

Fun & Humor can Reduce Anxiety & Psychological Distress amongst Cancer Patients

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Abstract

Humor has been acknowledged in different fields especially known as a strong communication tool. However, very little researches are available concerning overcoming the psychological health of cancer patients through involvement in humorous activities. This study has novelty as it investigated the effects of humor on psychological distress and anxiety. The sample of the study was cancer patients who were living in Rawalpindi and Islamabad. Snowball sampling technique was used and the study was cross-sectional. The response rate was 92% as 125 questionnaires were distributed among those 115 selected for further analysis. The data was collected through a self-administered questionnaire from the different hospitals of Rawalpindi and Islamabad. Moreover, the data was collected in two phases. In the first phase, we identified the cancer patients who were having the symptoms of psychological distress and anxiety and in the second phase again data was collected after the humor. Factor Analysis, multicollinearity, linearity, normality, regression, and correlations have been tested and results showed that humor is having negatively significant results on psychological distress and anxiety. Whereas collectivism was taken as a moderator in the current study and we found that it is not moderating between humor and psychological distress as well as between humor and anxiety. The discussion, limitations, and future gaps are also discussed.

Keywords: Humor, Anxiety, Psychological Distress, Collectivism

Introduction

The patients, who suffer from cancer generally, do not lose their physical health but they also get disturbed by their mental health since they feel stress, fear, and uncertainty about their future. Such mental disorders and anxiety affect them even after having recovered from cancer. Such kinds of anxiety and stress can be diagnosed by cancer care professionals during the treatment of cancer patients. Moreover, with the physical bad conditions, such patients also suffer from psychological distress. Psychological Distress is a multifactor unpleasant experience in emotions associated with poor health behavior and lower satisfaction towards life (Hamer, Chida & Molloy, 2009). When a patient gets aware of life-threatening diseases i.e. cancer, aids, etc. then he/ she suffers from an emotional and psychological crisis (Timmermans, 1994). Such kind of crisis disturbs their whole life as well as their wellbeing and lives. Medical practitioners need to identify the factors which can play an important role to overcome psychological problems (psychological distress and anxiety) and motivate cancer patients to cooperate in their treatment. It is not only necessary for medical practitioners rather the social circle of the patients needs to identify the factors which cause happiness, harmony, tranquility, serenity, and mental peace, one of the best sources which can overcome this mental stress is humor.

There are different reviews available in extant literature related to cancer but no study has used humor to reduce psychological distress/anxiety and improve the physical condition of patients. The present study will help the medical practitioners to motivate and incite the patients for treatment and make them cast aside the problem of psychological distress and anxiety. Furthermore, it will also actuate the social circle of the patients to cure them with the use of humor. When Patients are diagnosed with cancer, they feel wretched and uncertain about their life (Borneman, Irish, Sidhu, Koczywas, & Cristea, 2014). Due to such uncertainty, they lose their physical health with an adverse effect on their psychological health experienced from stress and anxiety (Santacroce, 2002). This will lead to unsupported behavior displayed by the patient with the doctors during the treatment. So it is

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important to study the relationship of humor, anxiety, and psychological distress with moderating role of collectivist culture to enlighten the practitioners as well as the social support of the patient to use humor to reduce stress and prepare the patient to undergo painful procedures of treatment. The present study is novel because very few studies are available on humor and its effects on psychological distress and anxiety among cancer patients as well as it has future implications in the clinical treatment of psychological distress and anxiety amongst cancer patients. Moreover, through this study, medical practitioners can apply these techniques to cancer patients. Furthermore, the medical practitioners can motivate the patients for receiving treatment as it has been reported that most cancer patients refrain from getting the treatment owing to the pain and aftereffects which become a major cause of not recovering from the disease even when diagnosed in the early stages. The researchers interviewed few patients at a renowned cancer hospital where the patients reported this fear and anxiety they have. This became an inspiration for the conduct of the present study to introduce humor in their treatment. Even the best clinical guidelines for cancer patients are currently lacking in the identification and treatment of anxiety and psychological distress. Some of the early researches suggested that psychosocial and behavioral interventions for cancer patients are effective for reducing cancer-related problems i.e. psychological distress and anxiety (Hjerl. et.al. 2002; Edelman, Craig, & Kidman, 2000; Rehse & Pukrop, 2003). So there is a need to test the present model with moderating role of collectivist culture which is also having effects on the psychological health of cancer patients.

