

## Research Article

# Assessing Functional Status and Social Support in the Head and Neck Cancer Patients

Neşe Uysal<sup>1\*</sup> and Hatice Bostanoğlu<sup>2</sup><sup>1</sup>Department of Nursing, Gazi University Faculty of Health Science, Turkey<sup>2</sup>Department of Nursing, Zırve University Faculty of Health Science, Gaziantep, Turkey**\*Corresponding author:** Neşe Uysal, Department of Nursing, Gazi University Faculty of Health Science, Turkey**Received:** September 22, 2015; **Accepted:** October 16, 2015; **Published:** October 20, 2015**Abstract****Purpose:** The current study, which was a descriptive study to determine the functional status of and the social support perceived by head and neck cancer patients.**Materials and Methods:** The current study, which was conducted in the medical oncology and radiation oncology polyclinics of the Ankara Oncology Training and Research Hospital. The sample of the study consisted of 145 patients. The data in the study were collected utilizing the introductory characteristics questionnaire, Functional Living Scale (cancer), and the Cancer Patient Social Support Scale.**Results:** At the conclusion of the study, it was determined that mean functional living scale scores of head and neck cancer patients was low and the mean scores of the social support scale were high. It was determined that the social support perceived by patients and the functional living and of patients was influenced by gender, marital status, income status, status of receiving information, period of diagnosis, stage of disease, treatment, surgical treatment, time of the most recent surgical treatment, and the existence of other chronic diseases.**Conclusions:** The relationship between the sub dimensions of the functional living scale and the sub-dimensions of the social support scale were positively significant.**Keywords:** Head and neck cancer; Functional status; Social support

## Introduction

Head and neck cancers include the paranasal sinuses, nasal cavity, oral cavity, pharynx, and larynx epithelial cell cancers and they comprise approximately 6% of all cancers [1]. The most frequently observed type is squamous cell carcinoma. Squamous cell head and neck cancers rank seventh in terms of mortality due to cancer. Every year worldwide, 400,000 cases of oral cavity and pharynx cancers and 160,000 larynx cancer cases occur and approximately 300,000 of these result in mortality [1-3]. According to the cancer incidence data of the Ministry of Health Cancer Control Department, larynx cancer ranks sixth in Turkey with a 4% incidence rate in terms of incidence among males [4]. Even though head and neck cancers rank lower compared to other cancers in terms of incidence, the anatomic and functional properties of the localization are of particular importance due to the physical, psychological, and social problems created by the impact of disease and treatment [5-7]. Head and neck cancer patients suffer from a broad range of problems that have multiple effects on the functional life of individuals [6,8,9]. A decrease in physical capacity due to reasons such as pain, fatigue, loss of function in the shoulder, and impact on health status cause individuals to experience difficulty when performing their daily living activities [5,10,11]. Impact on body image occurring due to changes in the physical appearance of patients has an adverse impact on the psychological well-being of individuals and causes psychological problems such as depression and loss of self-esteem [5,12]. In the study conducted by

Campbell et al. (2000), problems such as difficulty swallowing, speech problems, and difficulties in physical activities could be observed at a high rate in patients in the advanced stage of the disease and the quality of life these patients was low [13]. Problems experienced in communicating due to changes in speech function and difficulties in adapting to functional changes, increased the level of anxiety of individuals [14]. In the study of Rosenthal et al. (2009), 18% of head and neck cancer patients were symptomatic prior to therapy [15]. This subset of patients reported moderate levels of pain, fatigue, sleep disturbance, feeling sad, and emotional distress. A decrease in social activities and problems such as social isolation, prevent the ability of patients to fulfil their social and professional roles [6,7,16]. Such difficulties that have been experienced have caused head and neck cancer patients to require greater social support. Some studies state that social support is beneficial for cancer patients and there is a positive relationship between the emotional support from family members and the degree of physical and psychological adaptation to cancer [17-19]. In patients with head and neck cancer, social support and its role in psychosocial well-being is important. Some studies state that adequate social support has benefits for patients with head and neck cancer in coping with the symptoms, decreasing anxiety and depression, and by preventing social isolation, it provides benefits for ensuring that the relationship between the individual with society is maintained [20-23]. While in the past, the only measurable outcome was tumour control and survival, today, quality of life has become increasingly important, especially in oncology. In recent years, the

purpose in the treatment of the disease is not limited to only the remedy of the disease, but also focuses on the outcomes being within acceptable limits in functional and aesthetic terms and sustaining quality of life [6,24]. Thus, in addition to the evaluation of treatment methods, tumour response, and general survival period in head and neck cancer patients, the evaluation of the impact of cancer and cancer treatment on the individual's functional, psychological, and social health is also important [5,6,7,24]. There are a limited number of studies in Turkey evaluating the functional status and social support of head and neck cancer patients. It is considered that the result of this study will contribute to the care planning for the enhancement of functional living and the determination of initiatives that will highlight the functionality of the family in the field of social support.

## Methods

### Design, Participants and setting

The study was conducted in the medical and radiation oncology polyclinics of the Oncology Education and Research Hospital with the largest capacity affiliated with the Ministry of Health in Ankara. To calculate the sample size, the NCSS-PASS (Number Cruncher Statistical System- Power Analysis and Sample Size) 2007 program was utilized. According to the results of the conducted population mean significance test, the sample size for the Functional Living Scale application was determined to be 145 and it was also determined to be 107 for the Cancer Patient Social Support Scale application. The study sample size was determined as 145.

