

# Association of Marijuana Use With Psychosocial and Quality of Life Outcomes Among Patients With Head and Neck Cancer

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## Introduction

Patients with **head and neck cancer** (HNC) face the psychological impact of their diagnosis alongside disease-specific stressors, including its effect on appearance, functioning, and social interactions.

While **cancer-related stress and anxiety** are recognised in patient management, their **treatment remains challenging**. There is a need for effective therapeutic interventions to support the psychosocial well-being and quality of life (QoL) of HNC patients.

With anxiolytic, analgesic, and antiemetic properties, *Cannabis sativa* (marijuana) shows **emergent potential to treat symptoms** at the intersection of oncology and psychiatry. This prospective study assesses the potential QoL benefits of cannabis in patients with HNC.

## Aim of the study

**To examine the differences in QoL and psychosocial outcomes between cannabis users and nonusers with newly diagnosed HNC.**

## Methods and materials

**A prospective cohort study of 148 patients with newly diagnosed HNC** undergoing curative treatment at a single tertiary care cancer centre, which compared QoL measures between cannabis users and non-users at diagnosis.

The study cohort were matched for age, sex, and tumour subsite. Cannabis users self-identified as those administering loose-leaf cannabis at least weekly. The majority of patients were male and had an average age of 62.3 vs 62.2 years (users vs non-users).

## Primary outcomes

The effect of cannabis use on psychosocial and QoL outcomes as measured by:

- The Edmonton Symptom Assessment System (ESAS), which assesses pain, tiredness, drowsiness, nausea, appetite, shortness of breath, depression, anxiety, and general well-being on a 10-point scale
- EuroQOL-5D (EQ5D), which assesses mobility, self-care, usual activities, pain/discomfort, and anxiety/depression on a 3-point scale where 1 indicates no problems, 2 indicates some problems and 3 indicates extreme problems

## Results

**HNC patients using cannabis at diagnosis had improved QoL** in all domains of ESAS (figure 1) compared to non-users, with statistically significant improvements in the following:

- Pain ( $1.85 \pm 2.49$  vs  $2.72 \pm 2.59$ )
- Anxiety ( $0.77 \pm 1.31$  vs  $5.30 \pm 2.06$ )
- Depression ( $0.72 \pm 1.68$  vs  $3.19 \pm 3.05$ )
- General well-being ( $4.05 \pm 2.29$  vs  $2.12 \pm 2.65$ )

Patients using cannabis also had significantly improved EQ5D domain scores in anxiety/depression ( $1.34 \pm 0.53$  vs  $2.08 \pm 0.61$ ) and pain/discomfort ( $1.53 \pm 0.58$  vs  $1.82 \pm 0.66$ ) compared to non-users.

On average, patients in both groups reported no problems in mobility, self-care, and usual activities on EQ5D measures, with no statistically significant difference between groups (figure 2).

