

LOCUS OF CONTROL IN CANCER AND CARDIAC PATIENTS : COMPARISON ACROSS GENDER AND SOCIO-ECONOMIC STATUS

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ABSTRACT

The objective of the study was to explore the locus of control in cancer and cardiac patients in comparison to gender and SES (socio- economic status). A total of 360 respondents constituted the sample of the present study. Modification of Rotter's Internal-External Control of Personality Scale (Ara's Bengali Adaptation 2006) was used for the collection of data. The sample was equally divided into three categories (cancer, cardiac, normal) on the basis of type of individuals (N=120 for each category). Again they were equally divided into male and female on the basis of gender (N=60 for each group). Each category was again equally subdivided into lower middle and upper middle on the basis of SES (N=30 for each group). Results analyzed through ANOVA revealed that the main effects for type of individuals, gender and SES were statistically significant. That is, Both cancer and cardiac patients were more externally controlled as compared to normal individuals, Females were more externally controlled as compared to males and lower middle SES individuals were more externally controlled as compared to upper middle SES individuals. Again the two way interactions between type of individuals & gender, and gender & SES were statistically significant.

Key Words: Locus of control, Socio economic status, Gender, Cancer, Cardiac.

INTRODUCTION

In the stress-distress area, Locus of Control (LOC) is perhaps one of the most extensively researched variables and evidence concerning its relationship with various kinds of pathology like cancer and cardiac disease is almost unequivocal. Rotter (1966) originally formulated "locus of control" (LOC) as a generalized belief about contingency between one's action and actual outcome, brought about through social learning mechanisms. The internal locus of control

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refers to the conviction that outcome of events in life are contingent upon one's own behavior whereas the external locus of control refers to the conviction that outcome of events are not contingent upon one's action, but upon luck, chance, fate, or powerful others. Researchers have agreed that LOC is an important individual difference factor, and can be regarded as a stable personality trait (Paulhus 1983). Research has generally suggested a linear relationship between LOC and self-reported psychopathology (Wallston and Wallston 1982, Lu 1990). Moderating effects of LOC have also been reported. A chronic disease like cancer has an impact on all aspects of a patient's life and his personality pattern. Work may be threatened or terminated by the need for extensive treatments or by the debilitating side-effects of the disorder. The patient's psychological state and control beliefs are almost certainly affected in that the diagnosis of a chronic illness can produce extreme fear and anxiety or depression. The term "cancer" refers to more than 100 different diseases, but all involve a malfunction in the mechanisms that control cell reproduction. The normal duplication of cells - a slow, regular process - is replaced by a rapid production of abnormal cells that invade the body's organs and tissues. Several investigators report that people, too, are at increased risk for cancer a year or so after experiencing depression, helplessness, or bereavement. For example, cancer occurs more often than usual among those widowed, divorced, or separated. Recent research indicates that the body's release of stress hormones can affect cancer cell functions directly (Reiche *et al.* 2004, Thaker *et al.* 2006). Cancer is, as we know, a life changing experience for the cancer sufferer, their friends and families. Cancer and cancer treatment both have rather drastic psychological and physiological effects on the sufferer based on the patients' locus of control in accepting the disease and adapting with the disease.

More and more evidence suggests a relationship between the risk of cardiovascular disease and environmental, psychosocial and personality factors. These factors include job strain, social isolation and personality traits. Two main cardiac disorders, coronary heart disease and hypertension are the largest killers in the world society today. Every year, millions of people die from cardiac degeneration including hypertension, heart failure, stroke and kidney diseases. CHD has been linked to hypertension, diabetes, smoking, obesity, high levels of cholesterol, and low levels of physical activity (American Heart Association 1984). The least stressful and more internally controlled have the lowest prevalence of coronary heart disease, and the most stressful more externally controlled have the highest rate of coronary heart disease. A lack of balance between demands (e.g. job stress) and buffering resource (e.g. social network)

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evokes negative emotions (such as hopelessness). Negative emotions may lead to smoking, lack of exercise and poor diet, which may in part be reflected by obesity and poor lipid and haemostatic profiles. Johnson and Sarason (1978) found that internal locus of control moderated the relationship between stressful life events and chronic illness among college students. Evidence also showed that internal locus of control alleviated emotional distress following a cancer diagnosis (Marks *et al.* 1986) and helped people to adapt successfully to stressful work settings. Internal locus of control was strongly related to job performance and job satisfaction (Peterson and Albrecht 1996).