### Participants

Individuals that accepted to participate in the study were aware of their cancer diagnosis, and were 18 years old and over were included in the study. Patients included in the sample were accessed when they consulted the medical oncology polyclinics and the radiation oncology polyclinic. After patients were provided with information on the study, the data collection form was implemented.

### Ethical considerations of the research

Permission was obtained from the Ankara Second Clinical Studies Ethics Board for the study and the Directorate of Oncology Education and Research Hospital, where the study was to be conducted, and verbal informed consent was obtained from the study participants.

### Data Collection

Data in the study was collected through the questionnaire to determine the defining characteristics of head and neck cancer patients, Functional Living Index (cancer), and the Cancer Patient Social Support Scale. The defining characteristics of the questionnaire consisted of two different sections. In the first section, there were questions regarding the socio-demographic information of the patients (age, gender, marital status, educational status, location of residence, income status, status of receiving assistance, and knowledge) and in the second section there were questions regarding the disease (diagnosis, stage, time of diagnosis, treatment, status of whether or not undergoing operation, treatment duration, completion period of treatment, and presence of another disease). The Functional Living Index (Cancer) was developed in 1984 by H. Schipper, J. Clinch, A. McMurray, and M. Levitt. The scale, which used for the purpose of determining the functional status of patients, consists of 22 questions

and 5 dimensions, including physical functions, psychological functions, general well-being, social functions, and gastrointestinal symptoms. The reliability and validity of the scale in Turkey were tested in 2005 by Akdemir and Bektaş. High scores indicate that functional status and life quality were very good [25]. In this study the Cronbach's alpha coefficient for the total scale score was 0.92. The Cancer Patient Social Support Scale is a five point Likert grading scale to determine the type and level of social support patients consider to be receiving from their families. It was developed by Eylem, and its validity and reliability in Turkey were tested in 2001. High scores in the Cancer Patient Social Support Scale indicated that social support provided by families as perceived by cancer patients was high [26]. In this study, Cronbach's alpha coefficient for the total perceived social support was 0.91.

### Ethical considerations of the research

Permission was obtained from the Ankara Second Clinical Studies Ethics Board for the study and the Directorate of Oncology Education and Research Hospital, where the study was to be conducted, and verbal informed consent was obtained from the study participants.

### Data analysis

The evaluation of data and statistics were performed utilizing the Statistical Package for the Social Sciences (SPSS) 15.0. Percentile ratios were utilized to evaluate the defining characteristics of the patients. In the distribution of the scores obtained from the Functional Living Index and Cancer Patient Social Support Scale, the mean, minimum, and maximum values were utilized. In the statistical evaluation of the mean scores of the introductory characteristics of patients, Functional Living Index (cancer) sub-dimensions, and the Cancer Patient Social Support Scale sub-dimensions the independent sample t-test, Kruskal Wallis test, variance analysis test, and Mann-Whitney U-test were utilized. A correlation analysis was conducted to examine the level of significance of the relationship between the patient's Functional Living Index sub-dimensions and Cancer Patient Social Support Scale sub-dimensions. The level of significance in the statistical evaluation was accepted to be  $p < 0.05$ .

## Results

### Defining characteristic of patients

The average age of patients in the study was  $54.41 \pm 14.9$  years. Of the participants in the study, 68.3% were male, 77.8% were married, and 37.9% were primary school graduates. Ninety-three point one percent of patients stated that they required the help they received from close family and when asked, the patients received help from their spouses (35.8%), children (33.1%), relatives and friends (15.2%), and parents (9%). Sixty-four point eight percent of patients stated that they received information regarding the disease or treatment. Thirty-seven point two percent of patients included in the study were diagnosed with larynx, 24.1% with pharynx, 19.4% with oral cavity, and 19.3% with other head and neck cancers. Forty-two point eight percent of patients stated that their diagnosis period was less than 3 months, 43.4% stated that they were in stage II of the disease, and 42.1% in stage III of the disease. Sixty percent of patients included in the study underwent radiotherapy and 26.9% underwent chemotherapy together with radiotherapy. Thirty-five percent of the patients received radiotherapy for 21-27 days and the final radiotherapy

period for 61.5% was 2-4 months. Forty-five point seven percent of patients received two doses of chemotherapy and the last date of chemotherapy was less than one month for 57.5% of the patients. Forty-nine point seven percent of patients underwent surgery and the last date of surgery for 56.3% of the patients was less than three months. Thirty-five point nine percent of patients in the study did not have chronic diseases. It was determined that the functional status of head and neck cancer patients was poor and their total Functional Living Score averages were  $88.24 \pm 19.8$ . It was determined that the average scores of patients regarding physical functions, psychological functions, general well-being, social functions, and gastrointestinal symptoms were low. Total perceived social support of head and neck cancer patients was above average ( $132.7 \pm 14.82$ ); when each sub-scale is evaluated separately; the average security support subscale scores of patients were higher than other sub-scale average scores, and average information support subscale scores were lower.

