed with the help of computer using SPSS.

III. RESULTS AND DISCUSSION

The results obtained are presented in the following tables-

Table I: Mean, SD and t-values of normal, diabetic and CVD persons for Extraversions

Health Status	N	Mean	SD	T
CVD	200	22.28	5.190	-10.329 *
Normal	200	28.04	5.929	
Diabetic	200	25.04	5.777	-5.117 *
Normal	200	28.04	5.929	
CVD	200	22.28	5.190	-5.026 *
Diabetic	200	25.04	5.777	

*significant at P<0.05

It is found that the mean E scores (22.28 ± 5.190) of CVD persons are lower when compared to the mean scores (28.04 ± 5.929) of normal persons. The difference (-2.76) between the two means is statistically significant at 0.05 level. Thus, it is concluded that CVD persons are less extraverted than normal persons, which is also supported by Dasgupta & Banerjee, (2010).

Diabetic persons are also less extraverted (25.04 ± 5.777) than normal persons (28.04 ± 5.929). The difference between diabetic and normal persons in E (-3.00) is highly significant ($t=-5.117, p<0.05$).

The mean E scores (25.04 ± 5.777) of diabetic persons are higher than the mean score (22.28 ± 5.190) of CVD persons (22.28 ± 5.190). The difference (2.76) between the two means is significant at 0.05 levels and also in favour of diabetic persons. Thus, CVD persons are found to be less extraverted than diabetic persons.

The perception of a personal health threat is influenced by specific knowledge about one's personal vulnerability to a particular disorder and beliefs about the consequences of the disorder such as whether or not they are serious. The CVD persons may feel threatened by the possibility of heart disease and perceive that the threat of heart disease is severe (Tailor, S.E. 2006). This may be the cause for which CVDs are less extraverted than normal and diabetic persons.

Table II: Mean, SD and t values of normal, diabetic and CVD persons for Neuroticism

Health Status	N	Mean	SD	T
CVD	200	24.25	6.932	5.592 *
Normal	200	19.97	8.312	
Diabetic	200	19.12	8.444	-1.020 NS
Normal	200	19.97	8.312	
CVD	200	24.25	6.932	6.647 *
Diabetic	200	19.12	8.444	

*significant at P< 0.05

From the table II, it is found that mean N-score (24.25 ± 6.932) of CVD persons are higher as compared to the mean scores (19.97 ± 8.312) of normal persons. The difference (4.10) between the two means is statistically significant at 0.05 levels. This study is also supported by Acharya (1996). Schwebel & Suls (1999) also found that individuals scoring high in neuroticism showed blood pressure reactivity more when compared to the persons low in neuroticism. Hutchinson, J.G et al (2011) also found that neuroticism is a unifying personality trait that underlies a number of psychosocial risk factors for CVD persons.

Diabetic persons are low in neuroticism (19.12 ± 8.444) as compared to normals (19.97 ± 8.312). Difference between the means between diabetic and normal persons in N is not significant, i.e. diabetes cannot affect the personality dimension of Neuroticism in an individual. This finding is also supported by Robinson et al (1989) who established that personality characteristics appeared to be unrelated to the presence of diabetic complications and control.

The mean N scores (24.25 ± 6.932) of CVD persons are found to be higher than the mean scores (19.12 ± 8.444) of diabetic persons. The difference (5.13) between the two means is significant at 0.05 levels and is in the favour of CVD persons. Thus, CVD persons have higher N scores than diabetic persons.

It was observed that people who are lower in Neuroticism are able to manage or regulate stressful situations more effectively than those with higher Neuroticism levels (Perls, 2009). Moreover acceptance is often the last phase of psychological distress that is associated with diabetes (Boehlke, 2011). Thus, diabetic persons who are found to have lower N levels than the CVD persons may be trying to adjust with their physical disorder.

IV. SALIENT FINDINGS

The present study is concluded with the following findings-

1. Both cardiovascular disorder and diabetic persons are less extraverted than normal persons.
2. The diabetic persons are more extraverted than CVD persons.

3. Cardiovascular persons score higher in neuroticism than normal and diabetic persons.
4. The differences of means among CVD, diabetic and normal persons in the two personality variables- Extraversion and neuroticism were found to be significant at 0.05 levels.

Thus, persons with CVD and Diabetes show deviations from the normal population in the personality variables of Extraversion and Neuroticism. The CVD persons appear to be low on both Extraversion and Neuroticism as compared to normal subjects, while diabetics appear to be low on Extraversion but high on Neuroticism when compared with normal subjects. When CVD and Diabetics are compared it is seen that they differ in both the personality variables with CVD being low on Extraversion and high on Neuroticism than the diabetic subjects.

V. CONCLUSION

It may then be concluded that persons who are likely to suffer from CVD and Diabetes appear to differ in the personality traits of Extraversion and Neuroticism. The findings may be useful for counselors, social workers and doctors and can prove to be a basis for implementing intervention techniques.

REFERENCES

- [1]. Acharya, Y.T.B. (1996). The Relationship between personality and Essential Hypertension. *Indian Psychological Reviews*, 46 (3-4); 50-56.
- [2]. Boehlke, J. (2011). Psychological Effects of diabetes. (<http://www.livestrong.com/article/30549-psychological-effects-diabetes/>).
- [3]. Dalal, A.K. (2000). Living with a Chronic Disease: Healing and Psychological Adjustment in Indian society. *Journal of Psychology and Developing Society*, 12(1), 67-80.
- [4]. Dimatteo, M.R. and Martin, L.R. (2008). *Health Psychology*. Pearson Education, Inc.
- [5]. Hazarika, N.C. (2012). Recent studies of hypertension prevalence in India. *World Journal of Cardiology*, 4(4): 112-120.
- [6]. Kleinman, A. (1988). *The illness narratives: suffering, healing and the human condition*. New York: Basic Books.
- [7]. Perls, Thomas. (2009). Specific personality traits associated with healthy aging and longevity amongst children of Centenarians. *J. American Geriatric Society*.
- [8]. Robinson, (1989). Personality characteristics in diabetic patients. *Journal of Practical Diabetes International*, 6(5), 224-227.
- [9]. Schwebel, D.C. and Suls, J. (1999). Cardiovascular Reactivity and Neuroticism: Results from a Laboratory and Controlled Ambulatory Stress protocol. *Journal of Personality*, 67(1), 67-92.
- [10]. Tailor, S.E. (2006). *Health Psychology*. Tata McGraw-Hill Publishing Company Ltd. Delhi