Pakistani culture defined as collectivist culture is used as a moderator in the present model as the family plays an important role in the life of every individual and people usually take most of their major decisions of life-based on family influence. Therefore the collectivistic culture can become instrumental in strengthening this relationship. Moreover, in Pakistan, it is observed that when the individual suffers from any life-taking disease all his/ her family members and friends help them and share his/ her responsibility along with giving them help in the treatment of the disease. The objective of the study to take collectivist culture as a moderator between humor and psychological distress and anxiety is to empirically validate the role of collectivist culture between humor and anxiety as well as between humor and psychological distress.

The underpinning theory which is supporting the current study is The Relief Theory. This theory is holding the concept that laughter and humor create the mechanism which can reduce psychological distress, tension, and anxiety (Buijzen & Valkenburg, 2013; Meyer & Herrmann, 2000). It can play a vital role in relieving the tension which can cause by fear or emotionally unpleasant feelings.

Literature Review

Humor and Psychological Distress

Martin (2001) explains humor as a complex phenomenon as it involves cognitive, behavioral, emotional physiological, and social aspects. It is a tool that is used to make the audience laugh and decrease boredom to relax the nerves of the individual through jokes (spoken or written words) which create laughter (Critchley, 2002; Ritchie, 2004). Crawford (1994) explains humor as communication that generates a 'positive cognitive or affective response from listeners.' Further as defined by Romero and Cruthirds (2006) that humor is "amusing communications that produce positive emotions and cognitions in the individual, group or organization". Humor can be defined through four types. The first one is affiliative humor. It is a style of humor used to create/ enhance the relationship with others. With this type of humor, individuals amuse others and make them feel good and help to build a better relationship with others, and decrease the level of tension among others. Secondly, self-enhancing humor is a style of humor that is related to a good-natured attitude towards life. Individuals who involve in such kind of humor can positively laugh at themselves. The third one is aggressive humor: this is the style of humor applying to others individuals through using teasing, criticism, putting down, and ridiculing them. The last one is self-defeating humor. It often comes when an individual is using jokes for pleasing other individuals. The individuals share their weaknesses and criticize themselves in the form of jokes. This dimension of humor is generally used by individuals who face a higher level of depression, psychological distress, and anxiety. Psychological distress can be defined as a state of emotional suffering which comes from depression and anxiety and also creates pessimism (Mirowsky & Ross, 2002). As psychological distress is emotional instability, so it has an adverse impact on the social life of individuals (Wheaton, 2007).

Psychological distress, in any individual, who is suffering from any disease which leads to physical issues, is a concerning matter for doctors. It is accompanied by other symptoms because it creates psychological disorder and non-supporting behavior for treatment of the physical issue. In the stress- distress model it was identified that psychological distress is a "transient phenomena consistent with a normal emotional reaction to a stressor. This point was investigated through conducting a series of studies and conclusions were drawn that such things create sorrow and psychological disturbance (Horwitz, 2007). Psychological distress is commonly known as non-specific and related to mental health problems (Dohrenwend & Dohrenwend, 1982). According to the research psychological distress is characterized by depression and stress (Wheaton, 2007), and these symptoms are associated with psychiatric disorders (Payton, 2009)

Humor and laughter are strongly related to relief of tension, stress, and anxiety (Kuiper & Martin, 1998). Tension and stress create psychological distress (Gillis, 1992). Humor appears as relieving tonic against negative effects of stress (Abel, 1998) such as psychological distress. Through humor, an individual can easily overcome feelings of distress as the individual gets involved in-jokes and funny moments. If the medical practitioner uses humor as a treatment tool to overcome the psychological distress during the treatment of cancer then the individual can get better results. It was also observed that during the treatment of cancer if the doctors share the success stories of treatment with patients then it can also motivate the patients for treatment. Humor, no matter where it comes from, (family, friends, or medical practitioners) is really helpful for overcoming the psychological distress in cancer patients. It was observed that when patients get aware of the disease such as cancer they put themselves into anxiety and psychological distress. The results in that they want to live alone, they feel that they are a misfit in society and they avoid their family and friends. For overcoming these problems if their family and friends involve them in social activities then they can reduce the effects of psychological distress as well as their mental health. Humor and psychological distress are having a negative relationship as humor can overcome the intensity of psychological distress. Individual who is suffering from psychological distress as discussed earlier have the unpleasant feeling, if his/ her friends family and doing funny things or share jokes then for some time he/ she forgets the unpleasant feelings about their lives. According to the literature and reasoning have given above, the first proposed hypothesis can be derived as:

H1: *There is a significant and negative relation between humor with Psychological distress.*