### **The Introductory characteristics of the relationship between functional living and social support**

In the study, the physical and psychological function scores, gastrointestinal symptoms, and mean total functional living scores of female patients were significantly low. In addition to only mean information support scores being statistically significant, mean social support scores were lower compared to male patients. The perceived social support in patients aged 65 and over was significantly low. The physical function and gastrointestinal symptom mean scores of single patients were significantly high. The trust support and perceived social support scores of widowed patients were significantly low. As the level of education increased, trust support, emotional support, and perceived social support scores increased significantly. The physical function, psychological function, social function, general well-being, total functional living scores, and the perceived social support of patients with a low level of income were lower (Table 1). The functional living means scores and social support mean scores of patients with advanced disease were lower. The gastrointestinal symptoms, total functional living mean scores, information support, and total mean perceived social support scores of patients with a diagnosis period of 7–12 months were low. The functional living areas and information support mean scores of patients that have undergone surgical operations and whose recent surgery was 7-12 months prior were low. The physical function, psychological function, and total functional living mean scores of patients with another chronic disease were lower. The psychological functions and perceived social support levels of informed patients with information were significantly high. The diagnoses of patients, number of chemotherapy days, number of radiotherapy days, final radiotherapy, and period of receiving chemotherapy had an influence on functional living and perceived social support (Table 1). Each functional living scale sub-dimension of head and neck cancer patients have a relationship at a significant level with each social support scale sub-dimensions ( $p < 0.01$ ). As the social support of head and neck cancer patients increases, their functional status improves (Table 2).

## **Discussion**

Cancer of the head and neck region can have a profound effect on basic functioning [11]. Deterioration in functional living has an impact on the individual in physical respects as much as social,

psychological, and economic respects [22,27-28]. In the result of the study of Hassein et al. (2001), in which they investigated the functional status of patients with oral cavity cancer, it was suggested that the functional status of patients was poor and this poor functional status was related to anxiety, depression, and ineffective coping [20]. In the study conducted by Mathieson et al. (1996), the average functional living scores of head and neck cancer patients was 130.80 [18]. In the study conducted by Semple et al. (2008), head and neck cancer patient lifestyles were affected following treatment such as physical changes, concerns about cancer, work, interpersonal relationship, and social functioning [12]. In the current study, the functional living subscale scores of head and neck cancer patients were low and their functional status was poor. The family is one of the most powerful social support sources of individuals and it directly influences the emotions, behaviours, and concerns of the individual during diagnosis and treatment. In the study conducted by Eylen (2002) to determine the social support level in cancer patients, the support received from families was high [26]. In the study of Dedeli et al. (2008), perceived social support of cancer patients was high. In the current study, the social support received by patients from their families was high, as well. The trust support subscale scores were higher and the information subscale scores were lower [17]. The results can be interpreted as family support being high as a result of patient care generally being assumed by families due to cultural characteristics in Turkey. In the literature, it is reported that the sociodemographic characteristics of head and neck cancer patients and properties regarding the disease have an effect on functional living areas and the level of perceived social support. In the study conducted by Hassein et al. (2001), female patients being treated with the diagnosis of oral cavity cancer had poor functional status and these patients had increasing problems [20]. In the study conducted by Graeff et al. (2000), the frequency of encountering symptoms in female patients was higher and the functional status was worse in these patients [28]. In the study conducted by Katz et al. (2003), depression in female patients was high, and these patients identified social support at a low level [29]. In the current study, the functional status and the perceived information support were low in female patients. The study of Segrin (2003) reported that social support relations provided by family members, a friend, or partner were at a higher level among young people [30]. The determination of the significantly low level of social support of patients aged 65 and older in the current study is parallel to the results in the literature. The level of education has an effect on patients in effectively coping with the disease, the positive change of the understanding of health, and social support systems [6]. In the current study, as the level of education increased, trust support, emotional support, and the perceived social support scores also increased significantly. This can be interpreted as the interest of individuals in their own health and life increasing and economic means and social support improving as the level of education increases. Marital status is important in the distribution quality of life and social support resources. In the study conducted by Tramp et al. (2004), whether or not patients were married had an impact on their support systems in coping with the disease [31]. In the study conducted by Aplak et al. (2008), the status of being alone had a negative impact on quality of life. In the current study, physical function and gastrointestinal symptom mean score of single patients was higher [8]. The reason for younger patients receiving higher

