Original Research Article

Prevalence of Depression, Anxiety and Stress among Cancer and Chronic Kidney Disease Patients

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ABSTRACT

Background: Cancer is one among the life threatening diseases in present days it has biological, psychological and sociological impact on individual's life. Cancer is a grave illness which has an effect on physical and emotional wellbeing of patients. Deaths from cancer worldwide are projected to continue to rise to over 11 million by 2030.Objective. To assess the prevalence of depression, anxiety and stress among cancer and chronic kidney disease patients.

Materials and Methods- A Hospital based cross-sectional study was carried out among the people aged 18to70years from selected study area. Sample size was determined based on prior estimates (prior study) of mean score of these three variables Anxiety, Depression, Stress. A Cross- sectional study involving different types of newly diagnosed cancer patients and CKD patients were included in the study. Patients with past history of psychological disorders were excluded from study. Data was collected by using HADS &PSLES Scales.

Results- In our study the risk in cancer group For HADS-Anxiety the OR was protective and statistically significant in Normal (OR=0.159) and borderline (OR=0.262) Anxiety group as compared to abnormal. As regard HADS–depression for cancer group the abnormal and border line depression was found protective (0.108 and 0.315respectively). However, it was found not statistically significant for borderline but highly statistically significant for abnormal (p=0.000). The risk in abnormal PSLES (1year stress) group was 2.662times higher than moderate stress in cancer group compared to chronic kidney disease group. The odds ratio was statistically significant also (p= 0.026).

Conclusion- On the basis of our findings we may concluded that cancer patients are inclined to various psychological problems particularly to depression, anxiety and stress. In initial stages patients are unaware about their illnesses after diagnoses they go in deep stress, even some times they have suicidal ideations, loneliness etc. Cancer thoroughly breaks the patients psychologically as well as biologically. Along these lines they should to be given psychological as well as emotional support by the family members and other relatives too. Psychologists, social workers, government and non government organization s should come forward to help cancer patients in each and every single corner of the country. So they found themselves secure and will enjoy their broken and remaining days of their life.

Keywords: Anxiety, Depression, Stress, Cancer, chronic kidney disease

INTRODUCTION

The Disease cancer is a serious public health problem causes about12% of deaths throughout the world increasing to 54% of all deaths by the year 2025. [1] Cancer is currently the cause of one-tenth of all deaths and is the second most frequent cause of death in the majority of developed countries. [2] Although cancer is widely perceived to be a disease of industrialized nations more than half of all cancers occur among the three quarters of the world's people who live in the developing countries. [3] High cost of tertiary treatment less duration of survival after treatment and heavy mental stress on family more to the responsible one for care and treatment, unusual behavior society leads to a vicious cycle of psycho-social disturbance compounded with patients fear stemming from the disease's reputation as one of the most deadly and painful forms. [4] Cancer can have devastating psychological impact on patients and their families. To many people, a diagnosis of cancer is an irreversible death sentence. Fear of disfigurement, prolonged disability and the cost of treatment threaten the psychological well-being of patients and the long term stability of their families. [5] Cancer often involves complex medical problems that can lead to organically induced mental disorders. Some of the psychological problems experienced by cancer patients may be due to the damage of central nervous system like delirium; symptoms of delirium include attention and memory deficits, disorientation, perceptual distortion, psychomotor disturbances and insomnia. [6] People living with cancer are inclined of anxiety, stress, depressions etc. which affects their quality of life, psychological wellbeing, interpersonal relationships, self-care and treatment adaptation. [7] Every year, almost 500,000 people die by this dangerous illness. India Council of Medical Research that the death rate owing to cancer increase up to 6 that in 2012-2014. [8] In the developed world, cancer is the second leading cause of death, next to cardiovascular disease. While in the developing world, cancer ranks third as the leading cause of death. [9] Out of an estimated total of 51.3 million deaths during 1996 in the world, more than 7.1 million are attributed to cancer. According to WHO estimates by the year 2000. [10] The number of cancer deaths may go up to 8 million annually (WHO, 1979). If the present trend continues it is predicted that the incidence of cancer will rise in almost all part of the world because of increase in life expectancy and changes in the life style and environment. [11] The average life expectancy of an Indian male for the period 1991-96 was 60.6 years and that of a female was 61.7 years. It is estimated that by the years 2021-2026 the average life expectancy would increase to 69.6 years for males and 71.0 years for females. [12]