A review of the available literature corresponding to the locus of control in cancer and cardiac patients in relation to socio demographic factors like gender and SES has been put forward in this section.

Several studies (Strickland 1979) have shown that internals are also more likely than those of externals to reduce or quit smoking. Wallston and Wallston (1982) showed that internals have more positive attitudes than externals about physical exercise and cardiovascular fitness. Thus, an internal locus of control is associated generally with good health, preventive health care, and more adequate coping with chronic illness like cancer and cardiovascular disease once it does occur.

It was found that internals more than externals were encouraged by their parents when they were children to follow a good diet, to get enough exercise, to brush their teeth properly, and to have regular dental and medical checkups. As a consequence of these early experiences, internals have learned to see themselves as responsible for the maintenance or improvement of their physical health. It was found that within heart transplantation patients, personal control was positively correlated with optimism, well being, and satisfaction with life, and negatively correlated with anger and depression (Bohachick *et al.* 2002).

Studies (Neipp *et al.* 2009) related with chronic illnesses showed that control beliefs are associated with better psychosocial adjustment and emotional status. The purpose of the study was to describe changes and long-term influence of general control beliefs and specific control beliefs over psychosocial and emotional adjustment of male and female cancer patients. Results indicated that male patients had a good emotional adjustment to stress and psycho-social adaptation than women. Male patients also had an internal locus profile but female patients had an external locus profile.

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Bourjolly (1999) also found that women with breast cancer tended to attribute control for their cancer to external forces more than to their own control. Bundeck *et al.* (1993) found a relationship between personality factors, emotional factors, and cancer. They found the most prevalent predisposing condition to be the loss of an important love object or relationship six to eighteen months prior to the diagnosis of malignancy. According to them, these losses create hopelessness, poor ability to develop and maintain long-term relationships, a poor self-image, and feelings of rejection more among externals than internals.

Antoni *et al.* (2006) made a study of survivors, examining the characteristics of their own patients who outlived predicted life expectancies. All of the patients who choose their program are screened on the basis of a stated willingness to cooperate with their medical treatment and assume a responsibility for their own return to health. The exceptional patients refuse to give up, rate higher than average in nonconformity and ego strength, and have an inner-directed locus of control.

Pelletier (1964) cited four significant factors present in those who survived cancer against the odds. Each of the patients had gone through some profound intrapsychic changes; their sense of self and innermost being had been changed, whether by a revelatory experience, meditation and prayer, or spiritual insight. They made important interpersonal changes, improving their relations with others. All had made major changes in their diet and nutrition and in the ways they cared for their bodies. And every one, without exception, looked upon their recovery not as a gift or a miracle, and not as a spontaneous remission, but as a long, hard struggle that they had won!

A study by Williams *et al.* (1977) indicate that some of the variability in cardiovascular response to sensory processing may be explained by individual differences in personality characteristics related to subjects' preferred level of involvement in differing sensory processing behaviors. In this study internals showed a differential response of forearm blood flow to sensory intake, in the direction of less of an increase in forearm blood flow. In contrast, externals showed a similar vasodilatation across all tasks.

Shelley *et al.* (2007) conducted a study to test the proposal that external health locus of control and self-efficacy would moderate the effects of a psychological preparation for surgery on outcomes for surgical heart patients. Main outcome measures of this study were psychological distress, pain, serum cortisol, and tumor necrosis factor alpha. Results indicated that for high external

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health locus of control, the preparation was related to lower distress for people with high self-efficacy compared with those with low self-efficacy. When external health locus of control was low, the preparation was related to lower distress for those with lower self-efficacy.

Kanner *et al.* (1981) found that women view the diagnosis of cancer as a death sentence, loses interest in daily events and become fully dependent on their physicians, whereas a man views coping with his cancer as a challenge and finds that the daily events take on new meaning.

In one study Cicirelli (1987) found that patients with external locus of control beliefs were better adjusted in institutions was reexamined in a high-constraint acute-care hospital. Subjects were 105 cardiac patients aged 60–93. The Multidimensional Health Locus of Control (MHLC) scales were used to measure locus of control. Results indicated that patients who perceived greater constraint were more poorly adjusted. Those with stronger beliefs that powerful others control health outcomes perceived less constraint in the hospital situation, whereas those with stronger internal control beliefs perceived greater constraint.

