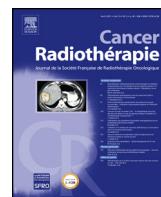




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## Original article

# Effects of health education intervention on negative emotion and quality of life of patients with laryngeal cancer after postoperative radiotherapy



*Effets de l'éducation sanitaire sur l'émotion négative et la qualité de vie chez les patients atteints de cancer du larynx après radiothérapie postopératoire*

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## ABSTRACT

**Purpose.** – The study aimed to explore and analyze the effects of health education intervention on patients with laryngeal cancer and evaluate negative emotions and quality of life after receiving postoperative radiotherapy. Furthermore the relationship between health education intervention methods and its correlation to complications and relapse rates require greater understanding.

**Material and methods.** – Patients with laryngeal cancer receiving surgery and postoperative radiotherapy were randomly divided into observation and control groups. A quality of life questionnaire was used to evaluate patients' current life quality as well as negative emotions experienced. The collected data was evaluated using the Self-rating Anxiety Scale (SAS) as well as the Self-rating Depression Scale (SDS). At the time of discharge, patients' satisfaction on nursing and perception of health knowledge was assessed. Three and six months after discharge, patients were given follow-up visits and questionnaire surveys to evaluate their rehabilitation. This was done in relation with the Morningside Rehabilitation Stats Scale (MRSS), incidence of complications and recurrence.

**Results.** – The scores of negative emotions, exhibited during the study, were lower in the observation group than in the control group. A month after discharge had a positive correlation to improved quality of life. This was highlighted in the observation group in comparison with the control group. The data collected following discharge revealed an improvement in quality of life, compared with that at the time of admission. Compared with the control group, the SAS and SDS scores in the observation group were decreased a month after discharge. Compared with the scores at admission, the SAS and SDS scores in both groups were decreased one month after discharge. The observation group had a lower incidence of complications than that of the control group. Six months after discharge, in the observation group, the MRSS score was lower than before discharge while in the control group, the MRSS score was higher than before discharge.

**Conclusions.** – Health education intervention can significantly improve the quality of life and reduce experiences relating to negative emotion in patients with laryngeal cancer. This improvement was seen following surgery and radiotherapy. Additionally effective reduction rates in the incidence of postoperative complications and recurrence were exhibited following methods of health education intervention.

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## RÉSUMÉ

## Mots clés :

Intervention en matière d'éducation à la santé

Cancer du larynx

**Objectif de l'étude.** – L'étude visait à explorer et à analyser les effets de l'éducation sanitaire chez les patients atteints de cancer du larynx et d'évaluer les émotions négatives et la qualité de vie après une radiothérapie postopératoire. En outre, la relation entre les méthodes d'éducation de la santé et leur corrélation avec les complications et les taux de rechute nécessitent une meilleure compréhension.

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Radiothérapie  
 Émotion négative  
 Qualité de vie  
 Échelle des statistiques de réadaptation de Morningside  
 Échelle d'anxiété autoévaluation  
 Échelle de dépression à auto-évaluation

**Matériel et méthodes.** – Les patients atteints de cancer du larynx recevant après une intervention chirurgicale une radiothérapie ont été randomisés en groupes observés et témoins. Un questionnaire sur la qualité de vie a été utilisé pour évaluer la qualité de vie actuelle des patients ainsi que les émotions négatives éprouvées. Les données recueillies ont été évaluées à l'aide de l'échelle d'anxiété auto-évaluée (SAS) ainsi que de l'échelle de dépression auto-évaluée (SDS). La satisfaction des patients sur les soins infirmiers et la perception des connaissances sur la santé ont été évaluées. Trois mois et six mois après la sortie, les patients ont été revus et un questionnaire a évalué leur réadaptation. Cela a été fait en relation avec l'échelle de statistiques de rééducation de Morningside (MRSS), l'incidence des complications et la récidive.

