

# Cancer Patients' Perceptions of Continued Smoking and Smoking Cessation

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# Smoking After Cancer Diagnosis Remains A Problem

- Smoking continuation rates of 14-58% after cancer diagnosis
- Continuing to smoke after a cancer diagnosis associated with
  - Increased risk of...
    - Risk of cancer recurrence
    - Development of a new primary malignancy
    - Development of other smoking-related illnesses
    - Treatment related toxicity
    - Fatigue
    - Mortality
  - Decreased...
    - Efficacy of cancer treatments
    - Quality of life



# Factors Associated With Smoking Cessation Are Well Studied But Smoking Risk Perception Is Not

- Factors affecting smoking cessation
  - Marital status (Berg, 2013)
  - Income (Berg, 2013)
  - Cancer type (Berg, 2013)
  - Education level (Ostroff, 1995)
  - Second hand smoking (Eng et al., PMCC 2014)
- Factors affecting smoking risk perception
  - Age (Niu et al., PMCC 2015)
  - Socioeconomic status (Shiffmann, 2004)



# Research Question

- What is the association between smoking cessation and cancer patients' perceptions of the effects of continued smoking on quality-of-life, survival, and fatigue?



# Design and Population

- Cross sectional study design – one time questionnaire
- Princess Margaret Cancer Centre (April 2014 – January 2016)
- Inclusion criteria
  - Histological diagnosis of cancer within the past 10 years
  - Age greater than 18 years
  - Ability to communicate in English
  - No cognitive impairments
- Current smokers were defined as those who smoked in the year leading up to their cancer diagnosis



# Questionnaire Methodology

- One time, 10-minute questionnaire administered in cancer follow-up clinics
  - Questions pertaining to
    - Sociodemographic factors
    - Smoking history
    - Current smoking habits and exposures
    - Smoking risk perception relating to QoL, 5-yr survival, fatigue
- Review of patient charts for clinico-pathological data
- Smoking risk perception assessed on 5-Point Likert Scale
  - Results dichotomized

What effect do you think the following has (or can have)...	on <u>AN INDIVIDUAL CANCER PATIENT'S:</u>	5-Point Likert Scale				
		Make Much Worse	No Effect		Make Much Better	
<u>Continued smoking</u> after cancer diagnosis	Quality of Life after cancer diagnosis?	1	2	3	4	5
	Chances of cancer survival at 5 years?	1	2	3	4	5
	Experiences of cancer-related fatigue?	1	2	3	4	5

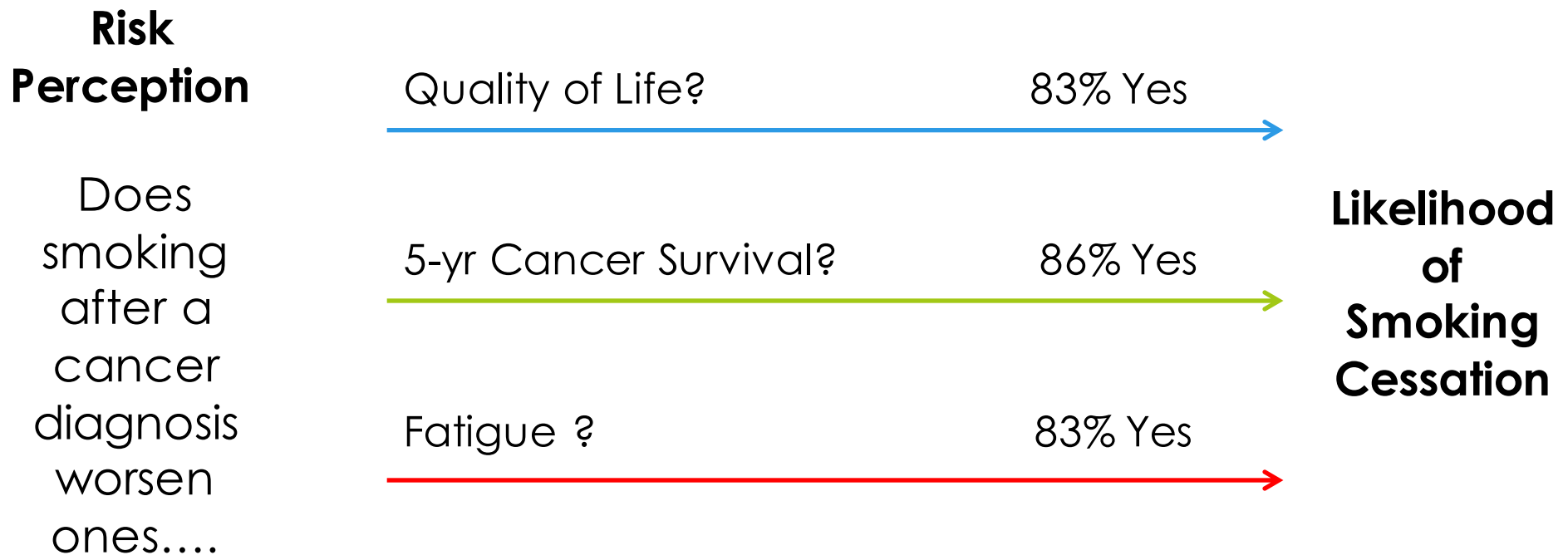
# Selected Demographic and Clinical Data