MATERIALS AND METHODS

2.1 Study Area. Sir Sunder lal Hospital B.H.U.

2.2 Study place:- This study involving newly different types of histologically proven cases of Cancer patients who were not taken chemotherapy and sample was taken from , radiotherapy, surgical oncology OPD. Chronic kidney disease patients from Nephrology OPD and Nephrology wards of Sir Sunder Lal Hospital Banaras Hindu University, Varanasi, India.

2.3 Study design and sample size. A Hospital based cross-sectional study was carried out among the people aged 18to70years from selected study area. Sample size was determined based on prior estimates (prior study) of mean score of these three variables Anxiety, Depression, Stress. Sample size was calculated taking level of significance (α) as5% and power as 90%. Sample size calculated was38,42,142 based on the prior estimates of depression, anxiety, and stress score respectively. Higher of the three that is 142 was considered as required sample size. Further assuming 10% non response the desired sample size will be 160.The final sample size in study was fixed as 160 for each

group cancer &chronic kidney disease. Prior written informed consent was taken by the participants.

2.4 Sampling techniques. Simple random sampling

2.5 Selection of study subjects
 2.5.1. Inclusion Criteria. All new registered cases were included with histologically proven carcinoma and age between 18 years to 70 years .who gave consent for participation was considered.
2.5.2 Exclusion criteria. Patients who are unable to give response due to severe mental illness i.e. current psychosis, neurological and mental retardation were excluded from the study.

2.6 Tools of the study. Interview schedule and pretested GHQ, HADS, PSLES scale were used to assess Anxiety, Depression and Stress of participants in this study.

2.7 Techniques of the study. In all study participants, a structured and pretested interview schedule was administered to obtain data on sociodemographic parameters.

2.8 Ethical Consideration. Ethical approval was obtained from the Institute Ethical Committee of the Institute of Medical Sciences, Banaras Hindu University Varanasi. Prior written consent was taken from the subjects who volunteered to participate in the study.

2.9 Data Processing. The information obtained from the Interview schedule using SPSS 16.0 program. Descriptive statistics (mean and standard deviation) were calculated for continuous variables and frequencies and percentages were calculated to summarize qualitative data. Other statistical tests like chi-square test, t-test were applied. Logistic regression was applied to identify level of Anxiety, Depression, and Stress among cancer

patients and chronic kidney disease patients. A significance level of 0.05 was used.

RESULTS

Table1: HADS&PSLES Scale Scores for the Assessment of Depression, Anxiety and Stress (N=320)

Severity	Depression	Anxiety	Stress
Normal	0-7	0-7	0-40
Borderline (moderate)	8-10	8-10	40-200
Abnormal(severe)	11-21	11-21	More than 200

This was a Hospital based cross sectional study involving different types of newly diagnosed cancer patients & chronic kidney disease patients who were undergoing different treatment procedures at Sir Sunderlal Hospital, B.H.U. Varanasi for a period of 6 months. Patients of both genders who are above 18 years and up to 70 years were included in the study. During the study period, a sample of 160 cancer patients and 160 chronic kidney disease patients were interviewed and screened for Depression, Anxiety and Stress. Table -1 represents the severity scores of depression, anxiety and stress according to HADS&PSLES. SPSS16.0 was used to perform the statistical analysis, odds ratio was done to obtain the Interventions and conclusions about the effects of the events (Depression/ Anxiety/stress).

Table-2 shows the mean, standard deviation and t-test of cancer patients and chronic kidney disease patients on Depression, Anxiety and Stress scores.

