Original Research Article

Influence of various psychological correlates in cardiovascular disease patients

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Abstract

Background: Cardiovascular disorders continue to be one of the major causes of death in the world. The central nervous system serves as a bridge for the transition; and it links psychological factors to cardiac dysfunction. The interplay of biological and psychological factors in the development of cardiovascular disorders has long been suspected.

Aim: This study aimed to assess the differential influence of various psychosocial adjustments, psychiatric morbidity in patients with cardiovascular diseases.

Materials and methods: The subject of the present study was divided in to three group's i.e. cardiovascular patients, non-cardiac patients, and normal subjects. This study focused on three inventories temperament, type-A behaviour and self-esteem.

Results: Cardiac subgroups showed some similarities with normal and non-cardiac subgroup as well. Type-A behavior didn't have much influence on CVD patient and all patients had less self-esteem. Cardiac patients had less stable temperament and objective temperament was less than the normal subjects, more than non-cardiac patient. Sociability was not a scale to predict the CVD's.

Conclusion: The importance of understanding the psychological correlates of cardiovascular diseases has been undoubtedly established. The interplay of physical and psychological factors in the development of cardiovascular diseases is a truth and not a myth.

Key words

Self-esteem, Type-A behaviour, Stable temperament, Objective temperament, Sociable temperament.

Introduction

Cardiovascular disease is the leading cause of death worldwide. According to World Health Report 2003, 16.7 million people died due to cardiovascular disorder in 2002, which accounts for 29.2% of total global deaths. In recent scientific literature psychiatric disorders and cardiovascular disease (CVD) has got growing attention and remains a matter of ongoing investigations [1–6].

Psychosocial factors may act alone or combine in clusters [7] and may exert effects at different stages of the life course [8]. Psychosocial factors may affect health related behaviour such as alcohol consumption, smoking, diet, or physical activity, which in turn may influence the risk of cardiovascular disease [9]. In spite of all the advances in knowledge regarding the functioning of heart, modern methods of prevention and treatment of cardiovascular disorders, it is still the major contributor of mortality and morbidity in India and in several other countries.

Considerable success has been achieved in reducing death due to the infectious diseases. In contrast, less progress has been made in the prevention or cure of cardiovascular disorders, largely because their etiology is poorly understood.

A growing number of recent research studies provided convincing evidence of a strong link between psychological factors such as life events, occupational pressure, socio-economic status etc. and the development of cardiovascular diseases [10, 11, 12, 13]. This study aimed to assess the correlation between psychosocial adjustments, psychiatric morbidity in patients with cardiovascular diseases.

Materials and methods

The subjects of present study were collected from specialty clinic OPDs, MNR Medical College and Hospital, Sangareddy, Medak and different hospitals of Hyderabad city, Telangana, India, during the two years period from July 2013 to June 2015. Patient's data were collected from hospitals by their case sheets and each patient was evaluated by a consultant cardiologist. A standard questionnaire was prepared for the data collection and taken consent from each patient and obtain ethical clearance. For the present study selected subjects were divided into three groups.

Group-1: It contained cardiovascular patients. Cardiovascular diseases are widely distributed hence, seven cardiac disease types have been included in this category, i.e. Atherosclerosis (ATH), Endocarditis (EN), Myocardial Infarction (MI), Essential Hypertension (EH), Angina (AN), Arrhythmia (ARR) and Pericarditis (PE). Fifty patients from each of these cardiac disease types were selected on the basis of the diagnosis of expert cardiologists, to constitute the cardiac disease group.

Group-2: This group comprised of non-cardiac patients. Fifty patients with diseases other than cardiovascular diseases were randomly selected to be included in this group.

Group-3: This group was a control group of fifty normal individuals. Care has been given to exclude individuals with a history of any major illness.

The present study focused on the variables under three standardized inventories. The inventories and variables were.

- Temperament: Stable temperament, Objective temperament, Sociable temperament
- Type-A Behaviour
- Self esteem

Results

In present study, sample distribution with respect to age in different group showed that the majority of the Myocardial Infarction patients fall under the age group 50-59 and 60-69 and the Angina and Endocarditis patients in the range 50-59 years. Most of the essential hypertension, and pericarditis patients were in 40-49 age range. Similarly the arrhythmia patients come in 30-39

group and Atherosclerosis patients in 30-49 age group.

The normal group comprised 50 patients include 25 males and 25 females. In relation to their age, 13 patients are below 30 years, 27 are between 31-49 years and 10 members are 50 – 70 and more years. In Non-cardiac patients group 25 males and 25 females were included.

Mean and SD values of all variables in different cardiac disease subgroups was as per **Table – 1**. Comparison of Mean and SD values between study groups was as per **Table – 2**.

Discussion

The result of the present investigation showed that the three groups differ significantly on the variable stability (**Table - 2**). The multiple range analysis showed that the normal differ significantly from non-cardiac patients and cardiac patients (**Table - 1**). With a high mean score the normal (36.58) proved to be more stable than the non-cardiac patients (32.88) and cardiac patients (33.93). This result is in agreement with the general concept that any condition that affects the mental or physical health of an individual can affect his stability of temperament.

Table – 1: Mean and SD values of all variables in different cardiac disease subgroups. [Myocardial Infarction (MI), Angina (AN), Essential Hypertension (EH), Arrhythmia (ARR), Atherosclerosis (ATH), Endocarditis (EN) and Pericarditis (PE)].

