ORIGINAL ARTICLE

Depression among Cancer Patients: Risk Factors and Coping Mechanism

Aaqib Shahzad Alvi, Ibad Ullah Sajid, Muhammad Ali Tarar, Muhammad Ashraf, Hira Bilal

Dr. Aaqib Shahzad Alvi *(Corresponding Author)*
Lecture, Department of Social Work
University of Sargodha, Sargodha-Pakistan
Email: aaqibshahzad@gmail.com, aaqib.shahzad@uos.edu.pk

Dr. Ibad Ullah Sajid
Social Welfare Officer
Social Welfare & Bait-ul-Maal
Rawalpindi-Pakistan

Dr. Muhammad Ali Tarar
Associate Professor, Department of Sociology
Ghazi University, Dera Ghazi Khan
Dera Ghazi Khan-Pakistan

Dr. Muhammad Ashraf
Associate Professor, Pathology Department
HBS Medical & Dental College
Islamabad-Pakistan

Hira Bilal
M.Phil. Scholar
Department of Social Work
University of Sargodha, Sargodha-Pakistan

ABSTRACT

OBJECTIVE: To gauge the prevalence of depression and; identify the potential risk factors as well as coping strategies among cancer patients.

METHODOLOGY: This descriptive cross-sectional study was conducted from March to November 2018 at Clinical Oncology Department, Institute of Nuclear Medicine and Oncology Lahore (INMOL) Lahore. The purposive sampling technique was used and interviewed 118 sampled cancer patients. Interview schedule, depression Scale, and coping scales were used as an instrument to collect data. To analyze the data, three different methods i.e. frequency distribution analysis method for descriptive results; regression analysis and Pearson correlation. Multiple linear regressions were used to estimate the significant relationship of demographic variables with depression.

RESULTS: The results of the study indicated that 16% of respondents had a low level of depression, 72% medium while 12% had a high level of depression. In the case of coping mechanisms, the majority of respondents adopted cognitive restriction, emotional expression, information seeking, self-blame, Wish Fulfilling Fantasy, and threat minimization as coping styles. All the predictor variables including age, economic status, family support, and duration of cancer were found significantly associated with depression. The results of correlation analysis indicated a negative association between depression and coping strategies.

CONCLUSION: Considering the diverse effect of depression and repeated use of various coping strategies, comprehensive steps are needed to screening and counsel cancer patients that will be effective for their mental wellbeing.

KEYWORDS: Depression, Prevalence, Risk Factors, Cancer Patients, Coping strategies

INTRODUCTION

Cancer is one of the most prevalent and feared diseases of the world. Worldwide, it causes more deaths than Human Immunodeficiency Virus (HIV AIDS), Malaria, and Tuberculosis collectively. According to statistical data, it is the second prevalent cause of death globally[1,2,3]. International Agency for Research on Cancer (IARC) estimates that 19.3 million cases of cancer have emerged in 2020 and 10 million cancer deaths happened.[4] According to the GLOBOCAN (2020), the gradual and significant disproportion lies between the prevalence of higher and lower-income countries, indicating that the countries with low or Medium Human Development Index (HDI) will have the most relative increases in cancer occurrence by 2040 [5]. Pakistan, according to the WHO Cancer Country Profile 2014, is the leading Asian country in instances of cancer.[6]

Cancer patients suffer from both bodily as well as psychosomatic symptoms. There are many types and variations of depressive disorders, but the most common clinical symptoms are depressed mood, constant body aches, loss of happiness in routine life work, easily becoming fatigued, sleeplessness, and disturbance in appetite.[7]

The frequency of depression in cancer patients is estimated to be four times that of the general population but variations were found country-wise, as in Iran 50%, China up to 67 % and in Pakistan, this ratio is 58%.[8] Actually, due to increasing stress and reduction in physiological and psychological quality of life, patients' vulnerability levels increase gradually and this situation causes depression among cancer patients. Some previous studies indicated that poor financial status, ache, aging, low education, poor physiological condition, and; disease/ treatment stage were the predicting factors for depression.[9,10]

Pakistan being a developing country has alarming statistics that indicated a high death rate of cancer patients and the disease has been categorized as a major health problem. Like other developing countries, due to identified cases, cancer has emerged as a major public health problem in Pakistan as well. The existing literature portrayed the adverse health consequence of depression among cancer patients; nevertheless, no substantial study has explored the prevalence of depression, impending risk factors of depression, and coping strategies/mechanisms adopted by the Cancer patients so far.