**Table 1:** The Introductory characteristics of the relationship between functional living and social support.

| Characteristic             | Functional Living Index Score Mean± SE |                         |                    |                  |                           |              | Cancer Patient Social Support Scale Score Mean± SE |                  |                     |              |
|----------------------------|--|-------------------------|--------------------|------------------|---------------------------|--------------|--|------------------|---------------------|--------------|
|                            | Physical Functions                     | Psychological Functions | General Well-being | Social Functions | Gastrointestinal Symptoms | Total        | S security Support                                 | Emotional Destek | Information Support | Total        |
| <b>Gender</b>              |  |                         |                    |                  |                           |              |  |                  |                     |              |
| Female                     | 28.63± 7.80                            | 23.41±5.33              | 10.8±3.69          | 10.04±2.84       | 8.17±3.57                 | 81.06±17.03  | 51.86±5.85   | 45.71±5.69       | 32.47±4.57          | 130.06±13.25 |
| Male                       | 33.26±9.49                             | 27.44±5.59              | 11.5±3.56          | 9.74±2.62        | 9.61±2.81                 | 91.57±20.19  | 52.17±6.08   | 46.9±6.12        | 34.84±4.73          | 133.92±15.40 |
| t                          | Z:-2.94                                | t:-4.099                | Z:-1.043           | Z:-0.566         | Z:-2.287                  | t:-3.059     | t:-0.281   | t:-1.115         | t:-2.835            | t:-1.467     |
| P                          | <b>0.003</b>                           | <b>0.001</b>            | 0.297              | 0.571            | <b>0.022</b>              | <b>0.003</b> | 0.779  | 0.267            | <b>0.005</b>        | 0.145        |
| <b>Age</b>                 |  |                         |                    |                  |                           |              |  |                  |                     |              |
| 18-35                      | 36.31±9.02                             | 27.1±6.28               | 11.36±4.34         | 10.1±2.20        | 8.94±3.80                 | 93.84±19.20  | 54.73±6.94   | 48.94±6.49       | 34.84±4.66          | 138.52±16.95 |
| 36-49                      | 31.21±8.39                             | 26±6.23                 | 11.69±4.36         | 10.17±2.60       | 8.65±2.93                 | 87.73±19.38  | 55.08±5.35   | 48.13±5.62       | 34.56±5.15          | 137.78±12.97 |
| 50-64                      | 31.5±10.12                             | 25.88±6.11              | 11.23±3.32         | 10.16±2.93       | 9.62±3.06                 | 88.42±21.29  | 52.05±5.43   | 46.4±5.93        | 34.01±4.80          | 132.47±14.16 |
| Over 65                    | 30.52±8.08                             | 26.22±5.05              | 11.09±3.29         | 9.11±2.51        | 8.88±3.03                 | 85.84±18.31  | 49.38±5.51   | 44.81±5.67       | 33.63±4.75          | 127.84±14.34 |
| t                          | F:1.88                                 | F:0.217                 | F:0.146            | KW:5.312         | KW:2.616                  | F:0.724      | <b>0.001</b>                                       | <b>0.038</b>     | 0.781               | <b>0.014</b> |
| P                          | 0.135                                  | 0.884                   | 0.932              | 0.15             | 0.455                     | <b>0.539</b> |  |                  |                     |              |
| <b>Marital Status</b>      |  |                         |                    |                  |                           |              |  |                  |                     |              |
| Married                    | 31.06±9.03                             | 25.88±6.03              | 11.23±3.68         | 9.88±2.80        | 8.84±3.06                 | 86.91±20.20  | 52.27±6.14   | 46.58±6.17       | 34.45±4.86          | 133.3±15.25  |
| Single                     | 38.25±9.05                             | 28.18±5.65              | 12±3.59            | 10.18±1.55       | 10.68±2.2                 | 99.31±17.32  | 53.12±6.51   | 47.87±6.5        | 33.43±4.80          | 134.43±15.81 |
| Widow                      | 30.5±8.61                              | 26.12±3.84              | 10.93±3.10         | 9.18±2.76        | 9.81±2.76                 | 86.56±16.50  | 49.62±3.64   | 44.81±3.56       | 32.25±4.02          | 126.68±8.80  |
| t                          | F:4.662                                | F:1.104                 | F:0.398            | KW:1.001         | KW:6.137                  | F:2.88       | F:3.379  | F:1.918          | KW:3.334            | F:3.379      |
| p                          | <b>0.011</b>                           | 0.334                   | 0.672              | 0.606            | <b>0.046</b>              | 0.059        | <b>0.048</b>                                       | 0.165            | 0.189               | <b>0.048</b> |
| <b>Educational Level</b>   |  |                         |                    |                  |                           |              |  |                  |                     |              |
| Illiterate                 | 30.78±9.67                             | 26±6                    | 11.26±3.75         | 9.56±2.77        | 8.04±3.33                 | 85.65±21.39  | 50.78±5.90   | 45.52±5.61       | 33.39±4.60          | 129.69±13.46 |
| Literate                   | 30.22±7.38                             | 25.95±5.41              | 11.40±3.27         | 8.90±2.72        | 9.68±3.10                 | 86.18±16.19  | 48.36±6.45   | 43.27±6.86       | 32.31±5.25          | 123.95±16.74 |
| Primary school             | 32.17±7.99                             | 26.20±5.38              | 11.36±3.19         | 10.20±2.67       | 9.05±2.95                 | 38.94±18.31  | 48.36±6.45   | 43.27±6.86       | 32.31±5.25          | 123.95±16.74 |
| High school                | 35.61±12.09                            | 26.23±7.08              | 11.28±4.81         | 10.28±2.62       | 9.8±3.51                  | 93.23±24.51  | 51.65±5.15   | 46.36±5.32       | 34.60±4.60          | 132.61±12.61 |
| Bachelor                   | 38.5±10.17                             | 31±6.72                 | 15±3.57            | 9.5±2.88         | 11.5±1.64                 | 105.5±22.51  | 57.04±5.11   | 49.76±6.31       | 35.09±5.43          | 141.5±15.54  |
| KW                         | 10.23                                  | 41.14                   | 9.02               | 4.35             | 9.15                      | 8.32         | 55.66±7.03   | 49.5±6.09        | 36.33±5.31          | 141.5±16.77  |
| p                          | 0.069                                  | 0.491                   | 0.108              | 0.499            | 0.103                     | 0.139        | <b>23.99</b>                                       | <b>11.71</b>     | 6.46                | <b>14.08</b> |
| <b>Information receive</b> |  |                         |                    |                  |                           |              |  |                  |                     |              |
| Yes                        | 32.67±9.72                             | 26.98±5.77              | 11.56±3.90         | 10.13±2.62       | 9.14±3.13                 | 90.51±20.42  | 53.28±5.77   | 47.34±5.87       | 34.21±4.88          | 134.84±14.59 |
| No                         | 30.17±8.04                             | 24.64±5.61              | 10.76±2.95         | 9.29±2.74        | 9.17±3.16                 | 84.05±18.06  | 49.84±5.81   | 45.09±5.98       | 33.88±4.77          | 128.76±14.57 |
| t                          | t:1.563                                | t:2.356                 | t:1.385            | Z:-1.752         | Z:1.17                    | t:1.889      | t:3.422  | t:2.237          | t:3.95              | t:2.395      |
| P                          | 0.12                                   | <b>0.02</b>             | 0.168              | 0.08             | 0.907                     | 0.061        | <b>0.001</b>                                       | <b>0.027</b>     | 0.694               | <b>0.018</b> |
| <b>Time of diagnosis</b>   |  |                         |                    |                  |                           |              |  |                  |                     |              |
| 0-3 month                  | 35.08±9.51                             | 28.33±6.05              | 12.32±3.62         | 10.03±2.54       | 9.19±3.24                 | 94.96±21.18  | 52.37±6.49   | 47.04±6.24       | 34.08±5.03          | 133.5±15.83  |
| 4-6 month                  | 30.28±8.59                             | 24.97±5.44              | 10.77±3.34         | 10.2±2.55        | 8.77±2.96                 | 85.02±17.84  | 52.48±4.94   | 46.86±5.22       | 35.26±4.65          | 134.62±12.64 |
| 7-12 month                 | 27.67±7.70                             | 23.77±4.60              | 10.12±3.40         | 9.09±3.16        | 9.25±3.06                 | 79.93±16.15  | 50.83±6.27   | 44.87±6.26       | 32.19±4.01          | 127.9±14.70  |
| Over 13 month              | 30.57±7.97                             | 25.14±4.81              | 10.42±4.19         | 9.14±2.26        | 10.85±3.53                | 86.14±17.60  | 52.28±6.96   | 47.14±7.19       | 35.14±4.94          | 134.57±17.71 |
| KW                         | 14.557                                 | 15.991                  | 9.576              | 3.82             | 3.9                       | 12.348       | 12.348   | 2.149            | 9.456               | 4.105        |
| P                          | <b>0.002</b>                           | <b>0.001</b>            | <b>0.023</b>       | 0.282            | 0.262                     | <b>0.006</b> | 0.76   | 0.49             | <b>0.024</b>        | 0.25         |
| <b>Stage</b>               |  |                         |                    |                  |                           |              |  |                  |                     |              |
| Stage I                    | 44.71±5.15                             | 33.42±3.77              | 16.42±1.98         | 11.28±1.97       | 11.85±1.34                | 117.71±12.16 | 54.57±7.63   | 51±5.77          | 37±4.54             | 142.57±16.86 |
| Stage II                   | 36.06±7.99                             | 28.49±4.81              | 12.58±2.10         | 10.25±2.10       | 9.06±2.95                 | 96.46±17.12  | 52.5±5.57  | 47.49±5.47       | 35.19±4.67          | 135.19±13.73 |
| Stage III                  | 28.11±7.49                             | 24.32±5.39              | 10.11±2.90         | 9.59±3.03        | 8.93±3.22                 | 81.08±16.41  | 52±6.17  | 46.01±6.06       | 33.47±4.74          | 131.49±14.73 |



