

RESEARCH

Perceived stress and coping in patients with head and neck cancer

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Abstract

Background: Head and neck cancer accounts for 30% of all cancers. The diagnosis with cancer imparts a lot of stress and the patient's ability to cope with this stress reflects in their quality of life.

Aim: To study perceived stress, coping and its correlation in patients with head and neck cancer.

Materials and methods: The study was a case controlled study. After ethical clearance from institutional review board, 50 subjects with head and neck cancer, and 50 age and sex matched healthy controls from the same socio-cultural background were selected. Each group comprised of 30 males and 20 females between 21-70 years of age, and they were assessed with Perceived Stress Scale and Ways of Coping Questionnaire. Unpaired sample t-test and Spearman correlation were used, and results were obtained.

Results: The study group had significantly higher stress than the controls ($p < 0.05$), and using confrontive coping, accepting responsibility, and escape avoidance as coping strategy had positive correlation with perceived stress ($p < 0.05$), while seeking social support and positive reappraisal as coping strategy had negative correlation ($p < 0.05$).

Conclusion: Patients with head and neck cancer have a significantly high stress, and maladaptive coping may further aggravate this stress.

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The term head and neck cancer is defined on anatomical and topographical basis to describe malignant tumours of the upper aero-digestive tract. Epithelial carcinomas of the head and neck arise from the mucosal surfaces in the head and neck area which includes tumours of the paranasal sinuses, the oral cavity, the nasopharynx, oropharynx, hypopharynx, and larynx. Alcohol and tobacco consumption, smoking, marijuana, exposure such as nickel refining, textile fibre, wood working, dietary factors such as low consumption of fruits and vegetables, salted fish, and human papilloma virus infection are some of the aetiological factors contributing to head and neck cancer.[1]

Oro-pharyngeal cancer is one of the ten most common cancers in the world. Its high frequency is seen in Central and South East Asian countries. Overall 57.5% of global head and neck cancers occur in Asia, especially in India. Head and neck cancers in India account for 30% of all cancers. In India, incidence is 12.48 cases per one lakh population for males and 5.52 cases per one lakh population in females.[2]

Though most head and neck cancers occur after age 50 years, yet these cancers can appear in younger patients, including those without known risk factors. The manifestations vary according to the stage and primary site of the tumour. Advanced head and neck cancers in any location can cause severe pain, otalgia, airway obstruction, cranial neuropathies, trismus, odynophagia, dysphagia, decreased tongue mobility, fistulas, skin involvement, and massive cervical lymphadenopathy which may be unilateral or bilateral.[1]

Thus, to be diagnosed as a patient of head and neck cancer must be a frightening experience. Life as cancer patient includes fear of the future as well as symptoms caused by the disease place considerable demands on the patients. For a newly diagnosed cancer patient, the concept of death becomes undeniable. This confrontation with reality often precipitates a psychological and an existential crisis. The patient must cope with this crisis by finding a tolerable meaning in this confrontation with serious illness.

Park and Folkman[3] described the cognitive

processing of distressing information. They identified the initial phase as an active confrontation and attempt to alter the situation. If the situation is unalterable, discovering meaning in the experience facilitates effective adaptation to the altered situation. For many, searching for meaning reinvigorates religious and spiritual belief that provide a philosophical structure for understanding the finiteness of life and the possibility of death.

The diagnosis of cancer creates a period of expected crisis and understandable emotional upheaval. Intrusive, recurrent, and unavoidable thoughts of illness, suffering, and death contribute immensely to distress. An understanding of and respect for each individual's way of coping is necessary to avoid invalidation and precipitating empathic failures. Lazarus[4] defines coping as ongoing cognitive and behavioural efforts to manage specific external and/or internal demands that are judged to tax or exceed the resources of the person.

Coping process involves at least two stages: confronting and managing with different aspects of illness or disability.[5] The principal coping styles that have been identified in cancer patients are problem focused, emotion focused, and avoidance focused. Problem focused coping may be actively to do something to reduce the demand, emotion focused coping may be to change the attitude towards the demand by social support or by cognitive reinterpretation, and avoidance focused coping may be to behave or to think as if the disease had never occurred.[6]

As a result of the location of head and neck cancer, survivors often experience observable physical disfigurement or disruption in communicative ability, increasing the likelihood of psychological reactions. Patients with head and neck cancer may be more likely than those with cancer in other sites to have histories of drinking, smoking, or using other substances as well to cope with stress. This combination of exacerbated psychological distress and maladaptive coping strategies leads to impaired functioning and decreased ratings of overall quality of life for head and neck cancer survivors.[7]

Thus, understanding the stress and how patients cope with these challenges is important in comprehensive care of the patients with head and neck cancer. In North East India, tobacco related oral cancer is very common. The prevalence of head and neck cancer in North East India is found to be significantly high at 54.48%; affecting males more than females.[8]

With the above background, the present study aimed to study perceived stress, coping and its correlation in patients with head and neck cancer.