The study at hand is an endeavor to gauge the prevalence of depression, identify potential risk factors and coping strategies among cancer patients. The findings of the study may be helpful in the promotion of health care practices for people living in resource-poor countries, the formulation and execution of preventive measures and policies, which in turn, can help in diminishing the morbidity and mortality rates.

METHODOLOGY

This descriptive cross-sectional study was conducted from March to November 2018 at Clinical Oncology Department, Institute of Nuclear Medicine and Oncology Lahore (INMOL) Lahore. This is a leading cancer treatment hospital that caters to patients across Pakistan belonging to diverse social-cultural backgrounds. Current research design demands inclusion of male and female outdoor patients in research, whose cancer has been diagnosed, and indoor patients were excluded from the sample.

The sample consisted of 118 cancer patients and a purposive sampling technique was applied to draw the sample. The interview schedule was used as a data collection tool constituting socio-economic variables, stages as well as the duration of disease. Moreover, to estimate the prevalence of depression, the researchers applied Depression Anxiety and Stress Scale - DASS-42 scale developed by Crawford, 2003. Depression items (14-items) of the DASS scale were used in the current study. For coping strategies, a coping scale constituting cognitive restructuring, emotional expression, wish-fulfilling fantasy, self-blame, information seeking, and threat minimization as coping styles or mechanisms among respondents. After pretesting, the Cronbach Alpha values on each coping style were found within the range of reliability and validity of the tool as per criteria of statistical analysis and it lies between 0.70 to 0.91. The variables of the study were depression, coping styles, and demographic variables.

Keeping in view the major variables of the study, we applied depression items of DASS, coping scale, and Interview schedule containing various socio-economic or demographic variables. These variables were found as causative factors or risk factors of depression as they have a significant association with the dependent variable (Depression).

Prior permission for data collection was obtained from the concerned authorities. Collected data were entered in Statistical Package for the Social Sciences (SPSS) version 21 for tabulation and analysis. To analyze the data, three different methods i.e. frequency analysis method for descriptive results; 5-points Likert Scale for analyzing the coping strategies as well as; comparison of means and correlation was used to evaluate the more adopted coping strategy by the patients. Multiple linear regressions were used to estimate the significant relationship of demographic variables with depression. A pre-test was applied among 30 components of the sample. Ethical approval to collect data was obtained vide letter No. INMOL/PA/2020 dated 01-06-2018. The researchers observed strictly the principles of informed consent and the deliberate contribution of cancer patients during the data collection phase.

RESULTS

The demographic results of the study indicated that slightly more than one-third of the respondents i.e. 38% were lying down in the age group of 31-40 years while 25% were 21-30 years old. The ratio of urban-rural respondents was 46:72. Out of the total 118 respondents, 35% were at the first stage of cancer, 55% were at 2nd, 15% at 3rd, and 7% were at the last/ 4th stage of cancer.

TABLE I: PREVALENCE OF DEPRESSION AMONG CANCER PATIENTS (n = 118)

Level of depression	Prevalence of Depression	
	Frequency	Percentage
Low	19	16.2
Moderate	86	72.3
High	13	12.1
Total	118	100.0

Table I indicated the level of prevalence of depression among respondents. All the depression items/questions were computed to make a single variable with the name of 'depression' which has a 0-56 range. Total fourteen questions (existed in Depression portion of DASS scale and it contains Liker scale attributes i.e. 0= never, 1= rarely, 2= very often, 3= sometimes, 4= always were used in depression scale (Depression Scale among Cancer Patients) to have a clear picture of the prevalence of depression. After the calculation of scores, three ranges were set from 0 to 56 scores. The first range of scores (from 0 to 19) was given the label "Low" depression, the second range (from 20 to 39 scores) was given the label "medium" whereas 3rd range (from 40 to 56 scores) was assigned the label "high" level of depression. Data reveals that the majority of cancer patients were suffering from a moderate level of depression.