|                      |              |              |              |              |              |              |              |              |              |               |
|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Stage IV             | 22.14±4.78   | 20.07±3.42   | 7.92±2.49    | 8.35±3.15    | 9.21±3.74    | 67.71±12.08  | 49.21±5.83   | 42.21±5.80   | 30.42±3.22   | 121.85±13.62  |
| KW                   | 57.166       | 46.293       | 39.483       | 7.35         | 6.372        | 51.311       | 3.501        | 12.596       | 16.155       | 11.979        |
| P                    | <b>0.001</b> | <b>0.001</b> | <b>0.001</b> | 0.062        | 0.095        | <b>0.001</b> | 0.321        | <b>0.006</b> | <b>0.001</b> | <b>0.007</b>  |
| <b>Treatment</b>     |              |              |              |              |              |              |              |              |              |               |
| Chemotherapy         | 26.42±7.48   | 22.28±5.76   | 10.85±3.62   | 9.14±3.80    | 8.57±3.73    | 77.28±16.94  | 53.85±4.67   | 46±4.08      | 32.42±4.46   | 132.28±10.49  |
| Radiation            | 33.12±9.14   | 26.7±5.47    | 11.49±3.28   | 9.83±2.54    | 9.58±2.93    | 90.74±19.27  | 51.36±6.11   | 46.33±6.16   | 34.47±4.74   | 132.17±15.25  |
| KT VE RT             | 31.56±8.68   | 27.23±5      | 11.38±3.98   | 9.71±2.67    | 8.87±2.90    | 88.76±19.14  | 52.74±5.58   | 47.2±5.97    | 34.61±4.70   | 134.56±14.75  |
| Kontrol              | 26±9.94      | 21.08±7.65   | 9.66±4.51    | 10.66±3.20   | 7.33±4.35    | 74.75±22.08  | 54±6.87      | 46.08±6.27   | 30.66±4.59   | 130.75±15.02  |
| KW                   | 10.993       | 13.729       | 3.227        | 1.806        | 4.756        | 11.942       | 3.561        | 1.278        | 8.321        | 1.496         |
| P                    | <b>0.012</b> | <b>0.003</b> | 0.358        | 0.614        | 0.191        | <b>0.008</b> | 0.313        | 0.734        | <b>0.04</b>  | 0.683         |
| <b>Surgery</b>       |              |              |              |              |              |              |              |              |              |               |
| Yes                  | 29.44±8.54   | 24.9±5.39    | 10.13±3.32   | 9.41±2.86    | 9.29±3.01    | 83.19±18.51  | 51.41±6.29   | 45.43±4.69   | 33.25±4.69   | 130.09±15.21  |
| No                   | 34.1±9.32    | 27.41±5.96   | 12.41±3.54   | 10.26±2.45   | 9.02±3.26    | 93.21±19.90  | 52.27±5.66   | 47.61±5.47   | 34.93±4.78   | 135.27±14.05  |
| t                    | t:-3.138     | t:-2.654     | Z:-3.73      | Z:-1.753     | Z:-.450      | Z:-3.238     | t:-1.317     | t:-2.225     | t:-2.136     | t:-2.128      |
| P                    | <b>0.002</b> | <b>0.009</b> | <b>0.001</b> | <b>0.08</b>  | <b>0.653</b> | <b>0.001</b> | 0.19         | 0.028        | 0.034        | 0.035         |
| <b>Surgery Time</b>  |              |              |              |              |              |              |              |              |              |               |
| 0-3 month            | 28.12±6.26   | 23.87±3.22   | 10.12±3.04   | 9.12±2.32    | 9.37±4.13    | 80.62±12.42  | 51.62± 5.55  | 39.25±3.24   | 32.87 ±2.64  | 124.37 ±11.61 |
| 4-6 month            | 30.18±9.61   | 25.53±6.67   | 10.4±3.85    | 9.78±3.02    | 8.46±2.90    | 84.37±22.06  | 53.53 ±6.71  | 39.56±2.43   | 27.71 ±5.33  | 123.7±112.70  |
| 7-12 month           | 27.24±8.09   | 23.44±4.51   | 9.28±2.49    | 9.12±3.004   | 9.52±2.66    | 78.6±15.89   | 49.44 ±5.02  | 38.80±2.32   | 26.56 ±5.65  | 121.71 ±11.41 |
| Over 13 month        | 33.83±7.98   | 26.66±4.63   | 12.66±3.66   | 8.66±3.07    | 11.83±1.94   | 93.66±17.75  | 53.01± 6.34  | 39.09 ±2.51  | 32.54± 5.31  | 123.66 ±12.01 |
| t                    | 3.93         | 2.61         | 4.06         | 1.99         | 7.84         | 2.88         | 0.933        | 0.424        | 6.54         | 0.093         |
| P                    | 0.269        | 0.455        | 0.255        | 0.706        | <b>0.049</b> | <b>0.41</b>  | 0.334        | 0.515        | <b>0.011</b> | <b>0.76</b>   |
| <b>Cronic İllnes</b> |              |              |              |              |              |              |              |              |              |               |
| Yes                  | 33.21±9.50   | 26.73±6.02   | 11.4±3.70    | 10.22±2.58   | 9.13±3.24    | 90.71±20.59  | 52.88±5.75   | 47.42±5.46   | 34.7±4.54    | 135.01±13.62  |
| No                   | 29.17±8.12   | 25.11±5.27   | 11.058±3.43  | 9.13±2.75    | 9.19±2.94    | 83.68±17.55  | 50.58±6.20   | 44.88±6.62   | 32.98±5.09   | 128.45±16.09  |
| t                    | t:-2.565     | t:-1.609     | Z:-.389      | Z:-2.22      | t:.106       | t:-2.062     | t:-2.230     | t:-2.482     | t:-2.087     | t:-2.595      |
| P                    | <b>0.011</b> | 0.11         | 0.697        | <b>0.026</b> | 0.916        | <b>0.041</b> | <b>0.027</b> | <b>0.014</b> | <b>0.039</b> | <b>0.01</b>   |