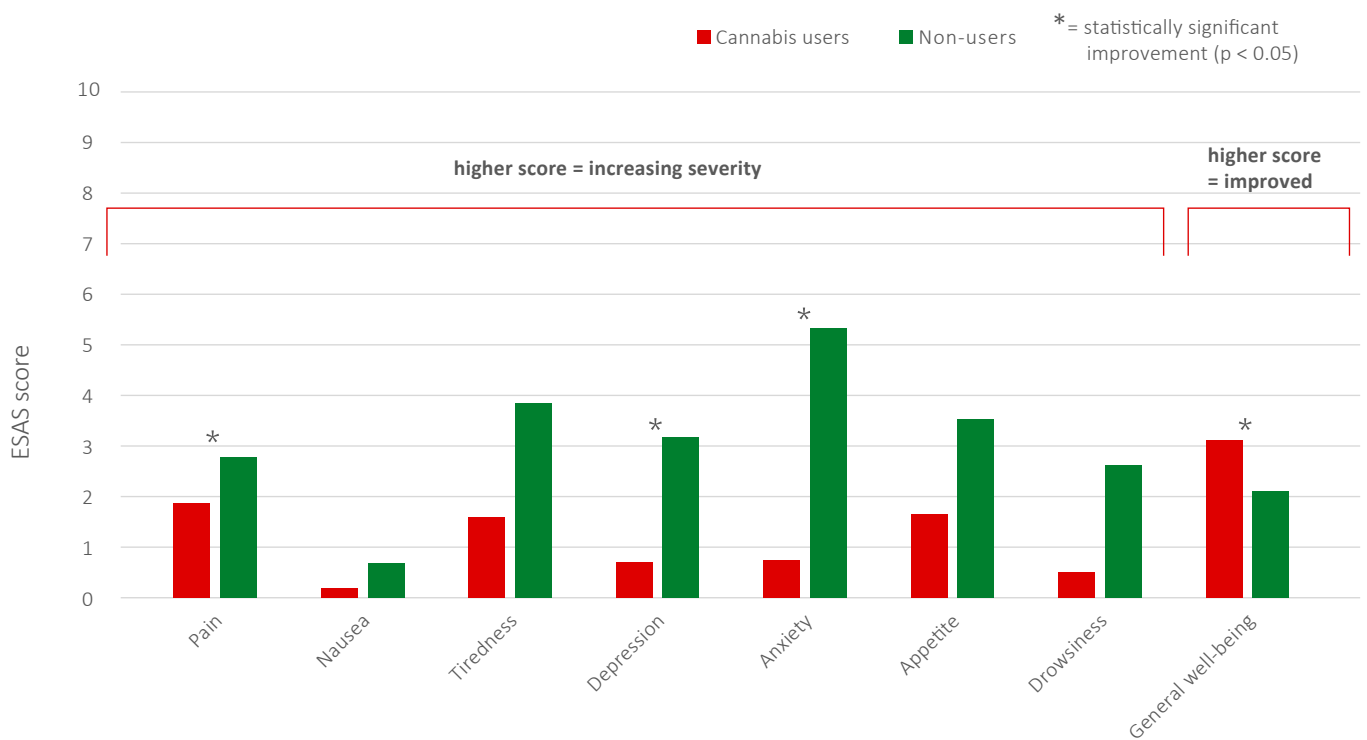


Figure 1: ESAS scores in cannabis users and non-users

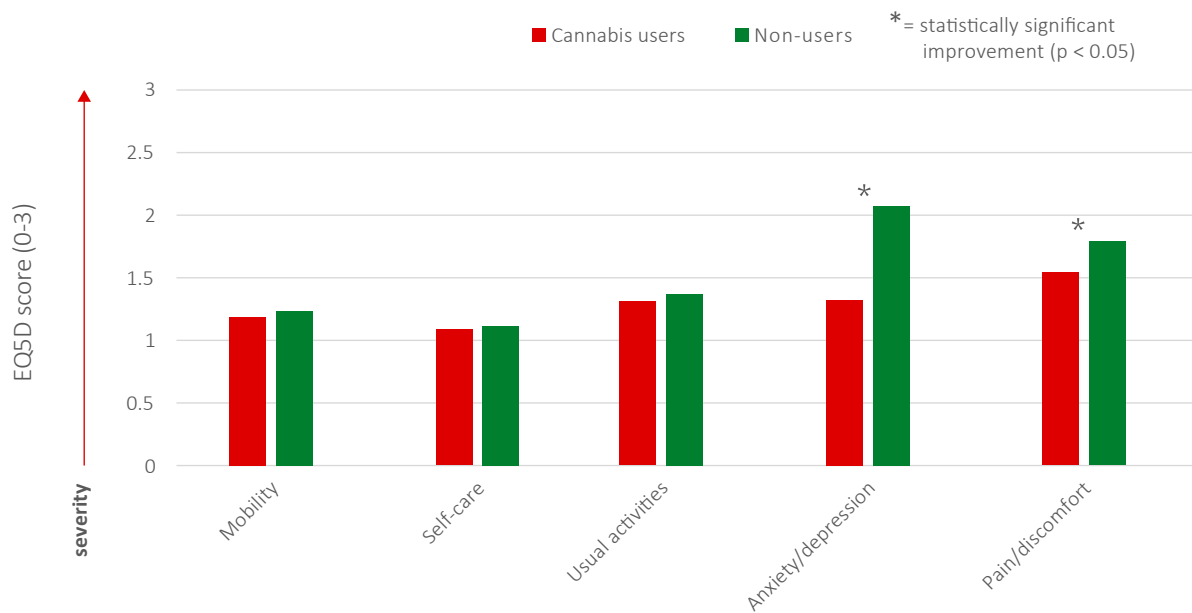


Figure 2: EQ5D scores in cannabis users and non-users

Characteristics between the two groups were statistically equivalent (age, sex, tumour site, p16-positive oropharyngeal disease, T and N stage, treatment modality, income quintile, and employment status). Most patients had T3-T4 disease.

## Discussion

This study suggests that recreational cannabis use is associated with lower anxiety, depression, pain and nausea, and greater general well-being in patients with newly diagnosed HNC.

These findings are in accordance with previous studies suggesting that cannabis is associated with lower depression and anxiety in patients receiving radiotherapy for HNC and that it is an effective adjunct for nausea and vomiting during chemotherapy.

Further studies are warranted to investigate the effects of controlled medicinal cannabis use on QoL outcomes in HNC patients and whether these are maintained throughout treatment.

## References

Zhang, H., Xie, M., Archibald, S.D., Jackson, B.S. and Gupta, M.K., 2018. Association of marijuana use with psychosocial and quality of life outcomes among patients with head and neck cancer. *JAMA Otolaryngology – Head & Neck Surgery*, 144(11), pp.1017-1022.



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