

# CANCER PATIENTS' PERCEPTIONS OF CONTINUED SMOKING AND SMOKING CESSATION

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## BACKGROUND

- Continued smoking after a cancer diagnosis is associated with worse short-term outcomes including reduced treatment efficacy, worsening quality-of-life, and increased treatment-related toxicities such as fatigue.<sup>1-6</sup>
- Risk perception has been deemed to be an important precursor of health behavior change, thus understanding smoking cessation in cancer patients necessitates an evaluation of their perceptions related to smoking risk.<sup>7-8</sup>
- Our overall objective was to assess cancer patients' personal perceptions of the effects of continued smoking on the previously established sequelae of survival, fatigue, and quality-of-life, and determine whether these perceptions are associated with smoking cessation.

### Our specific aims were:

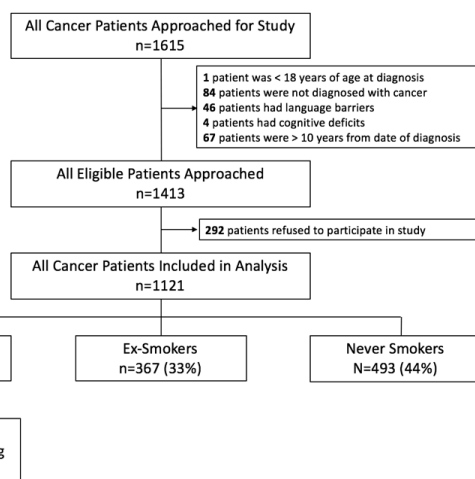
- To evaluate cancer patients' perceptions of the effects of continued smoking after a cancer diagnosis,
- To identify whether negative smoking risk perceptions were associated with smoking cessation after an established diagnosis of cancer, and
- To evaluate factors associated with negative smoking risk perception among smokers.

## PATIENTS & METHODS

- Cancer patients from all disease sites (age ≥18) were recruited from ambulatory oncology clinics at Princess Margaret Cancer Centre, Toronto, Canada, between April 2014 and May 2016.
- Patients completed a one-time self-administered questionnaire. This questionnaire assessed socio-demographic factors, smoking history, and patient perceptions of the effects of continued smoking on an individual cancer patient's quality-of-life, overall 5-year survival, and experiences of cancer related-fatigue, using a simple 5-point Likert scale.
- Those smoking within the year of their diagnosis and at the time of recruitment were classified as *current smokers*, while those who quit within the year of their diagnosis up to recruitment were classified as *current-quitters*. Those having quit at least one year before their diagnosis were classified as *ex-smokers*.

### Statistical Analysis

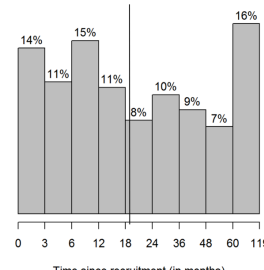
- Statistical comparisons of descriptive statistics were made using Pearson's chi-square test or Kruskal-Wallis tests, where appropriate.
- Univariable logistic regression analysis was applied to assess the association of each perception variable or co-variate with change in smoking status after diagnosis.
- Multivariable regression models evaluated the association between patients' perceptions and smoking cessation and evaluated factors influencing patients' perceptions of smoking.



## RESULTS

Variable	Category	All Patients N = 1121	Current- Smokers	P Value
Age at Diagnosis	Median (range), years	60 (14,91)	60 (26,88)	<0.001
Age at Recruitment	Median (range), years	63 (20,94)	62 (28,90)	<0.001
Gender	Male	55%	65%	<0.001
Ethnicity	Caucasian	76%	89%	<0.001
Language	English-speaking	82%	88%	<0.001
Marital Status	Married or Equivalent	70%	59%	<0.001
Education Level	Post-Secondary Education	63%	47%	<0.001
Household Income	Greater than \$80,000	44%	29%	<0.001
APHE	Yes, in past 1 year	58%	59%	0.17
Site of Disease	Head and Neck	27%	38%	<0.001
	Lung	23%	34%	
	Other(GI, GU, Gyn, Hem)	50%	27%	
Treatment Intent	Palliative	14%	12%	0.44
Perception (Quality-of-Life)	Worsens (Likert 1-2)	83%	68%	<0.001
Perception (Overall Survival)	Worsens (Likert 1-2)	86%	72%	<0.001
Perception (Fatigue)	Worsens (Likert 1-2)	82%	69%	<0.001

