

RELATIONSHIP BETWEEN LIFE STYLES, STRESS AND CARDIAC ILLNESS

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The present research was carried out to investigate the relationship between lifestyles, stress and cardiac illness. The sample consisted of 100 adult males (50 cardiac patients and 50 normal), with age range 40 to 65 years. The indoor cardiac patients already diagnosed as heart patients, were taken from Punjab Institute of Cardiology, Lahore. The normal adults were matched on age, gender, marital status and occupation with that of cardiac patients, and were not cardiac patients. The lifestyles and stresses faced during last 1-3 years were measured. Questionnaire for Lifestyles and Life Stresses Checklists were constructed and administered to the patients individually. QLS was divided into three categories, cigarette smoking, dietary habits and miscellaneous lifestyle. LSC was divided into three categories of family and social stresses, job and financial stresses and miscellaneous stresses. The results indicated a significant difference in lifestyles and stresses faced by normal and indoor cardiac patients suggesting a significant relationship between lifestyles, stress and cardiac illness.

Coronary heart disease is one of the leading causes of death in industrialized countries. The rising mortality rate due to cardiac illness, were associated with increase consumption of saturated fats, cholesterol, salts, sugar and decreased intakes of cereals and vegetables. Two major categories of contributors to cardiac illness include lifestyle, and stresses. Lifestyle includes smoking, hypertension, obesity, elevated serum cholesterol, exercise habits and alcohol consumption. Epstein and Perkins (1988) have described that cigarette smokers run almost twice the risk for CHD mortality and morbidity as compared to nonsmokers. Diet, according to many experts, is the single most important factor in atherosclerosis. Cholesterol is a fatty substance that leaves its clot in blood that deposits themselves to the walls of artery. Different researches have shown that people with low cholesterol diet suffer fewer heart attacks.

Other factors related to heart disease are obesity, over-eating and over-weight. It was noticed that middle aged over-weight people are two or three times more

likely to develop heart disease than normal weight individual. (Kane, Blake, Frye, Miller, & Whittington, 1987). A physical inactive lifestyle has long been recognized to lead to a reduction of cardio-respiratory endurance and muscular strength with increase in percentage of body fat. Taking exercise moderately and regularly reduces not only the incidence of CHD but also lowers the probability that any given CHD attack will be fatal (Jenkin, 1988).

Stress is another major predisposing factor of cardiac illness. Stress can range from physical and mental exertion to chronic stresses, marital conflicts, financial worries and job stress. In job stress the person experiences a high level of demands, too much work and too little time to do it, coupled with little authority to make decision that compels a person to chronic stress. This is also supported by a research carried out by Freeman, Nixon, Sallabank, and Reaveley (1987) who studied episodes of transient myocardial ischemia during daily life in 30 patients on two different and separate occasions. First, at the time of uncertainty in patients lives, when the results of coronary angiography and need for surgery was discov-

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ered. Secondly, when there had been time to adjust to the decision making process by Ambulatory Holter ST monitoring. Silent ischemia was significantly more frequent during firstly period of monitoring as compared to the second. Patients who had silent ischemia on the first occasion had also more self report of emotional upsets, tension, worries etc., in their diaries. Another measure of uncertainty and worries was the level of urinary cortisol and non-adrenaline excretion that was also significantly high on the first occasion. The results of this research clearly indicated that psychological stress might exaggerate myocardial ischemia that is usually painless.

Cardiac illness or coronary heart disease are the heart related problems and it takes two principle forms i.e., angina pectoris and myocardial infraction. Angina Pectoris is periodic chest pain usually located behind the sternum and frequently radiating into the left shoulder and arm. The major cause of these severe attacks of pains are insufficient supply of oxygen to the heart that in turn is traced to coronary atherosclerosis a knowing or plugging of the coronary arteries by deposits of fatty material. Angina in generally precipitated by physical or mental exertion and is commonly relieved by rest or medication. Serious physical damage to heart muscles rarely results from an angina attack, for blood flow is reduced but not cut off. Myocardial infraction is a much serious disorder and is the leading cause of death in the United States today. It is caused by an insufficient supply of oxygen through atherosclerosis or from coronary occlusion, a sudden obstruction, of a large coronary artery by deposits or a blood clot.

