

The Quality-of-Life Impact of Head and Neck Cancer: Preference Values from the Canadian General Public

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ABSTRACT

OBJECTIVES: To elicit preferences for standardized head and neck cancer (HNC) health states describing the health-related quality of life (HRQoL) impact of cancer type or stage, progression, or treatment-related toxicities; and to measure the association between an individual's locus of control (LOC) and mean preference values for HNC health states.

STUDY DESIGN: We elicited preferences from a sample of 106 members of the Canadian general public, using the standard gamble method. Eight health states representing HNC characteristics, and 10 describing treatment-related toxicities, were developed based on literature review, data analysis, and clinician interview. All participants valued these, anchored against full health and dead, and completed the Multidimensional Health LOC scale. A mixed-regression model was used to calculate adjusted preference decrements for all states compared with a reference state (*locoregional preprogression non-laryngeal HNC*).

RESULTS: Mean participant age was 47 years, and 48% were male. All health states were associated with substantially decreased preferences compared with full health. Mean preferences ranged from 0.62 (*locoregional laryngeal HNC*) to 0.33 (hospitalization for severe toxicity). After adjusting for age and sex, mean preference decrements were: -0.28 (postprogression), -0.11 (metastases), and -0.05 (recurrent disease). There was suggestive evidence that LOC was associated with preferences overall ($P = .079$); those with stronger beliefs in *Chance* rated health states lower ($P = .012$).

CONCLUSIONS: Health state preferences elicited here demonstrate that members of the Canadian general public rate HNC to have a large negative impact on HRQoL. The greatest impact was for postprogression and metastatic health states. These values are useful for quantifying the devastating impact of HNC on HRQoL, and for economic modeling.

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Individuals suffering from head and neck cancers (HNC), the vast majority of which are squamous cell cancers, experience potentially devastating effects on their health-related quality-of-life (HRQoL). These HRQoL impacts are due to functional loss and physical disfigurements, from the effects of treatment as well as of HNC progression. HNC patients experience impairments in functioning (such as loss of verbal abilities); nutrition (due to problems with swallowing, teeth, and appetite); sensation (loss of taste and smell); and the development of considerable pain, both chronic and acute.¹⁻³ These impairments can lead to emotional, psychological, and social difficulties,⁴ with the degree of impact varying according to HNC type, stage, progression status, treatment type, and amount of disfigurement.^{4,5}

While numerous studies have evaluated HRQoL in patients with HNC, little is known about how individuals value HNC-specific impairments. Such valuations are useful for characterizing the clinical impact of HNC, for quality-adjusting life expectancy in economic evaluations, and for helping clinicians and decision-makers better understand the trade-offs between clinical benefits of treatment and its negative impacts on function and activities of daily living.⁶

There are 2 methods by which to measure how individuals value functional and HRQoL impacts. The first is indirectly, using standardized measures such as the EuroQOL (EQ)-5D, or the cancer-specific European Organization for Research and Treatment of Cancer (EORTC) surveys.^{6,7} The second is directly, by eliciting preferences for health states that describe functional and HRQoL impacts of a particular condition, using methods such as the standard gamble or time trade-off.⁸ A few investigators have used direct approaches to estimate the HRQoL impact of HNC, and preference values were variable. Many studies did not follow best-practice recommendations,⁸ including smaller sample sizes without standardized health state descriptions.⁹⁻¹² The variability in preference values observed was partly due to different health states being evaluated: current health,^{11,13} outcomes associated with specific treatments,^{10,11} or stage I and II HNC.¹⁴ Some studies focused on preference values elicited from patients,^{11,13} which are helpful for clinical decision-making but not for reimbursement (as most regulatory agencies require values from general public members). To the best of our knowledge, only one other study recruited general public respondents, and that focused on health states related to early-stage HNC.¹⁴ General public preferences for the impact of locoregional, recurrent, or metastatic HNC have not been rigorously described using a standardized approach; nor has the impact of factors such as HNC type, progression status, or the development of treatment-related toxicities on preferences been systematically valuated.

In preferences research, there is uncertainty as to which specific factors predict an individual's preferences for health states. Many investigators have shown that nationality or ethnicity is important,¹⁵ but few other consistent associations have been measured, particularly with respect to psychological or psychosocial factors that influence preferences. Locus of control (LOC) is a psychosocial construct that describes the extent to which an individual believes their health is determined by their actions, by a "powerful external figure," or by "chance."¹⁶ LOC has been shown to be a relevant construct for HNC, as it is associated with patient-reported HRQoL, physical functioning, and treatment compliance;^{17,18} but has not previously been considered in the context of preferences for HNC health states.

The primary objective of the present study was to elicit standard gamble preference values from members of the Canadian general public, for standardized health states describing the HRQoL impact of HNC according to HNC types, stages, progression status, or the development of treatment-related toxicities. As a secondary objective, we measured the association between an individual's LOC and mean preference values for HNC health states.

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