Materials and methods

The study was carried out in the Department of Psychiatry, Assam Medical College Hospital (AMCH), Dibrugarh, which is a tertiary care teaching hospital in

North East India. The study duration was of one year from August 2012 to July 2013. The study received the ethical approval from the institutional review board. An informed written consent was obtained from every participant and they were free to withdraw from the study at any point of time.

Study design: The study was a case-control study.

Sample: The subjects included in the study were those patients who were newly diagnosed as cases of head and neck cancer, and who reported to the outpatient and inpatient departments of Radiotherapy, AMCH. All patients in the study group completed a six weeks period of radiotherapy after their diagnosis. The study samples were selected consecutively from those patients who attended department of Radiotherapy and fulfilled the inclusion criteria, and those who were not excluded. The total number of subjects was 50.

Samples of the control group were selected by the same method with age and sex matched healthy population from the community with same socio-cultural background. The total number of controls was 50.

Inclusion criteria

Study group: Patients of age group between 21-70 years, patients of both sexes, diagnosed cases of head and neck cancer at completion of radiotherapy, patients giving written informed consent for the study.

Control group: Age and sex matched healthy individuals from same socio-cultural background, individuals giving written informed consent.

Exclusion criteria

Adults with the following conditions were excluded from the study: past history of psychiatric disorder, comorbid psychiatric illness including delirium, other chronic debilitating illness, mental retardation.

Assessment tools: (1) Semi-structured proforma for socio-demographic data, (2) Perceived Stress Scale (PSS-14) by Cohen *et al.*, [9] (3) Ways of Coping Questionnaire (WOCQ) by Folkman and Lazarus. [10,11]

Procedure: All patients in the age group 21-70 years, fulfilling the inclusion criteria, were included in the study as consecutive cases after completion of radiotherapy (six weeks). They formed the study group (group A). A control group (group B) was selected with age and sex matched healthy population from the same socio-cultural background. A written informed consent was taken from each participant. Socio-demographic data of each case and control was tabulated in the demographic sheet. These two groups were evaluated for stress in last month by applying PSS-14. Coping strategies deployed by the cases and controls in stressful life situation was evaluated by WOCQ. Analysis of the observed data was done using

Statistical Package for the Social Sciences (SPSS-20). An unpaired sample t-test was used to compare perceived stress score and coping domain scores between the study and control groups. Spearman correlation was used to examine the correlation between perceived stress score and coping domain score in both the groups.

Results

Subject characteristics: At the end of one year, data was collected from 50 subjects with a diagnosis of head and neck cancer who completed six weeks of radiotherapy. Similarly, there were another 50 subjects who were age and sex matched healthy individuals belonging to the same socio-cultural background as the patients.

Both the groups comprised of individuals between 21-70 years of age with the mean age of 52.78 years (Table 1). Males comprised 60% of both the groups and females 40% (Table 2).

Table 1: Age distribution in study and control groups

Age group (years)	Study (n=50)		Control (n=50)	
	n (%)	Mean	n (%)	Mean
21-30	2 (4%)	52.78	2 (4%)	52.78
31-40	3 (6%)		3 (6%)	
41-50	15 (30%)		15 (30%)	
51-60	23 (46%)		23 (46%)	
61-70	7 (14%)		7 (14%)	

Table 2: Gender distribution in study and control groups

Gender	Study group	Control group
	n (%)	n (%)
Male	30 (60%)	30 (60%)
Female	20 (40%)	20 (40%)

Comparison of perceived stress between the study and control groups

Perceived stress was measured through PSS-14 for both the study and the control group. The mean score of the PSS was 30.76 (standard deviation [SD]±4.87) for study group and the control group had a mean score of 19.78 (SD±4.20) (Table 3). Higher mean scores indicated more stress. An unpaired sample t-test for significance of difference suggested a significant difference in perceived stress between the two groups ($t=12.07$, $p<0.0001$).

Comparison of coping between the study and control groups

A comparison between the coping strategies in study and control groups revealed a significant difference in the use of distancing ($p<0.05$), self-controlling ($p<0.05$), seeking social support ($p<0.05$), escape avoidance ($p<0.05$), planful problem solving ($p<0.05$), and positive reappraisal

Table 3. Comparison of perceived stress between the study and control groups

Variable	Study group (n=50)		Control group (n=50)		t-value	df	p-value
	Mean	SD	Mean	SD			
PSS	30.76	4.87	19.78	4.20	12.07	98	<0.0001*

*PSS=Perceived Stress Scale, SD=standard deviation, df=degrees of freedom, *p value significant at <0.01*

($p<0.05$). A high mean score was obtained for self-controlling (5.70), distancing (4.48), planful problem solving (8.64), and positive reappraisal (7.88) in the control group as compared to the study group, which showed a high mean score for seeking social support (6.74) and escape avoidance (6.22) (Table 4). Higher mean scores suggested that the respective coping domains were used more frequently by the participants.