scores in functional living areas can be considered as a failure of married patients to receive adequate support from their partners and the effect of peer groups on single patients. In the study conducted by Iecovich (2004), the social network of individuals that live on their own and are unmarried was small [32]. Parallel to the literature, trust support and perceived social support scores of widowed patients were significantly low in the current study. In the present study, psychological function, gastrointestinal symptoms, and total mean functional living score and social support score of patients with a high level of income was low. Campbell et al. (2000) reported that economic sufficiency increased quality of life [13]. This is considered to be associated with the fact that individuals with a low socioeconomic status have difficulty accessing a good life and care services. As the stage of the disease progresses in head and neck cancer patients, there is an increase in the frequency of symptoms and a decrease in quality of life. Graeff et al. (2000) stated that there was an increase in the frequency of symptoms in patients with advanced disease and this was associated with the deterioration in the functional status [28]. In the present study, the functional living area and mean social support scores of patients with advanced disease were lower. In the literature, it is reported that the functional status is worse in patients for whom more than one treatment option is applied together. The study of

Aplak et al. (2008) reported that patients receiving only RT treatment obtained better scores for physical and emotional function [8]. In the current study, the functional living index scores and information support scores of patients coming for check-ups after treatment was poor. In the study conducted by Hutton and Williams (2001), patients not actively treated also have problems such as anxiety and depression and the need for support of patients after treatment should be addressed [33]. The fear of patients in remission that a finding pertaining to the disease will be found in every check-up period and their functional life and social support perception being influenced by this can be interpreted as the reason for this. In the study by Graeff et al. (2000), there was a decrease in emotional function and an increase in the frequency of depression in the 6<sup>th</sup> and 12<sup>th</sup> months [28]. In their study, Karnell et al. (2007) reported that patients identified lower social support in the 12<sup>th</sup> month after treatment compared to the time of diagnosis [21]. In the present study, the functional status and mean information support scores of patients with a diagnosis period of 7-12 months were lower. The increase in need for social support, the fear of disease relapse, and the decrease of expectations and hopes with regards to treatment as the disease period increases can be interpreted as the reason for this. In addition to causing functional disorders, organ protection treatment in head and neck cancer patients, surgical