Marks *et al.* (1986) conducted a study to examine the effects of health locus of control beliefs and expectations of treatment efficacy on short-term psychological adjustment in a sample of newly diagnosed cancer patients. Results showed that the relation between perceptions of disease severity and depression was weaker for those who believed that they could personally control their health and for those who held positive expectations about the effects of complying with medical treatment.

The effects of psychosocial, medical and treatment related factors upon change in health locus of control were studied by Sorlie and Sexton (2003) in 369 surgical patients. Control beliefs were assessed prior to hospital admission and 4 months following discharge. Results indicated that education was associated with an increase in internal and a decrease in chance control. Increases in internality were predicted by a positive relationship with physicians. The severity of the illness predicted an increase in chance control. Subjective stress predicted an increase both in powerful others and chance externality. Treatment for coronary heart disease predicted increases both in internality and powerful others externality.

French *et al.* (2001) mentioned that coronary patients who believe they can, through their own behavior, control their condition or the cause(s) of their condition are more likely to engage in exercise programmes and dietary changes

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than those who don't possess this belief. These above mentioned empirical findings are in accordance to measure the locus of control in cancer and cardiac patients as related to gender and SES.

Cancer or coronary heart disease has an impact on all aspects of a patient's life. The patient's psychological state is almost certainly affected in that the diagnosis of a chronic illness can produce extreme fear and anxiety or depression. But physicians, psychiatrists or significant people of the society believe that appropriate behavior toward cancer or cardiac patients requires a cheerful, optimistic front, so the patients would feel better. Actually the person who becomes ill due to cancer or cardiac disease must process the incoming information, attend to whatever physical symptoms are present, and correctly interpret them for coping with the disease effectively. That is, by changing their behavior towards the disease and to engage in acts that will generate positive effect, cancer and cardiac patients can greatly reduce their risk. For this, they should be internally controlled to maintain positive beliefs about their disease and to avoid the negative influential comments of significant others of the society about the disease. To know whether the changes in self-concept, personal relationships, and work that can result from chronic disease will affect the sufferers control beliefs in a positive or negative manner to face the disease and to cope with it would be the major concern of this study. Cancer or cardiac disease may also be responsible for strained, disrupted interpersonal relationships which have a unique impact on the patient's psychological well-being and adjustment to the illness. Problems with social relationships may occur because of the fear and stigma associated with the illness and this would create a detrimental effects upon the patients' attitudes if he is influenced by the externality, powerful others and chance factors. By considering these important aspects this study would be an attempt to focus on the locus of control in cancer and cardiac patients as related to gender and SES which are the results of their self perceptions as well as society's perceptions and interpretations about their illnesses.

In respect of the rationale of the study, the broad objective was to explore the locus of control in cancer and cardiac patients in comparison to gender and socio economic status. And the hypotheses of the study are **H₁**: Both cancer and cardiac patients would be more externally controlled as compared to normal individuals. **H₂**: Females would be more externally controlled as compared to males. **H₃**: Lower middle SES individuals would be more externally controlled as compared to upper middle SES individuals.

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MATERIALS AND METHODS

Sample

A total of 360 respondents constituted the sample of the present study. The sample was equally divided into three categories (cancer patients, cardiac patients, normal individuals) on the basis of type of individuals (N=120 for each category). Again they were equally subdivided into male and female on the basis of gender (N=60 for each group). Each category was again equally subdivided into lower middle and upper middle on the basis of SES (N=30 for each group). Cancer and cardiac patients' data were collected from different health institutions of Rajshahi and Dhaka cities. Data of normal individuals were collected from Rajshahi and Dhaka cities. Purposive sampling procedure was followed for the collection of data.

Instruments

The investigator selected the following measures for the collection of data in the present study

- (1) Personal information sheet (PIS): A questionnaire was set for collecting the personal information of the subjects, such as name, age, educational qualification, occupation, monthly income, religion, husband/parental income, marital status, health wellbeing, types of illness, SES background information etc.
- (2) Modified form of Rotter's Internal-External Control of Personality Scale (Ara's Bengali Adaptation).