TABLE II: RISK FACTORS OF DEPRESSION BASED ON DEMOGRAPHIC VARIABLES (n = 118)

Variables	B	P Value
Age	0.135	0.007
Economic Status	-.468	0.000
Type of Family	-.421	0.003
Duration of Cancer	0.335	0.002
Stage of Cancer	0.523	0.000

Table II indicated the risk factor/ predictors of depression based on demographic variables. For this purpose, a multiple linear regression was calculated which indicated how multiple independent variables(demographic variables) are related to one dependent variable (depression). A significant association was found between the demographics and depression among cancer patients. However economic status indicated a more significant association with depression (p-value is 0.00), hence it was categorized as a major risk factor or predictor of depression among cancer patients.

TABLE III: COPING STRATEGIES ADOPTED BY CANCER PATIENTS (n = 118)

Coping Strategies	Intensity (%)			
Level	Low level	Moderate level	High level	Total
Emotional Expressions	0	78.0	22.5	100.0
Level of information seeking	0	76.5	26.3	100.0
Wish Fulfilling Fantasy	0	97.1	3.8	100.0
Level of Self-Blame	60.3	38.6	1.9	100.0
Level of threat minimizing Strategy	0	20.4	80.5	100.0
Cognitive Restrictions	0	80.5	20.1	100.0

Table III showed the various coping strategies adopted by cancer patients. The coping strategies were further classified into six subparts. All questions were computed in the concerned categories which were further categorized in three levels i.e. Low, Moderate, and High, based on the total scores in each level.

Data showed that emotional expression, information seeking, wish-fulfilling fantasy and cognitive restrictions as coping strategies were being used at a moderate level whereas the coping strategy "self-blaming" was being used at a low level. However, the threat minimization strategy was being used at a high level by the respondents.

TABLE IV: PEARSON PRODUCT-MOMENT CORRELATION BETWEEN DEPRESSION AND COPING STRATEGIES

Variable	Correlation Value	p-value
Depression* Coping Strategies	-0.945	0.007

Table IV indicated that there is a significant relationship between depression and coping strategies. Sig. (2-tailed) value proved the strong association between two variables and the Parson correlation' value (-.945) showed that there is a negative relationship between depression and coping strategies. It signifies that more involvement in coping strategies leads to a lower level of depression and vice versa.

DISCUSSION

Owing to a great number of people's indulgence in cancer ailment, there are several academic types of research to highlight depression associated with the ailment. However, the studies in the context of Pakistan have given myriad findings regarding the occurrence of depression in cancer patients. The study in hand demonstrated that cancer patients do experience depression. This assessment was associated with descriptive & comparative results and correlation analysis. Results indicated that slightly less than three fourth of respondents (72%) had a moderate level of depression while a considerable number of respondents (12%) had a high level of depression. There was not a single respondent who did not have depression. These findings were more or less parallel with the results of previous studies conducted in Pakistan. A recently conducted study declared that 58% of cancer patients had depression in Pakistan[11]. Another study reported that 61% of cancer patients in Pakistan had varying levels of depression[12]. The findings of another study revealed that about half of the respondents (52%) reported having symptoms of anxiety and depression or both[13]. A study conducted in China also reported a high percentage of occurrence of anxiety and depression in cancer patients as 6.49 and 66.72 percent respectively[10]. There may be different reasons for this slight variance in the percentage of depression among cancer patients indicated in different studies but the prevalence of depression has been reported by all studies.

While assessing the risk factors of depression among cancer patients, different factors including age, economic status, type of family, duration as well as stage of cancer were assessed. All these predictor variables were found significantly associated with depression among cancer patients. The results statistics of this study pointed out that the young patients had more depression. It further reported that one year increase in age causes 13.5 points to increase in depression. These results authenticate the findings of the previous studies conducted in Pakistan. A study conducted by M. Umair (2013) depicted an association between the age of respondents and level of depression and anxiety and reported that maximum depressed patients were quite young i.e. in the age group of 25-42 years[14]. Another study (2020) reported that the age of 65% of patients who were suffering from different levels of anxiety was ranging between 18-60 years[12].

However, a study conducted in China reported that older respondents had more depressive symptoms than younger ones[15]. According to the findings of the study in hand, that economic status was also found significantly associated with depression among cancer patients. These findings are also in line with the results of many studies conducted previously. Previous studies confirmed that Low socioeconomic status is a potential risk factor of depression among cancer patients. For instance, a study conducted on breast cancer among the Indian population reported that family income has a significant impact on the psychological distress of cancer patients[16,17]. Hashmi and her fellow researchers conducted a study on 100 diagnosed cases of cancer from OPD of private and public sector teaching hospitals of Karachi and they found that almost 70% of patients were facing financial problems in terms of the treatment cost. Moreover, statistical analysis indicated a positive association between cancer and financial problem $(p<0.050)$[18].

