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A STUDY INVESTIGATING ADJUSTMENT TO DISEASE IN CANCER PATIENTS

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This study was conducted to measure the predictors of mental adjustment in adult cancer patients. A total of 70 cancer patients (males= 29, females= 41) suffering from either Leukaemia or Lymphoma and visiting the OPD of the Shaukat Khanum Memorial Cancer Hospital and Research Centre between January-June, 2002 inclusive were interviewed using the Mental Adjustment to Cancer (MAC) scale (Watson, Greer, & Bliss, 1989). The MAC consists of five subscales: Fighting Spirit, Fatalism, Avoidance, Helplessness/Hopelessness and Anxious Preoccupation. The Eastern Cooperative Oncology Group (ECOG-PS) Performance Status Scale was also used to look at the relationship between mental adjustment and performance levels of the patients. A series of multiple regression analyses showed less fighting spirit in women and poor patients. Those with better functioning level were found to be high in fighting spirit, whereas those with low levels of performance possessed greater fatalistic attitude. Education was a significant predictor of helplessness/hopelessness with less educated patients showing more helpless attitude. As compared to Western populations, the current sample showed significantly higher scores on Fighting Spirit and Anxious Preoccupation, whereas they obtained lower scores at Fatalism and Submissive Acceptance. Moreover, patients with higher adaptive adjustment reported better level of performance while maladaptive adjustment was correlated with poor performance. Given the importance of fighting spirit for positive functioning as well as the vulnerability of certain subgroups to develop certain maladaptive modes of adjustment, it is suggested that the counselors assist the susceptible ones in adopting more healthy and adaptive ways of coping with the disease.

Like all chronic illnesses, cancer involves a series of threats and difficulties that often get worse over time. As medical treatment is getting more effective with the passage of time, cancer is increasingly becoming a chronic, rather than a terminal, illness, and adaptation remains a long-term problem for patients and families. Therefore, patients' responses have become more important in moderating their stress of and adjustment to the disease (Beckham, Burker, Lytle, Feldman, & Costakis, 1997). How well patients adapt to having cancer can have medical consequences and thus can affect the progression of the disease. Individuals who experience high levels of stress and do not cope well show poor immune system activity (Levy, Herberman, Malwish, Schlien, & Lippman, 1985; Kiecolt-Glaser & Glaser, 1986). There is evidence that feelings of hopelessness and passive life style may contribute to the growth of cancerous cells (Schmale & Iker, 1971). Locke and Gorman (1989) have indicated that besides emotional restraint, other psychological variables suspected as possible contributors to cancer are sense of helplessness/hopelessness and the experience of severe personal loss.

Studies have reported high frequency of adjustment problems in cancer patients. The Psycho-Oncology Division of the National Cancer Centre Research Institute East (NCCRIE), established in 1997, conducted a number of studies on cancer patients (National Cancer Centre Research Institute, 2001). The common feature of

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these studies include measurement of anxiety, depression, behavioural and social problems, emotional distress, family support system and patients' mental adjustment to the disease. According to their report, in 1998 about 329 cancer patients consulted the Psycho-Oncology Division. Of these patients, 80.5% were in-patients; the most common psychiatric diagnosis was adjustment disorder (43.2%); the next common diagnoses were delirium (16.7%) and major depression (7.9%). These three mental disorders accounted for approximately two thirds of psychological problems in referred cancer patients. The most common cancer site in referred patients was lung, while the next most common was breast.

Many studies have reported a lot of mental distress in cancer patients (Skarstein, Aass, Fossa, Skovlund, & Dahl, 2000). The diagnosis of cancer itself can cause feelings of helplessness and loss of control (Astin et al., 1999) that have been found to be related to anxiety, depression and poor prognosis among cancer patients. However, mental distress in cancer as well as prognosis of the disease have been reported to be largely determined by the patients' attitude toward cancer. Adaptive and maladaptive coping attitudes, in this regard, are associated with different outcomes. For example, problem focused coping is linked with less distress (Ben-Zur, 1999), while emotion focused coping is associated with depression and anxiety (Lazarus & Folk-man, 1984). Similarly, use of denial as coping to cancer has been found to be linked with severity of the illness (Ben-Zur, 2001). Moreover, better performance in patients is an indicator of fighting attitude (Psycho-Oncology Division, 1997).