Humor and Anxiety

Anxiety and depression are major health problems that affect individuals (Kessler, Merikangas & Wang, 2007). It is a fear about real or imagined circumstances which an individual feels about his life. He puts himself into worries about particular situation which can yield different results. In cancer patients, it is very common because they have no idea whether after treatment of cancer they will remain fit or again suffer from this disease. Most of the time due to this disease individual develops a fear of death. Such awareness creates uncertainty about life (Onwuegbuzie, 1997). Therefore there is a need to investigate the variables which can overcome anxiety in cancer patients because they suffer from disease with an adverse effect on their mental condition. So the present study attempts to explore such variables. Different behaviors can overcome the problem. It is seen that individuals who are hopeful and optimistic generally can think positive about future and life goals (O'Connor & Cassidy, 2007). Such kind of hope and optimism helps them to cope with their disease as well as with trauma in which they are living after awareness of the disease. Moreover, these individuals adopt different strategies for coping with anxiety. Humor is one of them (Ahadi & Rothbart, 1994). By adopting humor strategy, the cancer patients or the patients who are suffering from anxiety feel better psychologically and it improves their physical health (Scheier & Carver, 1992).

Similarly, all other aspects such as laughter and fun are also anxiety reduction tools through which individuals can reduce anxiety and mental stress. Humor is a rapidly growing area for social scientists to relate with psychological and mental health. Even though it is a complex/ multi-dimensional phenomenon (Chen & Martin, 2007) but it is the universal experience of humans to get involved in joyful/ humorous activities (Martin & Kuiper, 1999) to reduce stress and anxiety. Individuals need to cope up with anxiety through adopting coping strategies (Bellizzi & Blank, 2006), and among these strategies humor and socialization is playing an important role. It is known that anxiety is uncertainty about a particular situation. So individuals, who are suffering from anxiety, generally want to live alone because of their psychological and mental condition and this will cause

an increase in anxiety. It disturbs them psychologically; especially when an individual is suffering from a fatal disease i.e. cancer. On the other hand, if the individual adopts self-defeating humor and gets involved in jokes and humor with their doctors and also with their well-wishers it will reduce the effect of anxiety and mental distress. Anxiety creates and enhances the thinking mechanism of an individual because an individual who is suffering from cancer when thinks about his future he gets depressed. His well-wishers must give proper time and involve him in different activities so that he has no time to remain alone and develop negative thinking. Therefore it is pertinent to lighten his mood with some kind of humor. Based on this literature and further conceptualization the proposed hypothesis for humor and anxiety is as under:

H2: *There is a significant and negative relation between humor with anxiety.*

Moderating Role of Collectivist Culture

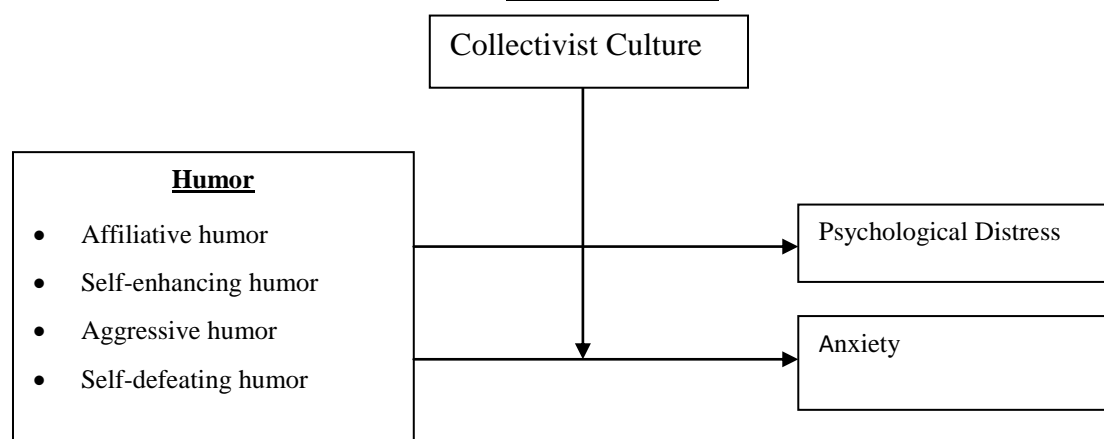
Culture is defined as the learning of the group over a certain period and facing problems of integration and coming out of those problems, surviving in an external environment, etc. (Schein, 1992). Hofstede (1980) identifies four cultural dimensions (Rose, Kumar, Abdullah & Ling, 2008). Cameron and Quinn (1999) developed a comprehensive framework that describes the types of cultures (Cameron & Quinn, 1999; Sagiv & Schwartz, 2007). Most of the researchers of culture have started focusing on identifying the basic cultural values that are the main cause of difference between two or more cultures (Erez & Gati, 2004; Schwartz, 1999). Collectivism plays a vital role at the society and group level both (Vadi, Allik & Realo, 2002). Collectivism involves groups of individuals and their interests to a greater degree. Subjective culture and studies of various cultural groups display variations in collectivism (Triandis, Bontempo, Villareal, Asai & Lucca, 1988).