Modification of Rotter's Internal-External Control of Personality Scale (Ara's Bengali Adaptation)

The internal-external scale in its present form is made up of 29 pairs of items including fillers. This scale is an outcome of revision and purification of Liverant's scale done by Rotter and Liverant (1966). The revision was undertaken by Liverant in collaboration with Rotter. They eliminated those items which were highly correlated with social desirability scale and those items for which one of the two alternatives was endorsed by as many as 85% of the subjects. The reliability of the final internal-external scale which contained 29 pairs of items were estimated by three methods namely the split half, the Kuder-Richardson, and the test retest. The co-efficient were found to be 0.65 to 0.79, 0.69 to 0.73, and 0.55 to 0.83 respectively in different samples. This present form of Liverant and Rotter's internal-external control of personality scale was modified by Ara and

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Rahman (2006) according to the present purpose of the study. Out of 29 pairs of items, 23 pairs of items were discarded from the original inventory. Remaining 12 items were modified for the present purpose of the study. Scoring system of the inventory was also changed. Thus, in the present form total 12 items were retained. The reliability of the modified form of internal-external scale which contained 12 items was estimated by the test-retest method. The co-efficient was found to be 0.62 to 0.71. Product moment correlation between the present form of internal-external control scale with the original form was obtained ' r ' = 0.74 which was statistically significant.

Procedure

In this study, the investigator utilized two measures i.e. PIS and Modified form of Rotter's Internal-External Control of Personality Scale (Ara's Bengali Adaptation) to each of the 120 subjects separately for cancer patients, cardiac patients and normal individuals. The investigation was conducted on a sample of three categories – one, cancer patients, two, cardiac patients and three normal individuals. Data of all patients were collected from different medical college hospitals & health institutes of Rajshahi and Dhaka cities. Data of cancer patients were collected from Rajshahi Medical College Hospital; Rajshahi Cancer Hospital and Research Centre; Dhaka Ahsania Mission Cancer Hospital; Mudabbir Cancer Care Centre, Dhaka; National Cancer Institute Mohakali, Dhaka; Square Hospital, Dhaka; Appollo Hospital, Dhaka; Central Hospital, Dhaka; Delta Hospital, Dhaka. Data of Cardiac patients were collected from Rajshahi Medical College Hospital, Rajshahi Heart Foundation, Dhaka National Cardiac Hospital, Dhaka Ibrahim Cardiac Hospital & Research Institute; data of normal individuals were collected from different parts of Rajshahi and Dhaka cities. The participants took half an hour to fill up ATC questionnaire. However, the participants were very much eager to fill up the questionnaire. Though they were always busy for something but they co-operated the investigator to fill up the scale. The investigator was able to make a rapport with the participants. They were told that these collections of data would help them coping with stress unless and until they expressed their views and opinions frankly. Thus, they spontaneously responded to all the answer sheets.

Scoring

The data of the present study were collected through the modified form of Rotter's Internal-External Control of Personality Scale (Ara's Bengali

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Adaptation). This scale used in this study contains 12 items. Thus, the score ranged from $40 \times 1 = 40$ to $40 \times 5 = 200$. There are five alternatives in each item. These are: (i) strongly agree, (ii) agree (iii) neutral, (iv) disagree and (v) strongly disagree. Scoring for each item which indicated internally controlled were given score in such a way that 5, 4, 3, 2 & 1 is respectively given for the five above mentioned alternatives. The responses to various externally controlled items were scored in such a way that 1, 2, 3, 4 & 5 is respectively given for the five above mentioned alternatives. Then the total score of each respondent is obtained by adding all 12 items' scores. The scores ranged from $(12 \times 1) = 12$ to $(12 \times 5) = 60$. Thus, for 12 items, highest scores indicated most internally controlled and the lowest scores indicated most externally controlled. Hence, the mid pint was

$$= \frac{\text{Highest score} + \text{Lowest score}}{2} = \frac{60 + 12}{2} = 36$$

The scores above this midpoint were indicative of more internally controlled and the scores under this midpoint were indicative of more externally controlled.

Design

The present study was designed to investigate the locus of control in cancer and cardiac patients in comparison to gender and SES differences in Bangladesh. The study used three independent variables such as type of individuals, gender and SES. Type of individuals was divided into cancer patient, cardiac patient and normal individual. Gender was divided into male and female. SES included upper middle SES and lower middle SES. These independent variables were tested for measuring the locus of control of the respondents. It was a three-way Analysis of Variance (ANOVA) consisting of three levels of individuals (cancer patients, cardiac patients and normal individuals), two levels of gender (male and female) and two category of SES (upper middle SES and lower middle SES).