Research has also addressed the role of demographic and psychological variables in the connection between coping behaviour and therapeutic outcomes. Some subgroups of the population are able to make the better use of adaptive coping, whereas other employ the maladaptive adjustments more often. Moreover, people use psychological strengths, personal and social resources which enable them to maintain a sense of well being in the face of a diagnosis of cancer.

The Psycho-Oncology Division (1997) conducted studies on predictors of patients' mental adjustment to cancer. These studies investigated the role of demographic variables and social support factors in several dimensions of adjustment. The results suggested that size of household (not living alone), better performance status, presence of support from physicians and greater satisfaction with support were predictive of patients' fighting spirit, the most adaptive adjustment, whereas older age, lower education, size of household (living alone), worse performance status and lower satisfaction with support were predictive of helplessness/hopelessness, the most maladaptive adjustment. Study of predictive factors for psychological distress in ambulatory lung cancer patients indicated that female gender, living alone, no children in the role of confidant, nurses as confidants and helplessness/hopelessness as a coping style were predictive for psychological distress. Another study highlighting the effect of demographic variables on psychosocial adjustment reported that the female and older cancer patients made greater use of anxiety and depression to deal with the threat of their cancer (Skarsteins et al., 2000).

Apart from demographic variables, studies have demonstrated the importance of several other indicators of adjustment in cancer. For example, Beckham and colleagues (1997) studied the relationship between cancer self-efficacy and patient cancer adjustment, depression, psychological distress and behavioural dysfunction in 42 cancer patients recruited from a Veterans Administration Medical Centre, Durham, North Carolina. Their results revealed that the coping to cancer namely fighting spirit was negatively correlated with depressive mood and that support

from physician and satisfaction with social support predicted the fighting spirit. The patients whose self-efficacy expectations regarding cancer symptoms were higher, also had better cancer adjustment, less psychological distress and less behavioural dysfunction. Age was significantly related to cancer adjustment and negative affect, with younger age associated with better cancer adjustment and greater negative affect.

A few empirical investigations of individual and psychological variables related to adjustment to cancer have been reported so far. Although there are some attempts in Pakistan to assess the levels of mental distress in cancer patients. (Kausar & Ilyas, 2000), to our knowledge patients adjustment to cancer has not been investigated. The current study was conducted to find out the levels as well as predictors of adaptive and maladaptive coping attitudes in cancer patients. Identification of risk populations using maladaptive modes of adjustment more frequently would help physicians target the vulnerable groups and initiate interventions accordingly.

This work was thus conducted with the following objectives:

1. To assess the degree of adaptive and maladaptive adjustments in cancer patients.
2. To find out the predictors of different modes of adjustments.

Method

Sample

This being a prospective study targeted all patients who visited the OPD of Shaukat Khanum Memorial Cancer Hospital and Research Centre during January-June, 2002, and who had been suffering from leukaemia or lymphoma.

Ideally, one type of cancer patients would have constituted a better sample due to the heterogeneity of the disease in history, course of the disorder and response towards treatment. Regretfully, this was not possible as it would have generated a small sample in the limited time available for the current work. Moreover, in-door patients were not suitable for this work due to the following: (a) they were limited in number; (b) they belonged to diverse groups of cancer.

Leukaemia and lymphomas constitute only a small proportion of all malignant diseases. Both of them share common origins but are heterogeneous group with a natural history resulting in survival ranging from a few months to several years.

As both are responsive to chemotherapy and radiotherapy, many patients with leukaemia and lymphomas may survive. A total of 70 cancer patients satisfied the following inclusion criteria.