As Pakistan is the country which is having the collectivist culture, peoples live together, as a society when an individual face some issues regarding health or any other issue all of his/her community helps him/ her for achieving stability. Socialization is the best tact to tackle such situations. If an individual suffers from a fatal disease i.e. cancer, his/ her well-wishers, friends, and colleagues should socialize with him to overcome the effects of cancer on his psychological distress and anxiety. Culture (individualism/ collectivism) can influence the mood/ psychological state of the individual. Moreover, it can help the individual for choosing the coping strategy to overcome psychological distress and anxiety. In a collectivist culture the individual who suffers from cancer, his/ her well-wishers help him during the treatment through different tactics and humor is one of them. Through humor, the patient's family, friends, and society create a supportive environment that helps them for performing daily tasks and even for a daily visit to a medical doctor. Similarly, during the treatment, they motivate them for a healthy life by sharing jokes and performing some funny moments. These things overcome the psychological distress and anxiety from individuals during the treatment. There are sufficient studies available that explain the role of culture in coping with psychological distress and anxiety (e.g. Lam & Zane, 2004; Liao, Rounds, & Klein, 2005). Based on this literature the following hypotheses are developed as

H3: *Collectivism moderates the relationship of humor and psychological distress such that it strengthens it.*

H4: *Collectivism moderates the relationship of humor and anxiety such that it strengthens it.*

Research Model:



Methodology

Research Design

The present study is descriptive. Data is collected through a self-administrated questionnaire. Unit of the analysis is the patients, who are suffering from cancer with having the symptoms of psychological distress and anxiety in a collectivistic society. This is a cross-sectional study and the data was collected in two-time lags. In the first lag we contacted cancer specialists and collected the data from their patients; identify the patients who are feeling psychological distress and anxiety with cancer disease and then implement the use of humor stimuli with the help of cancer specialists and through their well-wishers.

Sampling

The Snowball sampling technique was used for the current study. It is a non-probability sampling technique that helps to identify potential subjects in studies where subjects are hard to locate. The reason behind selecting the said technique is that the respondents of the study are very rare or are limited to a very small subgroup of the entire population. This type of sampling technique works like chain referral. We contacted cancer specialists and through them identified the cancer patients who were willing to participate in the study.

Development of Questionnaire

After identification of the items from the literature review, the conceptual model was validated by interviews with three academicians and four medical practitioners. Items like Humor were adapted from the instrument developed by Martin and Lefcourt, (1984), 32-item scale has been used with having the reliability of .950. For measuring the psychological distress, we used 10 items scale of Kessler, R.C. (1996) and the reliability of the scale is .779. While 10 items scale was used for measuring anxiety through William W.K. Zung, (1971) with having reliability .654. The moderator collectivism was measured through Triandis & Gelfland, (1998), 08 items scale. The reliability of the moderator is .913.

Data Collection Procedure

Data was collected through questionnaires using time lag design, in two phases with a gap of three months between two phases. In the first phase, psychological distress and anxiety-related data were collected through questionnaires. Total 160 questionnaires were floated and we also conducted interviews with the consultation of medical practitioners and afterward 150 usable questionnaires were selected for data analysis purposes. We identified 125 cancer patients who were suffering from cancer and also have symptoms of anxiety and psychological distress. With the help of a medical doctor, humor-related procedures were implemented on identified patients and after three months again we floated 125 questionnaires and 115 were collected back which were finalized for data analysis. The overall response rate was 92%.

Demographic Analysis

This analysis was carried out to know the biographical characteristics of 115 respondents who were cancer patients. To describe the dispersion of respondents all the demographic variables have been summarized in frequency tables. The measured demographic variables in the study are (i) Gender (ii) Age (iii) Stage of cancer (iv) Nature of cancer (v) Time since diagnosis.