Group	No	Mean	S.D	t	p
HADS-Depression Cancer	160	10.86	2.51		
C.K.D	160	11.49	2.76	2.119	0.035
HADS-Anxiety Cancer	160	7.43	3.21		
CKD	160	5.63	2.82	5.314	0.000
PSLES 1 year Cancer	160	317.46	87.95	5.253	0.000
CKD	160	266.01	87.26		

Table-2 revealed that the mean Depression score in CKD patients is more than that of cancer patients and the difference was found to be statistically significant (t=2.119 , P=0.035). Whereas the mean anxiety score in cancer patients is more than that of CKD patients and difference was found to be highly statistically significant (t=5.314 and

P=0.001) showing that anxiety is more in cancer patients. Similarly mean score of PSLES 1year for cancer patients is again more that of CKD patients. The difference in mean score was found to be statistically significant that is (t=5.253 P=0.001), again the PSLES in 1year more in cancer patients.

Logistic Regression:-

Logistic Regression analysis was done taking Cancer/CKD group as dependent variable and eight significant factors namely education, occupation, bad habits, type of family, GHQ-12, HADS Anxiety, HADS Depression and PSLES 1 year as independent variables. The value of Nagelkarke R Square was 0.352. The percentage of correct classification by the model was 72.5%. The value of β, S.E.(β), its significance, OR (odds ratio) and 95% of C.I of odds ratio are shown in the table given below:

Table-3 Logistic Regression analysis table (N=320)

Variables	Cancer		CKD		β	SE(β)	Sig.	OR	95% CI of OR	
	No.	%	No.	%					Lower	Upper
Education										
Illiterate	45	28.1	19	11.9	1.112	.544	.041	3.041	1.047	8.834
Primary	62	38.8	59	36.9	.532	.464	.251	1.703	.687	4.225
Above primary &upto Inter	40	25	54	33.8	.083	.460	.857	1.086	.441	2.677
Graduate	13	8.1	28	17.5		-	-	Ref.	-	-
Occupation										
House Wife	48	30	47	29.4	-.133	.494	.788	.876	.333	2.306
Farmer	37	23.1	30	18.8	.072	.477	.881	1.074	.422	2.738
Labour	27	16.9	13	8.1	.442	.536	.410	1.556	.544	4.449
Job	25	15.6	48	30	-.386	.462	.404	.680	.275	1.682
Business	23	14.4	22	13.8	-	-		Ref.	-	-
Bad Habits										
Bad Habit present	100	62.5	69	43.1	.570	.306	.062	1.768	.971	3.218
Bad Habits Absent	60	37.5	91	56.9	-			Ref.	-	-
Types of Family										
Nuclear	110	68.8	77	48.1	.880	.273	.001	2.411	1.411	4.120
Joint	50	31.2	83	51.9	-	-		Ref.	-	-
GHQ-12										
Psychological problem present	144	90	110	68.8	1.310	.388	.001	3.707	1.732	7.933
Psychological problem Absent	16	10	50	31.2	-			Ref.	-	-
HADS ANXIETY										
Normal	81	50.6	115	71.9	- 1.837	.539	.001	0.159	.055	.458
Borderline	49	30.6	39	24.4	-1.339	.560	.017	.262	.088	.785
Abnormal	30	18.8	6	3.8	-	-		Ref.	-	-
HADS DEPRESSION										
Abnormal	84	52.5	106	66.2	-2.225	.625	.000	.108	.032	.368
Borderline	65	40.6	44	27.5	-1.156	.622	.063	.315	.093	1.064
Normal	11	6.9	10	6.2	-	-		Ref.	-	-
PSLES 1Year										
Abnormal stress	149	93.1	125	78.1	.979	.440	.026	2.662	1.124	6.301
Moderate stress	11	6.9	35	21.9		-		Ref.	-	-

Table 4 Percentage of correct classification by model (N=320)

Group	Predicted		
	Group		Percentage correct %
	Cancer	C.K.D	
			%
Cancer	118	42	73.8
C.K.D	46	114	71.2
Over all Percentage			72.5