1. Patients suffering from leukaemia and lymphoma.
2. Out-door cancer patients.
3. Patients agreeing to give written consent to participate in the study.
4. At least 8 years of schooling to understand the questionnaire items.
5. An age of 18 or above.

Instruments

The following tools of measurement were employed in this research:

A. Demographic Questionnaire

Demographic details about gender, age, education, marital status and monthly income were obtained on a separate sheet. Occupation was used as the basic indicator of social class, which was determined following the Standard Occupational Classification (Office of Population Censuses & Surveys, 1995). The patients were classified into different classes by the manual or non-manual employment. If, however, the patient was not working, his or her father's occupation was considered. If the father or husband had expired or retired, their occupation before their death or retirement was considered. The patients included in the study belonged to the fol-

lowing social class categories: II, IV and V. As there was only one patient belonging to high social class, that was also included in class II category; the last two categories were considered as belonging to lower class.

B. Mental Adjustment to Cancer Scale (MAC)

The MAC scale was the main instrument used for measuring attitude towards cancer, adaptive and maladaptive, to deal with the stress associated with the disease. The MAC (Watson, Greer, & Bliss, 1989) consists of five subscales: Fighting Spirit, Fatalism, Avoidance, Helplessness/Hopelessness and Anxious Preoccupation. Although avoidance also does work for many patients, fighting spirit is considered the most adaptive coping attitude towards cancer. The other three adjustment responses are considered maladaptive.

The full scale has total of 40 items, and each item is answered on a 4-point Likert scale, where a score of one indicates that the item does not apply, whereas a score of 4 indicates that the item definitely applies to the respondent. The subscale of Fighting Spirit (FS) included 16 items (4,5,6,11,13,16,18,20, 26,27,28,31,32,34,39 & 40), Helplessness/ Hopelessness (H) 6 items (2,9,17,23,25, 36), Anxious Preoccupation 9 items (1,3, 10,14,19,21,22,29,37), Fatalism 8 items (7,8,12,15,24,30,33,35) and Avoidance 1 item (38). The cut-off scores, as reported by the authors of the scale, for the Fighting Spirit, Helplessness/Hopelessness, Anxious Preoccupation, Fatalism and Avoidance are 47,12,25,22 and 4 respectively. Persons scoring equal to or more than these cut-off scores are interpreted as possessing the attitude measured by the particular scale.

The detailed description of the subscales is given below:

1. Fighting Spirit refers to the strength of the patient to challenge the disease. Patients possessing this skill find out as much as possible about their condition, demand a say in choice of treatment, and often seek out complementary therapies in which they themselves can take an active role, for example, adopting new diet, exercise or undertaking a course of psychotherapy. They are resolved to live as fully as possible, often aiming towards defined practical goals. An example item is, I'm determined to live for my daughter's wedding (who is 3 years old).
2. Helplessness/Hopelessness refers to a passive giving-up in the face of the cancer. Patients feel overwhelmed by their illness and make the little effort to cope or adjust. They usually go along with whatever treatment is recommended but take no initiative of their own, for example, not reporting a new symptom unless specially asked about it. They may abandon their work and their hobbies long before advancing disease, for example, I can't see any future, this seems like the end of the world.
3. Anxious Preoccupation is self explanatory. Patients, even if objectively in remission, are constantly thinking about cancer and interpret every minor physical change as a sign of relapse.
4. Fatalism (previously called stoic acceptance) is the most commonly found in cancer patients. It indicates that the patients acknowledge the seriousness of their illness but submissively accept it as their fate, with little or no show of emotional distress, and carrying on their lives as before. An example of the item is: I know it is cancer but I can't do much about it, so there is no point getting upset.
5. Positive avoidance (previously called denial) involves playing down the threat of the illness, for example, they haven't said what's wrong but its probably nothing much anyway.