**Résultats.** – Les scores d'émotions négatives étaient plus faibles dans le groupe d'observation que dans le groupe témoin. Un mois après, il y avait une corrélation positive, avec l'amélioration de la qualité de vie dans le groupe observé par rapport au groupe témoin. Il y avait une amélioration de la qualité de vie par rapport au moment de l'admission. Par rapport au groupe témoin, les SAS et SDS étaient diminués un mois après la sortie. Par rapport aux scores à l'admission, les SAS et SDS dans les deux groupes étaient diminués un mois après la sortie. Le groupe observé avait moins de complications que le témoin. Six mois après la sortie, dans le groupe observé, le MRSS était inférieur à celui de la sortie alors que, dans le groupe témoin, il était plus élevé qu'avant la sortie.

**Conclusions.** – L'intervention en matière d'éducation à la santé peut améliorer considérablement la qualité de vie et réduire les expériences liées à l'émotion négative chez les patients atteints de cancer du larynx. Cette amélioration a été observée après chirurgie et radiothérapie. En outre, des taux de réduction effectifs de l'incidence des complications postopératoires et des récidives ont été exposés selon les méthodes d'intervention en matière d'éducation à la santé.

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## 1. Introduction

Laryngeal cancer is one of the most common malignant types of head and neck cancer. The majority of patients with laryngeal cancer are represented by squamous-cell carcinoma, predominately on the epithelial lining of the larynx [1,2]. Although the incidence of laryngeal cancer is relatively low regarding all cancers, the mortality rate has been steadily increasing year by year. It has been reported that the incidence and mortality rates of laryngeal cancer were expected to rise to 1.54/100,000 and 0.91/100,000, respectively, in the Chinese population by 2010 [3].

Laryngeal malignancy itself is an intercurrent disease, acute or late treatment-related causes, and psychosocial factors, such as treatment refusal and suicide, are considered to be the major causes of death in patients with laryngeal cancer [4]. Both total and subtotal laryngectomies are the foremost surgical methods for the treatment of laryngeal cancer. Radiotherapy methods remain the most important approaches relating to the treatment of cancer, displaying considerable efficacy on local tumors. Unfortunately, postoperative radiotherapy has been shown to induce negative emotions including anxiety and depression, which in many cases leads to a worsening quality of life [5]. Although surgery with postoperative radiotherapy could potentially prolong the survival of patients with laryngeal cancer, the outcome from a functional preservation perspective remains problematic. Functional preservation issues, such as impairment of voice, affects related problems of vocal communication and health-related quality of life [6,7]. Additionally, a series of adverse reactions, derived from radiological therapeutic approaches, include various serious psychological disorders and negative emotions. And these adverse reactions present challenging situations for both medical researchers and patients [8].

Practical health education is aimed at improving and providing patients with knowledge of diseases. Knowledge of diseases allows for better understanding of medical health care options available. This further allows for the facilitative understanding and particular attention to not only the physical health of the patient but also the mental health of cancer patients. A health education program could be conducted in a variety of ways, through the use of media television, cinema slides, telephone, tutoring, and

workshops, which are all viable approaches for an effective practical program [9,10].

In recent years, health education intervention has been constructed to meet the strong demand of auxiliary treatment in human cancers, such as cervical cancer [11], prostate cancer [12], and breast cancer [13]. Globally, health education programs have been particularly conducive in regards to increasing healthy lifespan, reducing illness burden, slowing down functional diminution and improving the overall quality of life [14]. Although health education intervention can effectively improve physical activity participation and early diagnosis for patients, it is additionally desired for the development of targeted health education for bettering the quality of life [15,16]. In order to explore the effects of the health education intervention on patients with laryngeal cancer after postoperative radiotherapy, this study paid particular attention to both the negative emotions experienced by cancer patients and the quality of life of the patient. Data from these two factors were correlated to the incidence of subsequent complications and rates of relapse.

## 2. Materials and methods

### 2.1. Ethics statement

The study was conducted in accordance with all protocols approved by the Ethics Committee of the Second Affiliated Hospital of Harbin Medical University. Informed consent and required documentation were obtained from each patient and respective guardians prior to the study.

### 2.2. Subjects

A total of 224 laryngeal cancer patients undergoing postoperative radiotherapy at the Second Affiliated Hospital of Harbin Medical University between August 2011 and December 2015 were selected as subjects for the purposes of the study. The inclusion criteria were as follows: diagnosed with laryngeal cancer [17]; receiving surgery for laryngeal cancer for the first time; receiving postoperative radiotherapy for the first time; life quality score (KPS)

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