The frequency analysis reports gender-wise suggest that 79.1% of respondents were male. Out of the total of 115, 91 were male. On the other hand, the total number of female respondents was 24 in number contributing 20.9% of the sample. Most of the respondents reported their age as (20-30 (12), 31-40 (39), 41-50 (22), and 51-60 (42). The statistics show that (44) 38.3% of patients are having an advanced level of cancer. Whereas 38 and 33 respondents report that they are suffering from the primary and unknown stage of cancer. Unknown stage of cancer means that they don't know about the stage as recently they were diagnosed with cancer. The demographics also have shown the nature of cancer. In which 15 individuals are having prostate cancer, 28 having lung cancer, 16 females are suffering from breast cancer, and 20 patients identified with stomach cancer, and 36 individuals suffering from blood cancer. The study also included demographics that since how much time the individual is suffering from cancer after being diagnosed. The frequency analysis according to the response shows that 11 cancer patients are suffering from the disease less than 3 months, 49 less than 6 months, 8 less the 12 months, 18 less than 1.5 years, 19 and 10 are suffering from the disease less than 2 and 3 years respectively.

Linearity, Normality, and Multicollinearity

It is assumed that there is the presence of a linear relationship between the independent variables and dependent variable and that is the mean value of Y is the straight-line function of X. Linearity of the values was assessed by using the normal P-P plots and it was found in the acceptable range for all the regression analysis. With the help of frequency distribution and histogram, all data entry mistakes were removed. The assumptions of normality were checked and found to meet all the assumptions on the visual inspection of the histogram and normal P-P plots. According to Garson (2009) there will be multicollinearity if the correlation is very high i.e. > 0.80 which means that singularity exists in the variables. On the other side of the tolerance value is < 0.20 and $VIF > 4$ then it can be said that multicollinearity exists. All the result values of the variables were in the acceptable range of Variance Inflation Factor (VIF), Tolerance and Condition Index.

Results

Correlation

Table 4-1 1

Predictors	1	2	3	4	5	6	7	8	9
1. Gender	1								
2. Stage of Cancer	.001	1							
3. Age	.069	-.095	1						
4. Nature of the cancer	.119	-.204*	.122	1					
5. Time Since	-.002	-.167	.074	.699**	1				
6. Humor	.024	-.217*	-.014	.088	.100	1			
7. Anxiety	.015	.267**	-.083	-.109	-.120	-.802**	1		
8. Psychological Distress	.071	.243**	-.104	-.112	-.113	-.764**	.919**	1	
9. Collectivism	.021	-.217*	.103	.068	.089	.847**	-.910**	-.853**	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The results as indicated in the above table shows the correlation among the different variables under study. The table also shows the results concerning the demographic variables showing insignificant results concerning the psychological distress except for Stages of cancer ($r = .243$). Other demographics are having insignificant relationship with psychological distress i.e. Gender ($r = .071$), Age ($r = -.104$), Nature of the cancer ($r = -.112$) and Time since ($r = -.113$). Same as with anxiety only one Stage of cancer is having a significant relationship i.e. $r = .267$. The correlation table also clears that the independent variable (Humor) is having a negative significant relationship with Anxiety ($r = -.802$) and psychological distress ($r = -.764$).

Regression Analysis

Hierarchical Regression analysis for determinants of Psychological Distress & Anxiety

Predictors	Psychological Distress			Anxiety		
	B	R ²	ΔR^2	B	R ²	ΔR^2
Step I:						
Control Variables		.077			.081	
Step II:						
Humor	-.772***	.611	.534***	-.640***	.661	.581***

*** $p \leq .000$, ** $p \leq 0.01$, * $p \leq 0.05$

Moderated Regression Analysis

Predictors	Psychological Distress			Anxiety		
	B	R ²	ΔR^2	B	R ²	ΔR^2
Main Effect: Hope						
Step I:						
Control Variables		.059			.078	
Step II:						
Humor	-.141			-.078		
Collectivism	-.468***	.914	.004	-.419***	.839	.758***
Step III:						
Humor* Collectivism	-.009	.917	.003	-.140*	.851	.012*

*** $p \leq .000$, ** $p \leq 0.01$, * $p \leq 0.05$

H1: *There is a significant and negative relation between humor and Psychological distress.*

Results of the regression analysis show that humor has a significant negative relationship with psychological distress as it has a β value $-.772$ ($p \leq .000$) Thus, the above-stated hypothesis is accepted.