The MAC scale has been standardized with 235 British patients with various types and stages of cancer. The authors (Watson et al., 1989) of the scale report that the items of the scale appear to be easily understood by and acceptable to pa-

tients. Data relating to reliability and internal consistency provided by the authors indicate that the MAC scale is a valuable research tool for clinical studies of patients' psychological adjustment to cancer. According to Greer, Moorey, and Watson (1989), the level of agreement between the MAC scores of 52 cancer patients (aged 20-70 yrs) and clinical ratings of 2 psychiatrists was sufficiently high (79%), except for the avoidance category. They suggested, therefore, that the fighting spirit, fatalism, anxious preoccupation, and helplessness coping styles, but not denial, can be measured with reasonable accuracy by the MAC scale.

This scale, although originally developed to use with the cancer patients, has also been effectively employed with patients suffering from other physical disorders, e.g., HIV (Ross, Hunter, Condon, & Collins, 1994).

Originally designed with British patients, the scale has been used effectively with Australian (Ross et al., 1994), US (Schwartz, Daltroy, Brandt, & Friedman, 1992) and Italian (Grassi & Watson, 1992) patients showing the wide-spread use of the MAC.

As this scale has been designed and standardized for a Western population, its items as well as cut-off scores can not be assumed valid for the current sample of Pakistani patients living in a different socio-cultural environment. It was pertinent, therefore, to adapt the scale for the current sample. In the first step, three bilingual speakers translated the scale from English into Urdu. The translations which best described the meaning of the items were picked by the main author. Secondly, to determine the clarity of the MAC scale items for the current sample, the scale was administered to 10 cancer patients (obtained from the same hospital but not a part of the current research) and to 10 healthy visitors or family members of the patients. As no body reported any problem in understanding any of the items, all items were kept as they were.

ECOG Performance Scale

Patients' performance level was assessed using the Eastern Cooperative Oncology Group Performance Status (ECOG-PS) scale (Oken et al., 1982). It measures the performance level of the patients during their disease. This scale measures 5 traits which are given below along with their key:

0= Fully active, able to perform all pre-disease activities.

1= Carry out work of light or secondary nature, light house work.

2= Capable of self-care but unable to carry out any work activities up and about 50% of waking hours.

3= Capable of only limited self care, confined to bed or chair 50%of waking hours.

4= Completely disabled, can not carry out self-care, confined totally to bed or chair.

This description shows that the lesser score on this scale will indicate the better performance status, whereas the higher score will demonstrate the otherwise. Each patient is placed in one category on the basis of the performance status of the patient which is assessed using the description provided in each category. The category position refers to the score of a patient. This assessment is made by the interviewer/ physician who can ask a number of questions related with the category description. This scale has often been used in the Shaukat Khanum Memorial Hospital to assess the performance status of the patients; hence the problem of reliability should not arise for using this scale with the current sample.

Procedure

All the patients who agreed to participate and who satisfied the inclusion criteria were informed about the purpose of the study and were assured that their responses will be kept confidential, and their identity will not be disclosed. Their consent was obtained on a form before

carrying on the interviews. All the patients were interviewed to ensure the uniformity in the procedure for both less and more educated. The interviews were conducted by the second author (FT), a Masters level psychology student. The patients were interviewed using the three measures in the following order: demographic questionnaire, the MAC scale and the ECOG-PS scale.

To understand whether patients scored more or less than the cut-off scores of the MAC subscales, one-sample t-tests were computed. To find out the best predictors of all dimensions of adjustment, a set of multiple regression analyses were conducted with demographic variables and performance level as the predictors. A correlation matrix was obtained to look at the relationship of performance with different indices of adjustment.

Results

Data analysis was conducted using the SPSS for windows (version 10.00). There were more women than men in the current sample of cancer patients. The age ranged from 18 to 75 years for total sample. Separate age analysis for men and women showed that women (n = 41, M = 40.80, SD = 13.89) were older than men (n = 29, M = 35.31, SD = 13.29). Majority of the patients were married, belonged to middle social class, uneducated or educated up to primary level.

To determine the reliability of the MAC to use with the current sample, the Cronbach's alpha coefficients were computed. The item subscale correlations ranged from .55 to .76 and showed the reasonable internal consistency of the subscales. Cronbach's alpha for the entire scale was not calculated as the sub-scales were measuring different constructs.

