

# Examination Methods of Life Quality in Cancer Patients of the Head and Neck

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**Abstract:** ***Introduction:** Oncological diseases in the area of the head and neck cause numerous functional disorders and changes in appearance, that make the quality of life worse. **Objective:** The purpose of this research is to follow up and analyze the methods, used to examination and evaluation of quality of life in patients with cancer of the head and neck. **Discussion:** Treatment and rehabilitation of cancer patients in maxillo-facial area is complicated and long process. This requires examination and assessment of their general physical and mental health. The main methods and tools for evaluation life quality in these patients are the surveys. **Conclusion:** The application of specific methods for examination the quality of life in patients with cancer of the head and neck allows an objective assessment of their condition, which supports the treatment and rehabilitation.*

**Keywords:** quality of life, cancer of head and neck, maxillofacial defects, maxillary resection, obturator

## 1. Introduction

In recent years, the term “quality of life” entered widely in medicine as a tool to assess the outcome of and the degree of satisfaction with the treatment. This is what a number of authors [1, 2, 3], establishing a connection between the quality of life of patients and their health, find. The quality of life is a major motive in choosing the method of treatment; for 78 % of the doctors it is as important as the survival of the patient [4].

World Health Organization (WHO) defines “quality of life” as “an individual's perception in the context of his cultural and value systems in relation to his objectives, expectations and standards” [5]. Different criteria for evaluation are used for its study and analysis, with the possibility to track the physical, mental and social well-being of the individual, refracted through his subjective perceptions [6, 7].

Physical well-being includes good health, and generally, physical activity, prevention of pain and diseases, and the ability to independently perform activities related to the personal and social needs of the individual [5].

Mental aspects of quality of life related to mental health, various states of stress, positive and negative emotional states, sometimes influenced by health status and ability to assess oneself [5].

Social wellbeing is the most diverse and difficult to measure because it involves activity in private life and family, friendship and interpersonal relationships, career development, entertainment, leisure, social environment and life in it and material opportunities to maintain health [5].

According to Felce et Perry [8] quality of life is multidimensional and can be defined by five major categories - physical and social well-being, emotional well-being, ability to develop and find fulfilment and be active in any way. Moreover, no standards for quality of life should be introduced without taking into account individual characteristics and condition of the patient.

## 2. Objective

The purpose of this research is to follow up and analyze the methods, used to examination and evaluation of quality of life in patients with cancer of the head and neck.

## 3. Literature Survey

The injuries in maxillofacial area lead to serious aesthetic changes, psychological problems and functional disorders, associated with difficulties in chewing, swallowing, speaking and breathing [9, 10]. According to Lin et Wang [11] solving of these problems is possible only after examination of patient's individual needs. For this reason, different types of surveys are applied for assessment the quality of life [12, 13, 14, 15, 16]. Most of them use established and proven questionnaires, some of which relevant to healthy people (17, 18). One, commonly used is SF-36 [19], which is recommended from the International Centre for Investigation the Quality of Life (ICIQL), as a universal method of examination of health, physically and mental well-being. It is also used for analysis of the achieved treatment results [17, 20]. The survey contains 36 questions for following up different parameters of quality of life, separated into 8 groups. Modifications with variety of questions from SF-8 to SF-56 are also used. Its structure allows transformation and assessment of obtained results by scale from 0 to 100. According to this scale, a higher value corresponds with better quality of life [18]

McGill [21] examines the physical and mental state of patients and their sense of well-being and emotional support by a questionnaire, which contains 16 questions. In this research the pain takes a special place, which, according to the author, is a defining factor for the quality of life through every stage of the treatment. The results are evaluated on a scale from 1 to 10.

The questionnaire of University of Washington (UWQOL) is often used. It contains 15 questions for evaluation the general physical condition of the patients and their problems in the last 7 days [22]. The results are evaluated on scale from 0 to 100.

Volume 6 Issue 2, February 2017

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Some authors [4, 23, 24, 25, 26] claim, that life quality examination of cancer patients on the head and neck, requires the application of specific surveys. Such a character has the questionnaire HN-QOL, which contains 20 questions for analysis the pain, feeding, communication and the emotional state of the treated patients [27]. Its usage allows a comprehensive study of the quality of life in patients with cancer of the head and neck [28]. The version HNRQ is used when the treatment includes radiotherapy [29].

The functional state of the patients takes a specific place in some research [24, 30, 31, 32]. The scale for functional assessment of cancer treatment (FACT-G) is very preferred. This scale follows up the changes in patients' physical, social, emotional and functional state during the treatment [30]. The version FACT-HN gives an objective assessment of the life quality of cancer patients on the head and neck [24]. A similar method for assessment the functional state uses the International Classification of Functioning, Disability and Health (ICF), established by International Health Organization in 2001 [32]. This classification evaluates 112 parameters for cancer of the head and neck, which are 8% of the whole IFC classification. The assessment may vary from 0 (no damage) to 4 (total damaged). The analysis of the results revealed the leading role of 33 parameters. This is the reason why some authors claim, that this survey is unreliable [33].