RESULTS AND DISCUSSION

The data were analyzed by computing Analysis of Variance (ANOVA) on the scores of Internal-External Control of Personality Scale. The results reported

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in table 1 showed that the main effects for type of individual (F=22.55, df=1/348, p< .01), gender (F=51.84, df=1/348, p< .01) and SES (F=3.86, df=1/348, p< .05) were statistically significant. It was also found that interaction effect of a two-way analysis of variance involving type of individual and gender (F=3.89, df=1/348, p< .05) and gender and SES (F=3.86, df=1/348, p< .05) were also statistically significant.

TABLE 1: FACTORIAL ANOVA OF INDIVIDUAL, GENDER AND SES ON THE SCORES OF INTERNAL-EXTERNAL CONTROL OF PERSONALITY SCALE.

Source of Variance	Sum of Squares	Df	Mean Square	F
Type of Individual (A)	1273.76	2	636.88	22.55**
Gender (B)	1464.10	1	1464.10	51.84**
SES (C)	108.90	1	108.90	3.86*
AB	219.80	2	109.90	3.89*
AC	81.67	2	40.83	1.45
BC	108.90	1	108.90	3.86*
ABC	58.47	2	29.23	1.04
Within Cell (Error)	9827.73	348	28.24	
Total	13143.33	359		

P< .05*, P< .01**

TABLE 2: MEAN SCORES AND SIGNIFICANT MEAN DIFFERENCES FOR THE MAIN EFFECT OF TYPE OF INDIVIDUAL ON THE SCORES OF INTERNAL-EXTERNAL CONTROL OF PERSONALITY SCALE (N=120 FOR EACH GROUP).

Group	Mean Scores
Cancer Patients	39.10
Cardiac Patients	41.00
Normal Individuals	43.70

Note : Mean differences were computed using Newman-Keuls formula. p< .01.

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TABLE 3 : MEAN SCORES AND SIGNIFICANT MEAN DIFFERENCES FOR THE MAIN EFFECT OF GENDER ON THE SCORES OF INTERNAL-EXTERNAL CONTROL OF PERSONALITY SCALE (N=180 FOR EACH GROUP).

Gender	Mean Scores
Male	43.29
Female	39.25

TABLE 4: MEAN SCORES AND SIGNIFICANT MEAN DIFFERENCES FOR THE MAIN EFFECT OF SES ON THE SCORES OF INTERNAL-EXTERNAL CONTROL OF PERSONALITY SCALE (N=180 FOR EACH GROUP)

SES	Mean Scores
Upper Middle SES	41.81
Lower Middle SES	40.72

TABLE 5: CELL MEANS AND THEIR SIGNIFICANT MEAN DIFFERENCES OF TWO-WAY INTERACTION INVOLVING TYPE OF INDIVIDUAL AND GENDER ON THE SCORES OF INTERNAL-EXTERNAL CONTROL OF PERSONALITY SCALE (N=60 FOR EACH GROUP).

	Gender	
	Male	Female
Cancer Patients	41.00 _a	37.20 _b
Cardiac Patients	44.03 _c	37.97 _b
Normal Individuals	44.83 _c	42.57 _d

Note: Common subscripts do not differ significantly. Mean differences were computed using Newman-Keuls formula. $p < .01$.

The interaction effect has been graphically plotted in Figure – 1.

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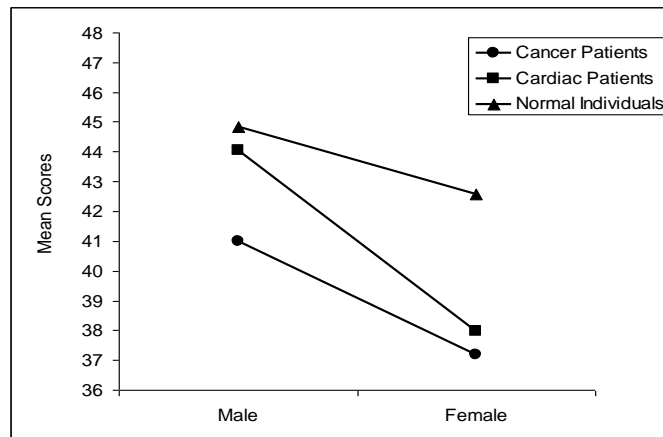


FIGURE 1: TWO-WAY INTERACTION EFFECT BETWEEN TYPE OF INDIVIDUAL AND GENDER.