<b>Sociodemographic Variable</b>	<b>Sample (n=230)</b>
<b>Mean Age (SD)</b>	61 (11) years
<b>% Male</b>	65%
<b>% Caucasian</b>	88%
<b>% Married</b>	58%
<b>% Post-Secondary</b>	46%
<b>% Household Income &gt;80K/year</b>	29%

<b>Clinico-pathologic Variable</b>	<b>Sample (n=230)</b>
<b>Mean Time Since Dx</b>	31 months
<b>Previous Cancer Dx</b>	13%
<b>Mean Pack Years (SD)</b>	46 (30) PY
<b>Disease Site</b>	
Head and Neck	40%
Lung	37%
Other	23%



# How Does Risk Perception Affect Smoking Cessation?





# Univariable Analyses

## Risk Perception of Continuing to Smoke

Variable	p-value	OR (95% CI)
<b>Perceived effect on Quality of Life</b>	<b>&lt; 0.001</b>	
Makes worse		<b>3.04 (1.6,5.6)</b>
No diff/better		Reference
<b>Perceived effect on Survival</b>	<b>&lt; 0.001</b>	
Makes worse		<b>4.92 (2.5,9.6)</b>
No diff/better		Reference
<b>Perceived effect on Fatigue</b>	<b>&lt; 0.001</b>	
Makes worse		<b>4.50 (2.4,8.6)</b>
No diff/better		Reference

**Patients who felt that smoking adversely affected QoL were 3 times more likely to quit**



# Univariable Analyses

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Makes worse		<b>4.92 (2.5,9.6)</b>
No diff/better		Reference
<b>Perceived effect on Fatigue</b>	<b>&lt; 0.001</b>	
Makes worse		<b>4.50 (2.4,8.6)</b>
No diff/better		Reference

**Patients who felt that smoking adversely affected survival were 5 times more likely to quit**



# Univariable Analyses

## Risk Perception of Continuing to Smoke

Variable	p-value	OR (95% CI)
<b>Perceived effect on Quality of Life</b>	<b>&lt; 0.001</b>	
Makes worse		<b>3.04 (1.6,5.6)</b>
No diff/better		Reference
<b>Perceived effect on Survival</b>	<b>&lt; 0.001</b>	
Makes worse		<b>4.92 (2.5,9.6)</b>
No diff/better		Reference
<b>Perceived effect on Fatigue</b>	<b>&lt; 0.001</b>	
Makes worse		<b>4.50 (2.4,8.6)</b>
No diff/better		Reference