The findings of this study also demonstrated that people belonging to extended families had a lower index of depression than the people of nuclear families. Hence family support proved a significant relationship of depression with a coping mechanism with higher variability of 42.1%. Another study reported that with many other factors, social or family support plays a pivotal role in decreasing the level of depression and anxiety in cancer patients[19]. Duration of cancer disease also proved a significant predictor of depression as with an increase of one year in the time since the diagnosis of cancer, the depression increased by 33.5%. These results are also in line with the findings of the previous studies which showed that the depression rate significantly increases with the duration of cancer. A study conducted by Jadoon et. al. reported that the long duration of the disease is one of the major causes of anxiety and depression among cancer patients.[20] As well as the stage of cancer as a risk factor/ predictors of depression is concerned, the findings of this study revealed that with one

stage increase of disease, there is a high increase in depression (52.3%). A previous study also authenticated the results with its similar findings that the frequency of depression was more in stage three as compared to stage first and second.[21]

The findings of this study revealed that there is a significant relationship between depression and coping strategies. The results reported that more involvement in coping strategies leads to a lower level of depression and vice versa. Results of the study showed that emotional expression, information seeking, wish-fulfilling fantasy and cognitive restrictions as coping strategies were being used by the respondents at a moderate level whereas coping strategy self-blaming was being used at a low level. However, the threat minimization strategy was being used at a high level by the respondents. The results are in line with the findings of the previous studies. A study conducted in 2020 reported that coping strategies enabled patients to cope with distress and depression, however; the effectiveness of the coping strategy depends upon the level of depression.

It further reported that the most adopted active coping strategy by the respondents of the study was found the religious coping[22]. Another study reported that depression had significant relation with coping mechanisms but there was no relation with uncertainty[23]. Similarly, one more study found that coping mechanism helps in reducing depression in cancer patients and the frequently used coping styles by Egyptian breast cancer patients were religion, acceptance, emotional support, and self-distraction[24]. It is pertinent to mention that the study in hand disclosed that only a few patients approached the Psychologist or Psychiatrist for the treatment of depression which is a matter of grave concern because many researchers considered psycho-social interventions as the most effective strategy to cope with the depression. Smith (2015) also recommended psycho-social interventions/ Psychotherapy or counseling as the most effective coping strategies in cancer patients to deal with anxiety and depression[25].

RECOMMENDATIONS

Moreover, comprehensive research work should be conducted to gauge the prevalence of depression among cancer patients at the national level.

CONCLUSION

Considering the diverse effect of depression and repeated use of various coping strategies, comprehensive steps are needed in screening and counseling cancer patients that will be effective for their mental wellbeing. Economic status remained a significant risk factor for depression. Hence, creating cancer support groups and financial assistance at the government level will help the patients to cope more effectively with this dreadful disease.

AUTHOR CONTRIBUTIONS
Alvi AS: Conception, data analysis and final approval
Sajid I: Study design, drafting & revision
Tarar MA: Compilation, literature review, manuscript writing
Ashraf M: Data collection, manuscript writing
Bilal H: Data collection, data analysis

REFERENCES:

[1] Siegel RL, Miller KD, Jemal A. Cancer Statistics- 2015. CA Cancer J Clin. 2015; 65: 1: 5-29.

[2] Ebadinejad Z, Fakhr-Movahedi A. Palliative Care in Children with Cancer in Iran: Challenges and Perspectives. PediatrNurs. 2019; 45: 4: 205-6.

[3] Tarar MA, Akhtar S, Munj YN, Akhtar M, Zafar MI, Husain N. Knowledge and attitude; STIs, HIV, AIDS, RTIs, Breast cancer & reproductive health among young females in Faisalabad District, Pakistan. Professional Med J. 2015; 22: 6: 690-704.