To find out the better predictors of adjustment, a series of step-wise multiple regression analyses were conducted. The dependent variables were all dimensions of adjustment and coping, while all demographic variables including gender, income, education (number of years of education), marital status and age as well as level of performance served as the independent variables. Except gender and marital status, all independent variables were continuous and thus justified the use of a regression analysis. The variables of gender and marital status, however, were treated as dummy variables; coding in the case of gender was conducted as male versus non-male, and in the case of marital status as married versus non-married. Level of performance can have a two-way relationship with all indices of adjustment, for example, lower performance status can reduce fighting spirit, and alternatively low levels of fighting spirit can decrease one's functioning. However, as it has been used by almost all researchers as the predictor variable, the same procedure was employed in this study.

The results of these analyses showed that the predictor variables did not bring a significant change in scores of either avoidance or anxious preoccupation. However, predictor variables showed some significant association with the other predicted variables. For example, ECOG-PS, gender and income level could bring significant change in scores on fighting spirit. ECOG-PS appeared to be the best predictor as it was the only variable that was entered in the regression equation on the step 1, Gender and income level were entered on the second and third step. Table 1 shows that the ECOG-PS alone could bring 13% variation in scores of fighting spirit, while the three predictors together could induce 27% of such variation. Years of education and ECOG-PS appeared to be the only predictors of helplessness and fatalism respectively in patients indicating more helplessness in less educated ones and the more fatalistic attitude of patients with lower level of functioning. The adjusted R^2 for these analyses suggest that education and ECOG-PS level could bring 12% and 10% change in helplessness/ hopelessness and fatalism

Table 1

Summary of Step-wise Regression Analysis for Variables Predicting Adjustment to Cancer

Variables	ß	*SE* ß	ß
Step 1	**Fighting Spirit (FS)**		
ECOG- PS	-1.98	.64	-.36**
Step 2			
ECOG-PS	-1.90	0.61	-.34**
Gender	2.94	1.06	-.30**
Step 3			
ECOG-PS	-1.73	.59	.31**
Gender	3.01	1.03	.31**
Income	2.45	1.11	.24*
	Hopelessness/Helplessness (H/H)		
Education	-1.32	.58	-.27*
	Fatalism		
ECOG-PS	.71	.33	.25

Note: FS = R^2 = .13 for step 1 ($p < .05$). R^2 = .19 for step 2 ($p < .001$). R^2 = .27 for step 3 ($p < .001$).

scores. Table 1 presents regress-ion data only for the significant predictors.

To supplement the regression findings, a correlation matrix of all variables used in this study was obtained. It is important to mention here that for continuous variables, Pearson Product Moment correlations were computed, while for other (one variable continuous and the other dichotomous) point bi-serial correlations were computed. Significant positive correlations of fighting spirit with income level and ECOG-PS supported the regression finding. It is important to mention here that low score on performance variable indicated better performance. These results indicated that being a male, better functioning level and more income were associated with greater fighting spirit.

Years of education showed an inverse relationship with helplessness indicating more of this attitude in less educated. Similarly, ECOG-PS had a positive relationship with fatalism indicating that the patients with less performance level were showing more of a fatalistic attitude.

As displayed in Table 2 the results showed significant positive correlations between performance and helplessness/ hopelessness and fatalism, whereas performance had a negative correlation with fighting spirit. It can be seen in Table 2 that the negative coping skills, anxious preoccupation and helplessness/ hopelessness, were complementing each other, while the most positive skill, fighting spirit, correlated inversely with fatalism, the high scores on which were linked with low functioning. Fatalism and avoidance, as submissive and resigned coping attitudes, correlated positively with each other.