**Table 2:** Correlation of patient's functional living and cancer patient social support scale average scores.

| Cancer Patient Social Support Scale | Physical Functions | Psychological Functions | General Well-being | Social Functions | Gastrointestinal Symptoms | Total  |
|-------------------------------------|--------------------|-------------------------|--------------------|------------------|---------------------------|--------|
|                                     | r                  | r                       | r                  | r                | r                         | r      |
| Security Support                    | 0.331*             | 0.348*                  | 0.31*              | 0.554*           | 0.083*                    | 0.374* |
| Emotional Support                   | 0.521*             | 0.532*                  | 0.484*             | 0.634*           | 0.029*                    | 0.577* |
| Information Support                 | 0.498*             | 0.547*                  | 0.404*             | 0.403*           | 0.146*                    | 0.544* |
| Total                               | 0.506*             | 0.533*                  | 0.452*             | 0.611*           | 0.025*                    | 0.561* |

treatment has an adverse effect on the psychological well-being and quality of life individuals due to changes in body image. Campbell et al. (2000) reported that they observed lower life quality rates in head and neck cancer patients undergoing surgical operations compared to those that are receiving radiotherapy treatment [13]. In the current study, the functional living areas and mean information support scores of patients that have undergone surgical operations and whose most recent surgery period was within 7-12 months were low and the findings are parallel to the literature. The existence of secondary diseases deteriorates the prognosis of the disease and thus, causes the emergence of adverse effects on quality of life [34]. In the present study, patients with another chronic disease have lower physical function, psychological function, and total functional living scores. The training conducted during the diagnosis and treatment stage is reported to decrease the anxiety levels of patients and decrease dependency when their feeling of control increases. Helgson (2003) suggests that information support through training provided by experts in the control of stress is very beneficial [35]. Hammer lied et al. (1999) reported that progress was observed in many variables, including the status of symptoms and functions as a result of the psychoeducational program for head and neck cancer patients [36]. Parallel to the literature, in the present study, it was determined that the psychological function and social support of patients receiving information was high.

The literature states that as social support for head and neck cancer patients increases, functional living will improve [37,38]. The study conducted by Karnell et al. (2007) indicated a relationship between increasing social support scores and decreasing depressive symptoms [21]. In the study of Mathieson et al. (1996), they stated that the support received from the family physician is the most important type of support and it has a positive relationship with quality of life [18]. Howren et al. (2012) reported that greater perceived support present at diagnosis significantly predicted a more favourable quality of life at the 3 and 12 month follow-ups [39]. Katz (2003) stated that perceived social support was associated with improved adjustment on well-being [29]. In the assessment conducted in the current study, it was determined that there was a positive and significant relation between the functional status of patients and the social support. It can be said that in head and neck cancer patients, social support increases and functional status increases.

## Conclusion

The findings obtained in this study indicated that the average functional living scale scores of head and neck cancer patients were low (88.24±19.8), the social support they receive from their families was at a good level (132.7±14.82), and social support influenced functional status. The determination of problems experienced by head

and neck cancer patients as a result of the disease and treatment will provide for the planning of care and training for the enhancement of functional living. Its importance in supporting of families regarding the provision of social support will provide benefits for the planning of counselling and training services.

## References

- Argiris A, Karamouzis MV, Raben D, Ferris RL. Head and neck cancer. *Lancet*. 2008; 371: 1695-1709.
- Mehanna H, Paleri V, West CML, Nutting C. Head and neck cancer epidemiology, presentation and prevention. *BMJ* 2010; 23:41-468.
- Jemal A, Bray F, Center MM, Ferlay J, Ward E, Forman D. Global cancer statistics. *CA Cancer J Clin*. 2011; 61: 69-90.
- Ministry of Health 2004-2006 Years Cancer Statistics.
- Eades M, Chasen M, Bhargava R. Rehabilitation: long-term physical and functional changes following treatment. *Semin Oncol Nurs*. 2009; 25: 222-230.
- Babin E, Sigston E, Hitier M, Dehesdin D, Marie JP, Choussy O. Quality of life in head and neck cancers patients: predictive factors, functional and psychosocial outcome. *Eur Arch Otorhinolaryngol*. 2008; 265: 265-270.
- Ziegler L, Newell R, Stafford N, Lewin R. A literature review of head and neck cancer patients information needs, experiences and views regarding decision-making. *European Journal of Cancer*. 2004; 13:119-126.
- Aplak B, Malkoç M, Sen M. Quality of Turkish patient with head and neck cancer. *Journal of Cancer*. 2007; 37:129-136.
- Funk GF, Karnell LH, Christensen AJ. Long-term health-related quality of life in survivors of head and neck cancer. *Arch Otolaryngol Head Neck Surg*. 2012; 138: 123-133.
- Onakoya PA, Nwaorgu OG, Adenipekun AO, Aluko AA, Ibekwe TS. Quality of life in patients with head and neck cancers. *J Natl Med Assoc*. 2006; 98: 765-770.
- List MA, Bilir SP. Functional outcomes in head and neck cancer. *Semin Radiat Oncol*. 2004; 14: 178-189.
- Semple CJ, Dunwoody L, George Kernohan W, McCaughan E, Sullivan K. Changes and challenges to patients' lifestyle patterns following treatment for head and neck cancer. *J Adv Nurs*. 2008; 63: 85-93.
- Campbell BH, Marbella A, Layde PM. Quality of life and recurrence concern in survivors of head and neck cancer. *Laryngoscope*. 2000; 110: 895-906.
- Morton RP. Life-satisfaction in patients with head and neck cancer. *Clin Otolaryngol Allied Sci*. 1995; 20: 499-503.
- Rosenthal DI, Mendoza T, Cleeland C. Identify head and neck cancer patients at risk for high symptom burden during treatment. *Journal of Clinical Oncology*. 2009; 27:15-16.
- Owen C, Watkinson JC, Pracy P, Glaholm J. The psychosocial impact of head and neck cancer. *Clin Otolaryngol Allied Sci*. 2001; 26: 351-356.
- Dedeli Ö, Fadiloglu Ç, Uslu R. The investigation of functional statuses in individuals with cancer and the social support they perceive. *Turkish Oncology Journal*. 2008; 23: 132-139.
- Mathieson CM, Logan-Smith LL, Phillips J, MacPhee M, Attia EL. Caring for