In Pakistan coronary heart disease's rate has increased considerably during last 10 years due to sedentary lifestyles and psychological stresses. Male population is 5 times more vulnerable to heart disease than female because they usually sole bread winners and also face family and

job problems. They face pressure socially, financially and also have to bear work overload to support their family. (Ijaz, Siddiqi, Khan, & Najib, 1990). Other factors might be illiteracy and lack of information guidance and awareness about the related risk factors and preventive measures for coronary heart disease. Pakistan National Association of Heart (PNAH) is playing an important role in bringing awareness among people about this serious illness by holding seminars and other activities.

Present research was carried out to investigate relationship between lifestyle stress and cardiac illness. The research would be helpful in bringing awareness among individuals, policy makers, professionals and common people about the factors of this serious illness.

Method

The present research follows a retrospective post facto design and following hypotheses were formulated

1. There would be a significant difference in life-stresses of indoor cardiac patients and normal adults.
2. There would be a significant difference in the lifestyle of indoor cardiac patients and normal adults.

Pilot Study

A pilot study was carried out for the construction of the questionnaires to measure two variables of the present study.

Questionnaire for Life Style (QLS)

The researcher framed 16 items to measure daily lifestyles of normal and cardiac male patients during last 3 years. Each individual's score on this questionnaire determined lifestyle of the subjects. The scoring range was from 0-4 with responses categories "e" to "a". Item no. 1 of this category was scored in reverse order.

Life Stresses Check List (LSC)

The rationale for constructing the checklist for life-stress was taken from the social readjustment rating scale of Holmes and Rahe (1967) who attempted to relate stressful life events with the onset or prevalence of human illness through statistical links. Pilot study was carried out and from basic categories of scales important factors emerged which play important role in CHD. From these basic categories checklist for measuring life-stress was formulated that comprised of 45 items. The level of stress was determined by each individual score of checklist measuring various life stresses (CLS) experienced in last 1-3 years. Items were scored as 0-4 with response category of "Never", "Sometime", "Usually", "Often" and "Always".

Main Study

Sample

The researcher employed non-probability purposive sampling technique according to the specific requirement of the study i.e., cardiac patients and normal (without previous history of cardiac illness). Cardiac patients were taken and matched on the basis of doctors' reports, hospital recordings etc., and there were 100 male subjects i.e., 50 males indoor cardiac patients ($M = 55$ years) taken from Punjab Institute of Cardiology, 50 normal adults ($M = 51.70$ years) male adults were matched on age range, gender, marital status, and occupation. The lifestyles and life-stresses experienced by the subjects during the last 1-3 years were measured.

Instruments

1. Questionnaire for Life Style

Questionnaire developed in the pilot study was used to measure lifestyles in the cardiac patients and normal match group. QLS was constructed both in Urdu and

English languages. The responses were given on 4 categories ranging from c to a, with scoring range 0-4.

2. Checklist for Life Stress

Holmes & Rahe (1967) model was followed to construct checklist for measuring life stresses. It was constructed both in Urdu and English languages. Response categories of LSC were "Never", "Some time", "Usually", "Often", and "Always", with scoring range of 0 to 4.

Procedure

Official permission from the concerned authorities was taken to draw the sample from Punjab Institute of Cardiology, Lahore. Signed consents were taken from the cardiac and normal adult males. The subjects in the research were matched on their age range, gender, occupation and marital status. 50 subjects were taken from indoor unit of Punjab Institute of Cardiology and 50 normal adults with no previous history of cardiac illness were selected. The researcher selected only male subjects with age range of 40-65 years. The questionnaires were administered by researcher on individual basis to the subjects who were voluntary participants for the study.

Results

Besides descriptive statistics, t-test from Statistical Package for Social Sciences (SPSS) was used for data analysis and to determine whether there is any difference in lifestyle and stress of cardiac patients and normal adults. The results given in table 2 indicate that there is a significant difference ($t = 3.61, p < .001$) between normal ($M = 24.5$) and cardiac patients ($M = 31.46$) in terms of lifestyles.

The results of table 3 indicate a significant difference $t(98) = 2.44, p < .05$ in normal and cardiac patients in terms of daily life stresses measured by CLS.