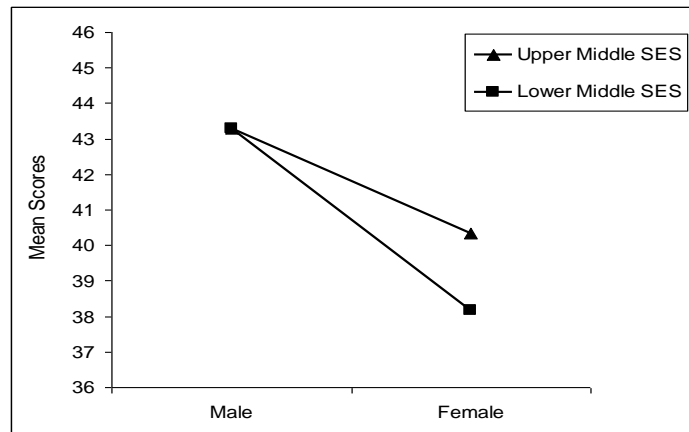
TABLE 6: SHOWING OVERALL CELL MEANS AND THEIR SIGNIFICANT MEAN DIFFERENCES OF TWO-WAY INTERACTION INVOLVING GENDER AND SES ON THE SCORES OF INTERNAL-EXTERNAL CONTROL OF PERSONALITY SCALE (N=60 FOR EACH GROUP).

Gender	SES	
	<u>Upper Middle SES</u>	
Male	43.29 _a	43.29 _a
Female	40.33 _b	38.16 _c

Note: Common subscripts do not differ significantly. Mean differences were computed using Newman-Keuls formula. $p < .01$.

The interaction effect has been graphically plotted in Figure - 2.

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FIGUR 2: TWO-WAY INTERACTION EFFECT BETWEEN GENDER AND SES.

The present study has focused on exploring the locus of control in cancer and cardiac patients as a psychological phenomenon in comparison to certain socio demographic factors like gender and SES. The first prediction of the present study was that both cancer and cardiac patients would be more externally controlled as compared to normal individuals .The findings of the present study have provided empirical confirmation to this hypothesis. The results reported (Table 1) that regardless of gender and SES, cancer patients were more externally controlled on personality I-E factor followed by cardiac patients and least by normal individuals (Table 2). These findings may be supported from various research evidences. Wallston and Wallston’s (1982) study showed that internally controlled cancer or cardiac patients knew more about their particular medical problems and sought more information from their physicians than did external patients. Nelson’s (1990) study showed that subjects with high self-esteem had more intrinsic religious orientation and were less depressed due to cancer or cardiac disorders. Kessler and Neighbors (1991) explained that externals have more disease prone personality than internals and they respond to chronic illness with negative emotions and unhealthy behaviour patterns resulting in cancer and coronary heart disease and a shorter life span. Landreville and Vezina (1994) found that cancer patients who are more externally controlled than cardiac patients may be regarded as neurotic, maladjusted & pessimistic individuals because of their illness. Clements (1999) mentioned that cancer or cardiac patients whose religious motivation tend to be primarily intrinsic fear certain aspects of death due to their chronic illness than do patients who tend to be more externally

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controlled extrinsic in their religions orientation. Cardiac patients, on the other hand, are also but they are less externally controlled than cancer ones. In most cases, Type A individuals are the victims of CHD than those of types B's. Though both cancer and cardiac patients feel that only physicians can control their health but this tendency is more pronounced in cancer patients than cardiac ones. Studies by Friedman *et al.* (1984) showed that in many cases cardiac patients can develop a number of control-related beliefs with respect to their disease if they are trained in self-control and goal-setting behavior. Taylor *et al.* (1984) explained that in many situation externally controlled cardiac patients can present a essence of the disease through good habits or even sheer forces of will which is quite impossible for externally controlled cancer patients because they are so much dependent on their physicians about their disease and they respond to the social and environmental stressors by creating negative affect and negative cognitions. Cardiac patients may believe that by avoiding stressful situations, they will avoid exacerbating theirs disorder. Friedman *et al.* (1984) explained that perceived control, that is, a general need to control one's physical and social environment is more readily observed in a cardiac patient than a cancer patient.