- head and neck oncology patients. Does social support lead to better quality of life? *Can Fam Physician*. 1996; 42: 1712-1720.
19. Karnell LH, Christensen AJ, Rosenthal EL, Magnuson JS, Funk GF. Influence of social support on health-related quality of life outcomes in head and neck cancer. *Head Neck*. 2007; 29: 143-146.
20. Rogers SN, Ahad SA, Murphy AP. A structured review and theme analysis of papers published on 'quality of life' in head and neck cancer: 2000-2005. *Oral Oncol*. 2007; 43: 843-868.
21. Karnell LH, Christensen AJ, Rosenthal EL, Magnuson JS, Funk GF. Influence of social support on health-related quality of life outcomes in head and neck cancer. *Head Neck*. 2007; 29: 143-146.
22. Llewellyn CD, McGurk M, Weinman J. Are psycho-social and behavioural factors related to health related-quality of life in patients with head and neck cancer? A systematic review. *Oral Oncol*. 2005; 41: 440-454.
23. Penedo FJ, Traeger L, Benedict C, Thomas G, Dahn JR, Krause MH, Goodwin WJ. Perceived social support as a predictor of disease-specific quality of life in head-and-neck cancer patients. *J Support Oncol*. 2012; 10: 119-123.
24. Verdonck-de Leeuw IM, van Nieuwenhuizen A, Leemans CR. The value of quality-of-life questionnaires in head and neck cancer. *Curr Opin Otolaryngol Head Neck Surg*. 2012; 20: 142-147.
25. Bektas HA, Akdemir N. The assessment of functional status in individuals who have cancer. *Turkey Clinics J Med Sci*. 2006; 26:488-499.
26. Eylen B. A study on validity, reliability, and factor structure of the Cancer Patient Social Support Scale. *The Journal of Uludag University Education Faculty*. 2002; 15: 109-117.
27. Penner JL. Psychosocial care of patients with head and neck cancer. *Semin Oncol Nurs*. 2009; 25: 231-241.
28. de Graeff A, de Leeuw JR, Ros WJ, Hordijk GJ, Blijham GH, Winnubst JA. Long-term quality of life of patients with head and neck cancer. *Laryngoscope*. 2000; 110: 98-106.
29. Katz MR, Irish JC, Devins GM, Rodin GM, Gullane PJ. Psychosocial adjustment in head and neck cancer: the impact of disfigurement, gender and social support. *Head Neck*. 2003; 25: 103-112.
30. Segrin C. Age moderates the relationships between social support and psychosocial problems. *Human Communication Research*. 2003; 29:317-342.
31. Tromp DM, Brouha XD, De Leeuw JR, Hordijk GJ, Winnubst JA. Psychological factors and patient delay in patients with head and neck cancer. *Eur J Cancer*. 2004; 40: 1509-1516.
32. Iecovich E, Barash M, Mirsky J, Kaufman R, Avgar A, Kol- Fogelson A. Social Support Networks And Loneliness Among Elderly Jews In Russia And Ukraina. *Journal of Married and Family*. 2004; 66:306-317.
33. Hutton JM, Williams M. An investigation of psychological distress in patients who have been treated for head and neck cancer. *Br J Oral Maxillofac Surg*. 2001; 39: 333-339.
34. GÃ¼ney E, CaÃ¼li S, YÃ¼ce I. [Head and neck cancers in geriatric patients]. *Kulak Burun Bogaz Ihtis Derg*. 2009; 19: 45-54.
35. Helgeson VS, Cohen S. Social support and adjustment to cancer: reconciling descriptive, correlational, and intervention research. *Health Psychol*. 1996; 15: 135-148.
36. Hammerlid E, Persson LO, Sullivan M, Westin T. Quality-of-life effects of psychosocial intervention in patients with head and neck cancer. *Otolaryngol Head Neck Surg*. 1999; 120: 507-516.
37. Semple CJ, Sullivan K, Dunwoody L, Kernohan WG. Psychosocial interventions for patients with head and neck cancer: past, present, and future. *Cancer Nurs*. 2004; 27: 434-441.
38. Luckett T, Britton B, Clover K, Rankin NM. Evidence for interventions to improve psychological outcomes in people with head and neck cancer: a systematic review of the literature. *Support Care Cancer*. 2011; 19: 871-881.
39. Howren MB, Christensen AJ, Hynds Karnell L, Van Liew JR, Funk GF. Influence of pretreatment social support on health-related quality of life in head and neck cancer survivors: results from a prospective study. *Head Neck*. 2013; 35: 779-787.