[4] World Health Organization. Latest global cancer data: Cancer burden rises to 19.3 million new cases and 10.0 million cancer deaths in 2020. The International Agency for Research on Cancer (IARC). A report published on 15 December 2020. Available from: https://www.iarc.who.int/news-events/latest-global-cancer-data-cancer-burden-rises-to-19-3-million-new-cases-and-10-0-million-cancer-deaths-in-2020/

[5] Globocan. New Global Cancer.2020; Available from: https://www.uicc.org/news/globocan-2020-new-global-cancer-data

[6] World Health Organization. Cancer Country Profile- Pakistan. Available from: https://www.who.int/cancer/country-profiles/pak_en.pdf

[7] Rosenstein DL. Depression and end-of-life care for patients with cancer. Dialogues Clin Neuro sci. 2011; 13: 1: 101.

[8] Ardebil MD, Bouzari Z, Shenas MH, Keighobadi M. Depression and health related quality of life in breast cancer patients. J Pak Med Assoc. 2013; 63: 1: 69-71.

[9] Hong JS, Tian J. Prevalence of anxiety and depression and their risk factors in Chinese cancer patients. Support Care Cancer. 2014; 22: 2: 453-9.

[10] Wen S, Xiao H, Yang Y. The risk factors for depression in cancer patients undergoing chemotherapy: a systematic review. Support Care Cancer. 2019; 27: 1: 57-67.

[11] Mushtaq R, Ansar A, Bibi A, et al. Frequency of Depression among Cancer Patients. Pak Inst Med Sci. 2017; 13: 1: 83-87

[12] Chiragh S, Shah IA, Jameel A. Anxiety and depression in cancer patients - a survey in medical oncology department of a tertiary care hospital. J Post grad Med Inst. 2020; 34: 1: 37-40.

[13] Dogar IA, Azeem MW, Kiran M, Hussain I, Mehmood K, Hina I. Depression and anxiety in cancer patients in outpatient department of a tertiary care hospital in Pakistan. Pak J Med Sci. 2009; 25: 5: 734-737.

[14] Umair M. Frequency of depression and anxiety among cancer patients and their determinants - A study at Oncology Units of Public and Private Sector, Tertiary Care, Hospitals of District Lahore. Pak J Med Sci. 2013; 7: 1: 200-203.

[15] Chen X, et. al. Prevalence of Depression and its related factors among Chinese women with breast Cancer. Acta Oncol. 2014; 48: 8: 1128-1136.

[16] Datta A, Sharma R. The Impact of Socioeconomic Status on the Psychological Distress of Breast Cancer Patients in Kolkata. Financial Stat J. 2018; 1: 3: 1-7.

[17] Niedzwiedz CL, Knifton L, Robb KA, Katikireddi SV, Smith DJ. Depression and anxiety among people living with and beyond cancer: a growing clinical and research priority. BMC cancer. 2019; 19: 1: 1-8.

[18] Hashmi A, Tauseef U, Ahmed SI, Mubeen SM, Ghaffar N, Mehmood R. Depression in Cancer Patients attending Outpatients Department of Tertiary Care Hospitals of Karachi. Ann. Abbassi Shaheed Hosp. Karachi Med Dent Coll. 2013; 18: 2: 101-05.

[19] Naz S, Kamran F. Depression and anxiety as predictors of perceived quality of life in breast cancer survivors. J Dow Uni Health Sci. 2016; 10: 3: 87-91.

[20] Jadoon NA, Munir W, Shahzad MA, *et al.* Assessment of depression and anxiety in adult cancer outpatients: a cross-sectional study. *BMC Cancer. 2010;* **10:** 594.doi: https://doi.org/10.1186/1471-2407-10-594

[21] Mushtaq R, Ansar A, Bibi A, Khurram H, Ali J, Islam A et al. Frequency of Depression Among

Cancer Patients. Ann Pak Inst Med Sci. 2017; 13:1:83-87.

[22] Benson RB, Cobbold B, Boamah EO, Akuoko CP, Boateng D. Challenges, Coping Strategies, and Social Support among Breast Cancer Patients in Ghana. Advances in Public Health. 2020: Article ID 4817932. DOI: https://doi.org/10.1155/2020/4817932

[23] Lee YJ, Ham EM, Kim KS. A co relational study on uncertainty, coping and depression of cancer patients J Korean Acad Nurs.2001; 31: 2: 244-56.

[24] Elsheshtawy EA, Abo-Elez WF, Ashour HS, Farouk O. Coping Strategies in Egyptian Ladies with Breast Cancer. Breast Cancer. 2014; 8: 4: 97-104

[25] Smith HR. Depression in cancer patients: pathogenesis, implications and treatment. Oncol. Lett. 2015; 9: 4: 1509-14.