To find out the levels of adjustment in the current sample, a series of one-sample t-tests were computed between the mean scores of the subjects on five dimensions of adjustment and cut-off scale scores. Table 3 shows that the subjects

Table 2

Correlation Matrix of all Variables included in this Study

	Gender	Age	Education	MS	Income	FS	H/H	AP	F	A	ECOG-PS
Gender	1.00	.20	.07	-.34	.04	.31**	-.17	-.07	-.12	-.12	-.08
Age		1.00	.04	.60**	.26	-.04	-.09	-.11	.16	.01	.08
Education			1.00	.04	.41**	.37**	-.28*	-.14	-.25*	.03	-.29*
Marital status				1.00	-01	-.13	.13	.09	.18	.22	-.001
Income					1.00	28*	-19	-18	-15	-07	-15
Fighting spirit						1.00	.49***	-.24*	-.34**	.05	-.34**
Helplessness/ Hopelessness							1.00	.47***	.16	.14	.26
Anxious pre-occupation								1.00	.19	.39***	.01
Fatalism									1.00	.04	.26*
Avoidance										1.00	.01
ECOG-PS											1.00

* $p < .05$. ** $p < .001$. *** $p < .001$.

Table 3

Difference Between Obtained Scores of Patients and Cut-Off Scale Scores

Subscales	Score Range	$\overline{X}$	Cut-off scores	$\overline{X}_{diff}$	*df*	*t*
Fighting spirit	40-60	52.84	47	5.84	69	10.19**
Helplessness	6-24	12.53	12	0.53	69	1.17
Anxious preoccupation	18-38	27.53	25	2.53	69	4.70*
Fatalism	13-25	20.43	22	1.57	69	5.38*
Avoidance	1-4	2.26	4	1.74	69	17.59**

* $p < .05$. ** $p < .001$.

had significantly higher fighting spirit and anxious preoccupation. However, the sample scored lower on fatalism and avoidance. Although mean differences on fatalism and avoidance were considerably small, they generated large *t* values due to a very small standard error. On hopelessness/helplessness, the difference was not significant.

Discussion

This study attempted to investigate an important health problem that has remained so far unattended in Pakistan. The main findings of this work are that the present sample of cancer patients reported a higher level of fighting spirit and anxious preoccupation, and lower levels of fa-

talism and positive avoidance, and also that the membership of certain subgroups like gender, income and education groups could affect different dimensions of adjustment in cancer patients. Moreover, level of one's performance could also affect these adjustments.

Among demographic and performance variables, only selective predictors significantly contributed to different dimensions of adjustment and coping. Although both men and women possessed higher levels of fighting spirit, men scored significantly higher than women on this very adaptive coping attitude. Men are usually the only bread winners in Pakistani families, and thus they have to look after all the financial needs of their relatives. The higher levels of fighting spirit in them may be perceived as an adaptive strategy indicating their determination to support their families.

The finding of women as being less capable to challenge the disease is in agreement with previous reports. In an earlier study, 79.1% men showed ability to cope with day-to-day stress as compared to 65.9% women (National Centre for Health Statistics, 1996). A later study interviewed 1100 patients between ages 25 and 75 years from three ethnically diverse California cities. The findings suggested that women more often than men get caught in a cycle of despair and passivity because of the interaction of lower mastery over important areas of life and more chronic strain and rumination (Nolen-Hoeksema & Larson, 1999). A number of studies have also shown greater levels of subjective distress in women. For example, Mumford, Saeed, Ahmad, Latif, and Mubbashar (1997) found higher rates of depression and anxiety in women (66%) as compared to men (25%), when they employed a somatic inventory to detect affective symptoms in a rural village of Punjab, Pakistan. Also from an Indian village, a higher lifetime prevalence of affective disorders in women (36.8%) as compared to men (19.3%) has been reported (Kinzie et al., 1992). It may be hypothesized that the higher incidence of subjective distress so frequently reported in women may have reduced the fighting spirit or ability to challenge the disease.