Out of eight independent variables two variables namely occupation and bad habits were found not statistically significant. However, the risk in cancer group was higher than CKD group for farmer and labour as compared to business class whereas for housewife and service (job) group was found protective though not statistically significant. Similarly the risk in cancer group among those who had bad habits was 1.768 times higher than no bad habits group. However, this was not statistically significant. The risk in illiterate as compared to graduate was 3.041 times higher in cancer group and this was statistically significant also (p=0.041). However, the risk for primary and above primary & up to inter was also higher

though not statistically significant. The risk in nuclear family was 2.411 times higher in cancer group and found highly statistically significant (p=0.001).Similarly, for cases having psychological problem present the risk was 3.707 times higher in cancer group and was highly statistically significant (p=0.001). For HADS-Anxiety the OR was protective and statistically significant in Normal (OR=0.159) and borderline (OR=0.262) Anxiety group as compared to abnormal in cancer group that of CKD group.

As regard HADS–depression for cancer group the abnormal and border line depression was found protective (0.108 and 0.315respectively). However, it was found not statistically significant for borderline but highly statistically significant for abnormal (p=0.001). The risk in abnormal PSLES (1year stress) group was 2.662times higher than moderate stress in cancer group compared to CKD group. The odds ratio was statistically significant also (p= 0.026).

DISCUSSION

The results of the present study revealed that Out of eight independent variables two variables namely occupation and bad habits were found not statistically significant. However, the risk in cancer group was higher than CKD group for farmer and labour as compared to business class whereas for housewife and service (job) group was found protective though not statistically significant. Similarly the risk in cancer group among those who had bad habits was 1.768 times higher than no bad habits group. However, this was not statistically significant. The risk in illiterate as compared to graduate was 3.041 times higher than cancer and this was statistically significant also (p=0.041). However, the risk for primary and above primary & up to inter was also higher though not statistically significant. The risk in nuclear family was 2.411 times higher and found highly statistically significant (p=0.001).Similarly, for cases having psychological problem present the risk was 3.707 times higher in

cancer group and was highly statistically significant(p=0.001). For HADS-Anxiety the OR was protective and statistically significant in Normal (OR=0.159) and borderline (OR=0.262) Anxiety group as compared to abnormal in cancer group that of CKD group in a study by Yi- Long Yang et al, they found that anxiety was 6.46 times higher in cancer group compared to control normal group. Similarly Depression was also 7.85 times higher in cancer group as compared to control normal group. Similarly in our study anxiety and Depression comes out to be significantly protective as the cancer group and compared with another chronic group (CKD) as control.

As regard HADS–depression for cancer group the abnormal and border line depression was found protective (0.108 and 0.315 respectively). However, it was found not statistically significant for borderline but highly statistically significant for abnormal (p=0.000). The risk in abnormal PSLES (1year stress) group was 2.662times higher than moderate stress in cancer group compared to CKD group. The odds ratio was statistically significant also (p= 0.026). our findings are supported by the previous researchers like Sangeeta et al., [12] Elanur et al., [13] as well as Mete &Onem [14] Bhuroo A. Ahmad [15] &Wani S. A. et al,: Anxiety& Depression Among Cancer and non cancer patients.

CONCLUSION

On the basis of our findings we may concluded that cancer patients are inclined to various psychological problems particularly to stress, and anxiety. In initial stages patients are unaware about their illnesses after diagnoses they go in deep stress, even some times they have suicidal ideations, loneliness etc. Cancer thoroughly breaks the patients psychologically as well as biologically. Along these lines they should to be given psychological as well as emotional support by the family members and other relatives too. Psychologists, social workers, government and non government

organization s should come forward to help cancer patients in each and every single corner of the country. So they found themselves secure and will enjoy their broken and remaining days of their life. The results of the present study revealed that the risk was found to be protective in case of anxiety for normal and borderline anxiety as compared to abnormal (OR= 0.159 P=0.001) and (OR=0.262 P=0.017). Further in case of HADS Depression the risk was found to be protective for abnormal and borderline as compared to normal Depression. Further for abnormal Depression it was statistically significant (OR= 0.108 P=0.001). While in case of PSLES 1year the risk of abnormal stress was 2.662 times higher than that of moderate stress and this risk is statistically significant (OR=2.662 p=0.026).

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