Variables	Control	Non - cardiac	MI	AN	EH	ARR	ATH	EN	PE
Stable temperament	36.58 ± 5.22	32.88 ± 5.71	36.88 ± 4.20	36.28 ± 5.51	37.38 ± 5.13	36.90 ± 3.23	33.60 ± 6.40	36.62 ± 3.81	31.70 ± 3.28
Objective temperament	38.49 ± 6.19	35.78 ± 4.50	36.76 ± 4.18	37.02 ± 6.29	37.76 ± 4.04	37.36 ± 3.63	34.70 ± 6.53	37.96 ± 3.81	36.16 ± 5.39
Sociable temperament	39.47 ± 4.68	38.30 ± 3.48	39.40 ± 4.68	39.48 ± 4.99	40.78 ± 4.78	39.63 ± 3.45	39.16 ± 4.13	39.50 ± 3.20	36.70 ± 9.62
Self esteem	68.72 ± 7.99	61.76 ± 8.56	65.62 ± 9.25	66.38 ± 7.36	64.30 ± 9.49	63.20 ± 6.98	60.38 ± 2.28	65.76 ± 7.53	60.78 ± 9.50
Type-A behaviour	8.24 ± 2.52	8.09 ± 2.13	10.12 ± 2.54	10.32 ± 3.90	10.38 ± 2.42	9.54 ± 1.58	10.14 ± 2.47	10.28 ± 2.35	9.82 ± 1.84

Table – 2: Comparison of Mean and SD values between study groups.

Variables	Control group	Non –cardiac patients	Cardiac patients
Stable temperament	36.58 ± 5.22	32.88 ± 5.71	33.93 ± 5.16
Objective temperament	38.49 ± 6.19	35.78 ± 4.50	35.24 ± 4.96
Sociable temperament	39.47 ± 4.68	38.30 ± 3.48	39.72 ± 4.64
Self esteem	68.72 ± 7.99	61.76 ± 8.56	64.12 ± 9.72
Type-A behaviour	8.24 ± 2.24	8.60 ± 2.13	10.02 ± 2.61

Objective temperament includes the characteristics i.e. temperament, realistic approach, punctuality, systematic dealings, persistence, self-confidence, self-control, self-analysis, attention, concern about morality and ethics and non-impulsiveness. The present result stated that normal with the highest mean score of 38.49 differ significantly from non-cardiac patients (M=35.78) and cardiac patients (M=35.24). This means that normal is more

objective than the other two groups. Here it is worth mentioning that non-cardiac patient and cardiac patients have some physical ailments, which affects their cognitive functioning. This may be reason for their lack of objective interpretation if the realities around them.

The variable sociability is the ability of an individual to adapt his behaviour to the changing social environment and its demands. This variable measures characteristics such as social activeness, having many friends, enthusiasm, liveliness, pleasantness, happy go lucky, Attitude, positive responses to criticism, helpfulness and being energetic. In the present investigation, no significant differences among the normal, non-cardiac patients and cardiac patients were found. On the other hand, result of the ten-group classification show that there is significant difference on the various sub groups. Detailed analysis based on the above result show that PE group differ significantly from NS, MI, ARR and EH. The higher mean score obtained for the four sub groups, viz., controls (M=39.47), MI (M=39.40), ARR (M=39.63) and EH (M=40.78) indicates that they exhibits gregarious types of behaviour and are able to adapt to the changes in the social environment. The least mean score for the PE (M=36.70) group shows that they are socially inactive, have limited friends and are not energetic. Even though there is no significant difference among the three groups (normal, non-cardiac patients and cardiac patients).

According to Chida Y, et al. high levels of self-acceptance and self-respect are important contributors a positive mental state of health [14]. He also pointed out that persons with high self-esteem are more likely to express high satisfaction with their life and helps the individual cope with stress. This supports the findings of the present study, i.e. the normal scored high on self-esteem than the non-cardiac patient and cardiac patient groups. Haltky, et al., Denollet, et al. and Huffman JC, et al. through their study shows that after myocardial infarction (MI) disabled persons were more depressed and

had lower self-esteem score [15, 16, 17]. In the present study, all the subgroups of cardiac patients, especially the MI group, have lower scores than normal. Thus, it is evidently clear that the non-cardiac patient and cardiac patient group have lower self-esteem than normal. It can be concluded that high levels of self-esteem are a contributory factor to a positive mental health status.

The results of present study, it is clear that the three-group classification shows significant difference between cardiac patients and the two control groups. Subgroup wise analysis does not show any significant difference between the different cardiac disease groups [18]. Study by Tagawa and Hosaka shows that the behaviour pattern might be an independent coronary risk factor. Another study by Kaushik et al. also states that the important precipitating factor for both male and female coronary heart disease patients is type-A behaviour pattern [19]. The results of the present investigation also assert that the non-cardiac patients and normal differ significantly from the cardiac patients.

Conclusion

Cardiac patients show less stable temperament than the normal group. Cardiac patients are of less objective-temperament than normal, but higher than non-cardiac patients on stabile-temperament. Cardiac patients lack objectivity. Sociability is not a scale to diagnose or predict cardiac disease conditions. Cardiac patients have less self-esteem due to the constant awareness of physical constraints and fear of unpredictable situation.

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