Correlation between perceived stress and coping in the study and control groups

Correlation analysis between the perceived stress score and coping strategy was carried out in the study and control groups (Table 5). It is evident from table 5 that confrontive coping, accepting responsibility, and escape avoidance had significant positive correlation with perceived stress score in the study group, i.e. more the use of such coping, higher is the stress. In the study group, it was also found that there was a significant negative correlation between perceived stress score and seeking social support and positive reappraisal, i.e. more the use of such coping, lesser is the stress. In the control group also, it was found that confrontive coping, accepting responsibility, and escape avoidance had significant positive correlation with perceived stress score, while planful problem solving and positive reappraisal had a significant negative correlation.

Table 4: Comparison of coping between the study and control groups

Coping	Study group	Control group	t-value	df	p-value
	Mean±SD	Mean±SD			
Confrontive	3.82±1.32	3.86±1.87	0.123	98	0.901
Distancing	3.40±1.10	4.48±0.50	6.320	98	0.001*
Self-controlling	3.42±0.88	5.70±0.88	12.954	98	0.001*
Seeking social support	6.74±2.81	5.40±1.01	3.173	98	0.002*
Accepting responsibility	4.24±1.73	4.18±1.22	0.200	98	0.841
Escape avoidance	6.22±2.50	4.10±1.52	5.123	98	0.001*
Planful problem solving	3.66±2.11	8.64±1.57	13.389	98	0.001*
Positive reappraisal	5.30±2.90	7.88±1.30	5.740	98	0.001*

*SD=standard deviation, df=degrees of freedom, *p value significant at <0.05*

Table 5: Correlation between perceived stress and coping in the study and control groups

Coping	Study group	Control group
	r	R
Confrontive	0.593*	0.682*
Distancing	-0.341	-0.113
Self-controlling	-0.090	-0.221
Seeking social support	-0.703*	-0.315
Accepting responsibility	0.616*	0.603*
Escape avoidance	0.750*	0.591*
Planful problem solving	-0.460	-0.545*
Positive reappraisal	-0.705*	-0.522*

*r=correlation coefficient, *significant correlation*

Discussion

At the end of one year, data related to 50 patients with head and neck cancer, and 50 age and sex matched healthy controls, who were evaluated with PSS-14 and WOCQ were interpreted and results were obtained. The study group comprising of head and neck cancer patients had a significant difference in perceived stress scores than the control group (mean 30.76, SD 4.87), i.e. they experienced higher amount of perceived stress as compared to the control group, which is similar to the findings of other studies.[12-14]

The study group differed significantly from the control group in the use of distancing, self-controlling, seeking social support, escape avoidance, planful problem solving, and positive reappraisal as their coping strategies. The study group used more of escape avoidance (mean 6.22, SD 2.50) and seeking social support (mean 6.74, SD 2.81) as coping strategy than the control group which is similar to the findings of other studies.[15-18]

In the present study, it is seen that a significant positive correlation existed between perceived stress and confrontive coping, accepting responsibility, and escape avoidance, which suggests that the use of such coping strategies leads to higher stress. This is similar to the findings of other studies,[14,15,19] which also found avoidant coping to be positively correlated to stress. It was also found that seeking social support and positive reappraisal as coping strategy had significant negative correlation with stress, which suggests that the use of such coping lead to lesser stress which is similar to the findings of other study.[15]

Konwaret *al.*[20] assessed the level of depression and coping strategy adopted by cancer patients receiving treatment in Mizoram State Cancer Institute, Aizawl. Reappraisal was the most effective coping strategy adopted, followed by distancing. Significant correlation was found between depression and reappraisal, and also with depression and acceptance strategies.

Conclusion

In conclusion, the present study has shown that head and neck cancer patients have a considerable amount of

stress. The coping strategies used by patients with head and neck cancer are at times different, and the use of seeking social support and escape avoidance are much more in them. Coping by confrontive, accepting responsibility, and escape avoidance is found to increase stress. On the other hand, coping by seeking social support and positive reappraisal leads to decrease in stress.

Limitations

The study involved one-time assessment and lacked follow up. The reason for this was time constraint. The sample size of the study was small.

Future implications

This study emphasises on the holistic approach[21] of palliative care which includes multidisciplinary approach. Apart from the physical demands of a head and neck cancer patient, the psychological demands should also be taken into consideration. Targeting and correcting the maladaptive psychological aspects such as coping can prove to be a key factor in the treatment adherence and survival of the patients, and impart them a healthy quality of life.

Future prospective studies are needed to address the issue of stress and coping in head and neck cancer patients, especially in the Indian context where very few studies have dealt in this area.

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