The perceived lower level of control in women is often attributed to stressful life circumstances women are generally exposed to. Nolen-Hoeksema and Larson (1999) reported that women in their sample had carried a greater load of the housework and childcare and more of the strain of parenting than had men. Comparing life events of men and women Marsh (1993) points towards discrimination in employment and economic inequality along with an ideological system that fosters male dominance. The author perpetuates the myth of male superiority and female helplessness and suggests a grass roots effort to change the systems, rules, and policies of the criminal justice system, media, and education system that foster and support racism, sexism, and class inequality.

Although women also showed greater symptoms of helplessness and hopelessness than their respective counterparts, the difference did not reach statistical significance. The negative correlation between fighting spirit and helplessness, however, indicates that the one with higher adaptive skill may be lower on the maladaptive coping attitude.

A comparatively lower level of fighting spirit in women is no exception in a culture where women are granted a secondary social role and submissive behaviour is expected and appreciated in them. Considering the association of greater fighting spirit with low distress and better performance, counselors working with cancer patients should endeavour to enhance this attitude, especially in women patients.

ECOG-PS was found to be a significant predictor of both fatalism and fighting spirit; a negative correlation between ECOG-PS and fighting spirit and a positive correlation between ECOG-PS and

fatalism showed that patients who had higher levels of performance possessed greater fighting spirit, and those with lower level of performance had more of a fatalistic attitude. This indicates that patients with better functioning were able to challenge the disease, while those with poor functioning used to accept it.

Income was another variable which contributed significantly to fighting spirit. A positive correlation between the income level and this attitude shows that the patients with more income possessed greater fighting spirit. Cancer requires a very expensive and long duration of treatment, hence it should not be surprising if fighting spirit of those, who are unable to meet the expenses associated with this disease, is abridged. This association is also alarming as less fighting spirit was also found to be associated with more helplessness and anxious preoccupation (see Table 2 for these correlations). Linking depression and learned helplessness, Paterson, Maier, and Seligman (1993) indicate that maladaptive passivity follows exposure to uncontrollable aversive events, and people with low social class have been reported to be more susceptible to depressive affect due to their greater exposure to adverse life events (Da-Canhota & Piterman, 2001).

The results of regression analysis with helplessness and hopelessness as dependent variable indicate that those with lower levels of education possessed greater levels of helplessness/hopelessness. Given a positive correlation between income and education, it seems quite likely that the poor again will be at risk for helpless and hopeless attitude.

Several explanations can be presented to clarify less feelings of helplessness in more educated: (a) educated ones will be able to understand their disease in a better way by reading and discussing with doctors; (b) more qualified patients may have been able to cope with their feelings more effectively; (c) as the more educated were also financially well off, less helplessness in them may be showing their sense of control over the disease.

The higher levels of fighting spirit in the present sample is a very positive indication concerning the reported therapeutic effects of this attitude (Beckham et al., 1997). The fighting spirit like attitude has been found to be linked with better outcomes in cancer. Moreover, it has been reported to be inversely linked with depressive mood and anxious preoccupation (Fitzpatrick, 2000, Psycho-Oncology Division, 1997). It has been suggested that the emotion-focused coping, such as ventilation and disengagement, are the behavioural/ cognitive variants of coping expected to be used when the situation is uncontrollable (Lazarus & Folkman, 1984). Feelings of hopelessness and passive life style are not only associated with negative outcomes in cancer, but also are related to pessimism and low control (Craver, Scheier, & Weintraub, 1989) and to general anxiety and depression on the individual level (Ben-Zur, 1999). In a more recent report, global severity index was found to be positively correlated with denial (Ben-Zur, 2001). On the other hand problem focused coping, like fighting spirit is usually found to be correlated with optimism and high control (Craver et al., 1989). Studies have also stated that problem-focused coping is linked with low distress as well as better performance (Ben-Zur, 1999).

Consistent with these reports, the current findings of negative correlations of fighting spirit with helplessness/hopelessness, fatalism and anxious preoccupation suggest that fighting spirit may act as a buffer against negative affect and submissive acceptance. Moreover, an association between the presence of fighting spirit and better performance in patients also are congruent with previous research (Psycho-Oncology Division, 1997). It is difficult to determine the causal relationship in correlational studies. However whatever is the causal agent, strategies to enhance fighting spirit may be employed

to increase the functioning of cancer patients.