- The median time from cancer diagnosis until study recruitment was 18.5 months.
- Factors found to be associated with a greater chance of smoking cessation among those who smoked within a year of diagnosis included: having fewer pack-years smoking history, having recent oncological treatment, and having received an annual periodic health examination with their family physician.



Perception Variable	Perception Comparison (Category vs. Reference)	Univariable Analysis for Quitting Smoking		Multivariable Analysis for Quitting Smoking	
		OR (95% CI)	P value	aOR (95% CI)	P value
<b>Perceived Effect of Continued Smoking</b>					
Quality-of-Life	Worsens vs. No Effect or Improves	2.34 (1.34 to 4.08)	.003	2.68 (1.26 to 5.72)	.011
Overall Survival	Worsens vs. No Effect or Improves	4.23 (2.31 to 7.75)	<.001	5.00 (2.19 to 11.43)	<.001
Fatigue	Worsens vs. No Effect or Improves	3.35 (1.89 to 5.96)	<.001	3.57 (1.69 to 7.54)	<.001
Index Score	3 vs. 0 to 2	2.98 (1.73 to 5.12)	<.001	3.63 (1.76 to 7.49)	<.001

- Among current smokers, perceiving smoking negatively impacted quality-of-life, survival, and fatigue were each strongly associated with cessation.

Variable	Perception Comparison (Category vs. Reference)	Univariable Analysis for Perception of Worse Outcome		Multivariable Analysis for Perception of Worse Outcome	
		OR (95% CI)	P value	aOR (95% CI)	P value
<b>Factors Associated with Perception of Continued Smoking Worsening Quality-of-Life</b>					
Pack Years	Per 1 pack year increase	0.98 (0.98 to 0.99)	<.001	0.98 (0.98 to 0.99)	<.001
<b>Factors Associated with Perception of Continued Smoking Worsening Overall 5-year Survival</b>					
Pack Years	Per 1 pack year increase	0.98 (0.97 to 0.99)	<.001	0.98 (0.98 to 0.99)	<.001
<b>Factors Associated with Perception of Continued Smoking Worsening Fatigue</b>					
APHE	Yes vs No	2.00 (1.35 to 2.94)	<.001	2.00 (1.39 to 2.94)	<.001
Pack Years	Per 1 pack year increase	0.99 (0.98 to 0.99)	<.001	0.99 (0.98 to 0.99)	<.001

- Among all patients, those with greater smoking history were less likely to believe that smoking was harmful on quality-of-life, survival, and fatigue.
- Patients who did not receive a recent primary care annual periodic health examination were less likely to believe smoking was harmful on fatigue.

## CONCLUSIONS

- Most patients perceived continued smoking after a diagnosis of cancer to be harmful on quality-of-life, survival, and fatigue, with those smoking within a year of their diagnosis being less aware of these adverse outcomes.
- Negative perceptions of smoking on quality-of-life, survival, and fatigue were each associated with greater smoking cessation after a cancer diagnosis.
- Greater smoking history is the only factor significantly associated with more negative (or less accurate) risk perceptions regarding the harms of smoking on quality-of-life, survival, and fatigue.
- Screening of cancer patients' perceptions of the harms of smoking informs the clinician of those at greatest risk of smoking continuation, allowing for earlier and targeted educational interventions to combat smoking continuation.

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