H2: *There is a significant and negative relation between humor and anxiety.*

According to the results of the regression analysis, the value of $\beta = -.640$ at the significance level of $.000$. This indicates the negative significant relationship between humor and anxiety. As per the results, the above hypothesis is accepted.

H3: *Collectivism strengthens the relationship between humor and psychological distress.*

The results show that the proposition of moderated effect of collectivism does not hold correct for the participants of this study. In the current study, results show that collectivism has an insignificant relationship with psychological distress. Thus the hypothesis is rejected.

H4: *Collectivism strengthens the relationship between humor and anxiety.*

The results of this study indicate that this proposed relationship is not true, as it is showing an insignificant relationship in relation to humor and anxiety. Thus the above-stated hypothesis is rejected.

Discussion & Conclusion

The result of regression analysis support hypothesis1: Humor with psychological distress and anxiety is having a negatively significant relationship. This result gets support from some previous researcher's study which concluded that humor reduces the anxiety feeling e.g. Abel, (1998). The medical practitioners are also supportive of the fact that humor can play a pivotal role in improving the psychological health of patients and they suggest different implications of humor related to health outcomes (Martin, 2001). The current study involved humor for reducing feelings of distress and anxiety in cancer patients and found significant results. The individuals who are supporting humor or involve themselves in humorous activities are reporting less psychological distress and anxiety. They feel less fear of death, less negative feelings about life, and witness an increase in a healthy lifestyle. Most of the patients support that they feel good after spending time with their friends and after being involved in humorous activities. When they are with friends or in any other social gathering, they forget about their physical condition or their disease. The cancer specialists also gave views that their patients after putting humor or sharing success stories, visit more people and take proper medicines with having less anxiety and psychological distress. When using humor stimuli on the patients and taking their disease as a normal sickness their anxiety and psychological distress level decreases (H1, H2).

The results of regression analysis reveal that collectivism as a moderator between the relationship of humor and psychological distress as well as between humor and anxiety is not working. The reason behind this result is that Pakistan is an underdeveloped country and most of the people fall into the less income group. According to an economic survey, the per capita income of Pakistan in 2014-2015 was determined as \$1,512/ year (Finance, 2015). Most of the peoples are living collectively in large families and it is observed that whole family depends on one person income. So the individual feels more stressed if they develop a disease that cannot get overcome through humor. In Pakistan as well as throughout the world cancer treatment is very expensive, so when an individual is suffering from such an expensive disease, his/ her psychological condition cannot improve through collectivistic culture support he needs financial assistance. No doubt an individual expects more from his/ her belongingness, need care, love, and humor (Golish, 2003) but when an individual is suffering from a life-threatening disease his/ her family takes it as negative especially in underdeveloped and collectivist society countries like Pakistan. Previous researches on cultural dimensions (Individualism & collectivism) provides a framework for exploring the connection of culture and mental health (Triandis, 2001). Triandis & Trafimow (2001) related the concept of individualism as people may access their self or collectivism as relational self, these can be varied from situation to situation. Collectivism is advantageous for small group and interpersonal situations. But when dealing with a large collectivist society like Pakistan where people are living together and one individual is running the expenses of the whole family, individualism can be more advantageous. Such individualist people can overcome depression and anxiety rather than being in a collectivistic society. It was also observed by the researchers that socialization and collectivist practices increase dependency which increases

psychological distress and anxiety (H3, H4) especially when an individual is experiencing trauma due to a disease like cancer.

Limitations of the study:

02 hypotheses have significant results according to the literature however there are some limitations of the present study. Data were collected only from the hospitals situated in Rawalpindi and Islamabad. So we cannot generalize the results in other cities. The study used a survey-based approach i.e. a structured questionnaire was prepared and floated to the participants. Other qualitative methods can be employed to identify the real causes of rejection of moderating effect of collectivism. The other limitation attached to this study is the small sample size. Moreover, it is having a cross-sectional study design which is also identified as a limitation of the study. If we conduct the same study using a longitudinal design, it can enhance the quality of data for the present study.

Recommendations and Direction for Future Research:

It is recommended for medical practitioners to deal with their patients pleasantly and humorously. This can reduce the severity of the disease and also reduce psychological distress and anxiety. Moreover, medical practitioners need to give more time and attention to their patients and also try to overcome the feelings of fear. For the researcher, it is recommended that in the current study collectivism as moderator was rejected. So they take wellbeing-related variables which can influence the psychological conditions of cancer patients more accurately. The present study did not conduct pre and posttest so in the future researcher can conduct their study using these techniques to get more clarity about the proposed relationship between humor anxiety and psychological distress.

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