The scale, for assessment the functional state of patients PSS-HN [31], allows examination of the speaking, diet and feeding in public places, which gives important information for the general health condition and the quality of life [24]. Makareevich [34] uses a questionnaire of 36 questions to examine the physical and mental state, social contacts, masticatory function, speaking and aesthetic of patients with obturators. The assessment of the results is on scale from 0 to 100, as the higher value corresponds to better quality of life. Some authors [35] describe a similar method for assessment life quality in patients with maxillary resection, using a „System Control Card“ (SCC-8). A simple table with 20 questions allows an objective evaluation of the level of satisfaction in patients after treatment [36].

According to Jacobson [37], voice damage is a factor with major influence of life quality. The author has established voice handicap index (VHI) to follow up its change after treatment or illness. VHI assess the functional, physical and emotional influence of the voice on life quality. For optimizing the research, Rosen et al. [38] introduced the survey of 10 questions (VHI-10).

The European Organization for Research and Treatment of Cancer (EORTC) has developed and implemented an integrated modular approach for evaluation life quality [39]. Several versions of the basic questionnaire (EORTC QLQ-C30), with functional and symptomatic scales from 0 to 100, are used for assessment of the general status [40]. Higher values in the functional scale and general health scale express better life quality, but these ones in the symptomatic scale indicates for more serious damages. The module EORTC QLQ-HN35 has been developed for the cases of cancer of the head and neck. It has 35 questions, grouped in seven scales, for evaluation of pain, swallowing, sensory,

speaking, feeding, social and sexual communication of the patients [41]. It is assumed, that its application provides more reliability and validity than EORTC QLQ-C30 [42]. These two questionnaires are also applied with success in patients with conducted radiotherapy and chemotherapy [43].

The desire for quick an easy research of life quality leads to constantly creation of new methods of examination [44]. Silveira et al. [45] developed a software version for research of life quality in cancer patients of the head and neck, which provides access to huge data base and easy statistic analysis. The submitted results are similar to the classic survey, but 53% of the patients prefer the software version.

Many authors [39, 46, 47] consider that an objective evaluation is possible only through usage of reliable and valid surveys. Sometimes this is in correlation with the usage of several questionnaires, for providing a reliability and universality of the study [23, 24, 25, 34]. In such a research, Chaukar et al. [23] established that the usage of EORTC QLQ-C30 and HN-QOL provides an objective assessment of physical and mental health of cancer patients on the head and neck, and List et al. [24] proved the efficiency of FACT-HN and PSS-HN. Usui [48] claims, that only simultaneous application of surveys and objective research methods ensures reliability of the study.

#### 4. Discussion

Increasing the number of cancer patients in maxillofacial area and life span after treatment are the reasons for development of various methods of research and evaluation of life quality. Most of them use subjective assessment of patients for their physical and mental condition and problems, occurred after treatment [12, 13, 15, 16]. Applied surveys contain different amounts of information and evaluation indicators. Some of them are mainly used in healthy people and are seen as a universal tool for examination and evaluation of health [18, 19]. Other methods [17] follow up mostly the changes in general health condition in patients after treatment. The obtained data in this type of studies have found no specific changes in the quality of life of patients with cancer of the head and neck. This requires the creation and development of specific questionnaires for assessment and analysis of various indicators of quality of life [49]. Many authors [39, 40, 41, 42, 43] consider, that this provides objectivity and universality of the studies. This approach is the reason for the creation and development of large surveys with many similar issues, which confuses patients. The variety of so many examination methods is also a reason to reveal different and sometimes conflicting data. To solve this problem some authors [35, 36] recommend the use of short and simple questionnaires, which facilitates the patients and reveals the level of satisfaction from both- health condition and the treatment. This thesis, however, is not accepted by other authors [23, 24, 25], who believe that the best results occur only in researches with several questionnaires. Some of them [48] claim, that authenticity of the research is only possible through simultaneous application of surveys and objective methods of examination. The received results are contradictory, as some authors [3] claim that the subjective

assessment of some parameters of life quality corresponds to the objective clinical research. Other authors [50] do not establish such a correlation.

## 5. Conclusions

Rehabilitation of patients with cancer of the head and neck is a complicated multistep process associated with overcoming many difficulties and problems. The main difficulties come from affecting all elements of orofacial complex in different levels, which makes chewing, feeding, speaking and breathing difficult. Damaged or lost function and changed appearance make patients' quality of life worse. The problems are individual in each patient, because of the different volume and localization of the defect. This requires an objective assessment of the general condition of the patient, as well as his specific needs and demands. The examination and analysis of the problems requires the development of specific methods for evaluation of quality of life, to support the rehabilitation of these patients.

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