Although people possessing greater fighting spirit were lower on anxious preoccupation (indicated by the negative correlation between the two), the current sample on the whole scored higher on both fighting spirit and anxious preoccupation. This shows that many were also using anxious preoccupation to combat the stress of the disease.

Consistent with these findings, previous reports have also shown higher levels of personal distress in cancer patients. Eysenck (1965) concluded, after reviewing 40 studies on personality characteristics of cancer patients, that they tend to do more of the following: suppress anger or anxiety, cope poorly with stressful situations, suppress appropriate assertiveness and feel hopeless, helpless and depressed.

The low frequency of other coping strategies, fatalism and avoidance, lend further support to previous work in suggesting that the fighting spirit attitude is typically contrasted with a less adaptive yielding mode, a timid, passive, helpless, resigned, and avoidant coping style (Classen, Koopman, Angell, & Spiegel, 1996). This finding, however, is not in agreement with a previous report. Fitzpatrick (2000) maintained that despite the commonly held view of fatalism, this adjustment style seems to be associated with better psychological outcome, coping, and quality of life, thus may have positive, health-affirming effects for women dealing with breast cancer. Although avoidance, previously called denial, and fatalism may work for a patient, who is not able to challenge cancer, by playing down the threat of cancer, fighting spirit is generally considered a more adaptive adjustment. The high frequency of fighting spirit as compared to less adaptive strategies in the present sample of patients suffering from a devastating disease is very encouraging, and is suggestive of the possible involvement of many factors, for example, family or physicians' support in hospital, better treatment and counseling facilities available at the cancer hospital, etc.

Although these comparisons between two different groups with different sociocultural context may not be very valid, these findings, nevertheless, are interesting. The greater fighting spirit in this sample may be due to the extended family system and a powerful support system, an essential ingredient of Pakistani culture. There is considerable evidence in literature that the extended family system of Asian families provides stability and support to the members, and thus is able to diffuse burden and increase tolerance (Birchwood et al., 1992). It may be hypothesised that due to this social support and encouragement, patients do not need to either adopt a fatalistic or avoidant attitude to combat the stress of their disease.

Considering the advantageous effects of fighting spirit, counselors dealing with cancer patients should work on strategies for the enhancement of this coping attitude is evidence that adopting a fighting spirit towards the illness is psychologically adaptive and thus predicts psychosocial adjustment, whereas denial or fatalism is maladaptive (Astin et al., 1999).

The study was limited in several ways. For example, patients were different in their duration of illness which may have affected their adjustment to the disease. Moreover, the main instrument of the study, MAQ, was standardized for a Western population and the cut-off scores used in the current work were based on the scores of Western cancer patients. The items used in different subscales may also not be suitable for measuring different dimensions of adjustment in this sample. The appropriate levels of reliability coefficients, however, indicate some validity of the subscales for the current sample. Another limitation of this study is that all of the variables were self-reported at a single measurement point. Therefore, an unknown portion of the observed correlations could have been attributable to conceptual and content overlap among the

scale items.

Conclusions

Cancer is considered to be a life-threatening illness that leads to distress in both patients and families. Adaptation therefore is of pertinent importance in dealing with cancer. The present work showed higher frequency of both fighting spirit, the most adaptive coping, and anxious preoccupation, a very maladaptive attitude, in cancer patients suffering from leukemia and lymphoma. Given the negative correlations between fighting spirit and mental distress as well as better functioning of those with greater fighting spirit, future studies should be conducted to determine whether fighting spirit can be enhanced in cancer patients and whether improvements in it can lead to improvements in clinical status. The vulnerability of certain subgroups to develop certain maladaptive modes of adjustment, in an attempt to deal with the threat of cancer, suggests that the counselors working in this profession should initiate interventions to ameliorate the stress of cancer and to assist the vulnerable ones in coping with the disease.

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