Table 1*Sample Description*

Variables	Normal (n = 50)		Cardiac (n = 50)	
	f	%	f	%
AGE				
40-50	24	48	15	30
51-60	21	42	20	40
61-65	5	10	15	30
MARITAL STATUS				
Married	49	98	50	100
Unmarried	0	0	0	0
Widower	1	2	0	0
SPOUSE WORKING				
Working	7	14	4	8
Non working	43	86	46	92
EDUCATION GRADE				
1-10	13	26	31	62
F.A/F.Sc-B.A/B.Sc	21	42	14	28
M.A-M.Sc	16	32	5	10
OCCUPATION				
Employed	19	38	18	36
Retired	5	10	4	8
Business	12	24	10	20
Agriculture	4	8	5	10
Other occupations	10	20	13	26
FAMILY SYSTEM				
Joint	20	40	18	36
Nuclear	30	60	32	64
NO. OF CHILDREN				
1 - 4	22	44	22	44
5 - 8	28	56	23	46
9 - 12	0	0	5	10

Table 2

Means, Standard Deviations, and t-value of Normal (n=50) and Cardiac Patients (n=50) on Lifestyle Questionnaire (QLS)

Groups	M	SD	t
Normal	24.58	8.83	3.61*
Cardiac	31.46	8.07	

df = 98. *p < .001.

Table 3

Means and Standard Deviations of Cardiac Patients (n=50) and Normal Adults (n=50) on Checklist for Life Stress (CLS)

Groups	M	SD	t
Normal	53.10	24.33	2.44*
Cardiac	65.42	24.74	

df = 98. *p < .05.

Discussion

The present research was carried out to explore the relationship between life-style, stress and cardiac illness. Results indicated a significant difference in life-styles of cardiac patient and normal male adults. This finding is consistent with the previous findings, of Ijaz, Siddique, Khan, and Najib (1990) who found a strong relationship in hyper cholesterolemia, smoking and cardiac illness. Similarly many researches relate CHD with higher serum cholesterol. Pooling project research group (1978) determined a relationship between blood pressure, serum cholesterol, smoking, relative weight and ECG abnormality to the incidence of major coronary event.

Results of present research also indicated a significant difference in stresses experienced and reported by indoor cardiac patients and normal adults. There are numerous studies which show that the persons experiencing too much stress then he/she is more vulnerable to have its devastating effects e.g., a study by Smith and Gallo (1994) showed that stress related to psychosocial factors contribute a lot to the development of coronary heart disease. Similarly Byrne, Whyte, and Butter (1981) interviewed men and women who survived heart attacks. At the first interview, which took place 10-14 days following their admission into CCU, they responded to questionnaire about personal, social and financial worries prior to heart attack that they judged as contributed to attack. Out of the 102 members who could be located eight months later, twenty had a recurrence of heart disease and seven had died as a direct consequence of heart attack. The individuals who had a recurrence of the disease reported significantly more worries at the first interview than those who had not suffered recurrence.

In Pakistan, coronary heart disease has increased considerably during last ten years. Different research findings have shown a close relationship between stress,

coronary heart disease and gender differences as Kaushik et al. (1991) found that male coronary heart patients had experienced more stressful life events than females. Hence the finding of the research suggested a close relationship between lifestyles, stresses and cardiac illness.

Limitations and Suggestions

For the present research all the cardiac subjects were drawn from Punjab Institute of Cardiology, Lahore due to lack of time and resources and the easy availability of cardiac sample. This is the only institute that exclusively deals with the problems related to various cardiovascular diseases. The normal male adults were matched on the age, gender, marital status, because with same marital status the person faces similar stress. Occupation of cardiac patients was matched with normal adults to maximize their occupational settings and their economical level. This illness occurs 5 times more in males as compared to females, therefore male data was easily available.

Further research should be carried out with samples from different hospitals and to compare the lifestyles, stresses experienced by them. It is also suggested that a comparison should be determined between the indoor and outdoor cardiac patients with reference to their lifestyles and stresses. It is also suggested that further researchers should take females as subjects to determine what are their predominant lifestyles and stresses and to determine why they are less prone to cardiac illness as compared to males. The age range in this research was 40-65 years that could be reduced to 30 years to know exactly from where this disease starts. Other factors such as depression, anxiety, coping strategies etc., can be measured among cardiac patients.

Present research was carried out to determine a relationship between lifestyle, stress and cardiac illness. However, further research is required to clarify the

complex variables involved in cardiac illness. Such researches can be utilized to prevent cardiac illness and also identify those at risk.

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