

Differences by cancer type

Andrea Dunlavy, BS,¹ Paul Han, MD, MA, MPH,¹ Richard Moser, PhD,¹ & William Klein, PhD²

¹ Division of Cancer Control and Population Sciences, National Cancer Institute; ² Department of Psychology, University of Pittsburgh

Background

Cancer worry, an emotional reaction to the threat of cancer (Hay et al., 2005), is an important behavioral determinant that has received a great deal of attention in health behavior theory and research. However, relatively little research has examined the potential influence of sociodemographic factors on cancer worry, and how the influence of these factors might differ based on the type of cancer being considered. The few studies that have analyzed the association between sociodemographic factors and cancer worry have largely focused on breast cancer, and the data have been mixed. Older age has been shown to be associated with lower breast cancer worry (Hay et al., 2005), while race and ethnicity have shown variable associations with breast cancer worry in different studies (Consedine et al., 2004; Miller and Champion, 1997; Hughes et al., 1996). Gender differences in levels of cancer worry have not been found in at least two studies of colon cancer (Wardle et al., Zajac et al., 2006).

Understanding how sociodemographic factors influence worry about different types of cancer has important implications for determining how cancer worry may impact screening behaviors and contribute to health disparities.

The aim of this study was to examine the association between sociodemographic factors and worry specific to three different cancers—colon, skin, and lung—to determine if the influence of these factors differed by type of cancer.

Methods

Participants (N=5586) in the 2005 Health Information National Trends Survey (HINTS) were randomly assigned to answer the cancer worry survey item for one of three cancers: colon, skin, or lung. Participants were excluded if they had a personal history of these cancers.

Cancer worry was assessed by respondents' level of agreement with a single item, *"How often do you worry about getting (colon, skin, lung) cancer?"*

Participants rated their level of agreement with this question using a four point scale, ranging from *"rarely or never"* to *"all the time"*.

Descriptive and multivariate logistic regression analyses were conducted using SUDAAN®.

Results

Demographic Characteristics

	N ¹	(% ²)		N	(%)
<u>Age</u>			<u>Gender</u>		
18-29	670	(23)	Female	3657	(52)
30-49	1857	(38)	Male	1929	(48)
50-69	1929	(28)			
70-96	1112	(11)			
<u>Education</u>			<u>Ethnicity</u>		
<HS	687	(23)	Non-Hispanic	4874	(87)
HS graduate	1643	(34)	Hispanic	496	(13)
Some college	1349	(28)			
College graduate	1696	(23)			
<u>Race</u>			<u>Cancer History</u>		
White	4378	(80)	No	4657	(11)
Black	462	(11)	Yes	873	(87)
Other	339	(7)	Yes, but misdiagnosed	50	(0.7)

¹ sample size; total N=5586; ² weighted percentage

¹ sample size; total N=5586; ² weighted percentages

Multivariate Analyses

Cancer worry by cancer type*						
	Colon cancer N=1788			Skin cancer N=1584		
	OR	95% CI	PV	OR	95% CI	PV
Age						
18-29	1.00		.05	1.00		<.001
30-49	2.04	1.19-3.51		1.44	0.85-2.45	
50-69	2.01	1.14-3.56		1.05	0.69-1.60	
70-96	2.07	1.13-3.79		0.38	0.23-0.63	
Education						
< HS	1.00		.02	1.00		.17
HS graduate	0.53	0.29-0.95		1.27	0.64-2.55	
Some college	0.42	0.23-0.76		1.67	0.77-3.64	
College graduate	0.40	0.21-0.75		1.76	0.92-3.39	
Race						
White	1.00		.08	1.00		.009
Black	1.95	1.00-3.80		0.27	0.12-0.64	
Other	1.50	0.79-2.84		0.87	0.44-1.73	
Gender						
Female	1.00		.17	1.00		<.001
Male	1.25	0.90-1.72		0.59	0.43-0.79	
Ethnicity						
Non-Hispanic	1.00		<.001	1.00		.80
Hispanic	2.26	1.40-3.65		1.09	0.55-2.17	
Cancer History						
No	1.00		.74	1.00		.25
Yes	0.93	0.61-1.40		1.27	0.87-1.84	
Yes, but misdiagnosed	0.48	0.07-3.47		0.56	0.20-1.60	

*unequal N by cancer type due to missing data

Main Findings

Age: Older age was associated with lower levels of skin and lung cancer worry, but higher levels of colon cancer worry

Education: Higher education level was associated with lower levels of colon and lung cancer worry

Race: Non-white race was associated with lower levels of skin cancer worry

Gender: Male gender was associated with lower levels of skin cancer worry

Ethnicity: Hispanic ethnicity was associated with higher colon cancer worry

Cancer History: False positive diagnosis for lung cancer was associated with lower levels of lung cancer worry

Conclusions

These findings show that cancer worry differs according to several sociodemographic factors, and the strength of these associations varies by type of cancer. Future research in this area is warranted to elucidate the mechanisms that give rise to these relationships.

Potential limitations of this study include:

- Cross sectional data— limits causal inferences
- Potentially important variables that could influence cancer worry not assessed (e.g., lifestyle factors, family history of cancer)
- Cancer worry measured using a single item of unknown validity

References

- Consedine NS, Magai C, Neugut AI. The contribution of emotional characteristics to breast cancer screening among women from six ethnic groups. *Preventive Medicine* 2004;38(1):64-77.
- Hay JL, Buckley TR, Ostroff JS. The role of cancer worry in cancer screening: A theoretical and empirical review of the literature. *Psycho-Oncology* 2005;14(7):517-534.
- Honda K, Neugut AI. Associations between perceived cancer risk and established risk factors in a national community sample. *Cancer Detection and Prevention* 2004;28(1):1-7.
- Hughes C, Lerman C, Lustbader E. Ethnic differences in risk perception among women at increased risk for breast cancer. *Breast Cancer Research and Treatment* 1996;40(1):25-35.
- Miller AM, Champion VL. Attitudes about breast cancer and mammography: racial, income, and educational differences. *Women & Health* 1997;26(1):41-63.
- Wardle J, Sutton S, Williamson S, Taylor T, McCaffery K, Cuzick J, Hart A, Atkin W. Psychosocial influences on older adults' interest in participating in bowel cancer screening. *Preventive Medicine* 2000;31(4):323-34.
- Zajac LE, Klein WMP, McCaul KD. Absolute and comparative risk perceptions as predictors of cancer worry: Moderating effects of gender and psychological distress. *Journal of Health Communication* 2006;11:37-49.