As a result, instead of being externally controlled, cardiac patients, in many cases, might influence the probability of becoming ill, can process the incoming information of the environment, attend to whatever physical symptoms are present and also can interpret them; but cancer patients are incapable of doing these activities because of their extreme fear, anxiety, depression & hopelessness about their disease and they believe that their life activities may be permanently curtailed by the disorder. As a result, they expect sympathy, sought support from their surroundings and become highly dependent on their physicians to get treatment of their chronic illness. For these causes, they are more externally controlled than cardiac patients (Burish and Bradley 1983). Lewinshon *et al.* (1991) found that cancer patients sought medical help more frequently and were high in dependency than cardiac patients who were comparatively low in dependency and sought less medical help from their doctors about their disease. Thus, the hypothesis that both cancer and cardiac were more externally controlled as compared to normal individuals has been confirmed (**H₁**).

The second prediction of the present study was that female patients would be more externally controlled as compared to male patients. The findings of the present study have provided empirical confirmation to this hypothesis. The results reported (Table 1) that regardless of type of individual and SES, female patients were more externally controlled as compared to their male counterparts (Table 3).

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This finding may be supported from various theoretical imports as well as empirical studies. Elmore and Tursky (1978) found that in their way of establishing good health habits or breaking bad one's being influenced by parents or relatives, women are more likely to follow a physician's advice to stop smoking than do males. Kanner *et al.* (1981) found that women view the diagnosis of cancer as a death sentence, loses interest in daily events and become fully dependent on their physicians, whereas a man views coping with his cancer as a challenge and finds that the daily events take on new meaning.

Individual differences in response to potentially stressful events are so varied that many psychologists have concluded that the key aspects of stress are psychological and cognitive. Miller *et al.* (1998) mentioned that the decision to seek or not to seek medical help is influenced by personality dispositions. They explained that female cardiac patients may usually be regarded as high monitors and they constantly lookout for threatening information of any kind, and they are more likely to make a doctor's appointment in response to their chronic illness than their male counterpart who may be regarded as low-monitors. Feifel *et al.* (1987) in one of their studies showed that female patients sought medical help more frequently and were high in dependency than their male counterparts who were low in dependency and sought less medical help from their physicians because of their chronic illness like cancer or coronary heart disease. Thus, the hypothesis that females would be more externally controlled as compared to males has been confirmed (**H₂**).

The third prediction of the present study was that lower middle SES individuals would be more externally controlled as compared to upper middle SES. The findings of the present study have provided empirical confirmation to this hypothesis. The results reported (Table 1) that regardless of type of individual and gender, lower middle SES individuals were more externally controlled as compared to upper middle SES (Table 4). The findings may be supported from various theoretical imports as well as empirical studies. Strickland (1979) has shown that lower middle SES people may usually be regarded as externals and upper middle SES may be regarded as internals. In one study these researchers, have shown that upper middle SES people are more likely to reduce or quit smoking and can develop a positive self-concept about diseases more easily than do lower middle SES people. Wallston and Wallston (1982) showed that upper middle SES individuals have more positive attitudes than lower middle SES people about physical exercise and cardiovascular fitness. As a result, any change of attitudes for individual or society to develop positive affect and positive

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cognitions is highly accepted by the upper middle SES people. Krohne (1996) found that because of their poverty, financial stress, lack of proper education and faulty development in early childhood, lower middle SES people always have a pronounced tendency to be influenced by powerful others and chance with the expectation that powerful others can help them to lead a healthy life. Lower middle SES people also know less about the conditions that cause poor health and to be less likely to take steps to improve or maintain their health to get rid of chronic illness like cancer or cardiac disorders (Table 5 and 6). Wallston and Wallston (1982) found that upper middle SES people were encouraged more by their parents when they were children to follow a good diet, to get regular exercise and to have regular medical checkups. As a result, they have learned to develop positive self concept, positive cognitions, positive affects and a perceived self-control about themselves in stressful situations than do lower middle SES people. Thus, the hypothesis that lower middle SES individuals would be more externally controlled as compared to upper middle SES individuals has been confirmed (**H₃**).

In conclusion, this study focuses some light about the relevance of locus of control in cancer and cardiac patients that appears to moderate and integrate the effects of gender and SES differences on developing differential control beliefs among them. Thus, it is hoped that in the absence of any specific study in the area of locus of control among chronically ill patients at the homogenous cultural context of Bangladesh, the investigation might provide valuable insights to the future researchers for making conclusive and valued generalizations in this important area of research and promotion of medical counseling.

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