**Patients who felt that smoking adversely affected fatigue were 4.5 times more likely to quit**



# Univariable Analyses

## Risk Perception of Continuing to Smoke

Variable	p-value	OR (95% CI)
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Makes worse		<b>3.04 (1.6,5.6)</b>
No diff/better		Reference
<b>Perceived effect on Survival</b>	<b>&lt; 0.001</b>	
Makes worse		<b>4.92 (2.5,9.6)</b>
No diff/better		Reference
<b>Perceived effect on Fatigue</b>	<b>&lt; 0.001</b>	
Makes worse		<b>4.50 (2.4,8.6)</b>
No diff/better		Reference

## Additional Factors Associated with Quitting

Covariate	p-value	OR (95% CI)
<b>Marital Status</b>	<b>0.027</b>	
Married		<b>1.82 (1.1,3.1)</b>
Single		Reference
<b>Education</b>	<b>0.027</b>	
Post-Secondary		<b>1.92 (1.1,3.4)</b>
High School or less		Reference
<b>Recent Treatment</b>	<b>0.024</b>	
Yes		<b>1.87 (1.1,3.2)</b>
No		Reference
<b>Pack Years</b>	<b>0.029</b>	<b>1.01 (1.0,1.0)</b>
<b>Chemotherapy</b>	<b>0.009</b>	
No		<b>2.04 (1.2,3.3)</b>
Yes		Reference
<b>Surgery</b>	0.056	
No		<b>1.67 (1.0,2.5)</b>
Yes		Reference



# Multivariable (Logistic Regression) Analyses

Covariate	Continued to Smoke (n=102)	Quit after Diagnosis (n=128)	p-value	aOR (95% CI)
<b>Perceived effect on QoL (%)</b>			<b>&lt; 0.001</b>	
Makes worse	56%	79%		<b>3.00 (1.5,6.0)</b>
No diff/better	44%	21%		Reference
<b>Perceived effect on survival (%)</b>			<b>&lt; 0.001</b>	
Makes worse	57%	87%		<b>5.75 (2.6,12.6)</b>
No diff/better	43%	13%		Reference
<b>Perceived effect on fatigue (%)</b>			<b>&lt; 0.001</b>	
Makes worse	54%	84%		<b>4.81 (2.3,10.2)</b>
No diff/better	46%	16%		Reference

**After controlling for confounders, negative perceptions of smoking on quality of life, survival, and fatigue were each associated with greater quitting rates**

# What Factors Are Associated With Smoking Risk Perception?

## Factors Associated with Worse Perception of QoL

Factor	p-value	aOR (95% CI)
Married vs. Single	0.008	1.63 (1.1,2.4)
Non-tobacco related cancer vs. Tobacco related cancer	0.020	1.54 (1.1,2.2)
Fewer Pack Years (per 1 PY increase)	< 0.001	0.98 (0.98,0.99)

## Factors Associated with Worse Perception of 5-Yr Survival

Factor	p-value	aOR (95% CI)
Income > 80K vs. <=80K	0.005	2.56 (1.3,5.0)
Fewer Pack Years (per 1 PY increase)	< 0.001	0.98 (0.97,0.99)

## Factors Associated with Worse Perception of Fatigue

Factor	p-value	aOR (95% CI)
Fewer Pack Years (per 1 PY increase)	< 0.001	0.98 (0.98,0.99)

# Conclusion

- Most patients perceived continued smoking after a diagnosis of cancer to be harmful on quality of life, survival, and fatigue
- Negative patient perceptions of smoking on quality of life, survival, and fatigue were each associated with greater smoking cessation after a diagnosis of cancer
- Those with a greater smoking history were less likely to perceive smoking to negatively impact on quality of life, survival, and fatigue
- Targeted patient reported surveys of patient perception can help drive quality improvement initiatives in cancer care

THANK YOU!

ANY QUESTIONS?



The Princess Margaret  
Cancer Centre

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