

Associations Between Religious Fatalism and Modifiable Behavioral Cancer Risk Factors in Rural Cancer Survivors

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Background

Cancer mortality and morbidity rates are much higher in rural versus urban cancer survivors.^{1,2}

Modifiable behavioral risk factors, such as physical inactivity, poor diet and tobacco use, contribute to cancer mortality, but most cancer survivors do not get adequate sleep, consume a healthful diet or engage in exercise.^{3,4}

Previous studies show that 34%- 57.8% of cancer survivors reported being physically inactive; 90% of cancer survivors report poor dietary habits; and 58% reported excessive alcohol use.^{5,6,7}

Religious fatalism, defined as the belief that health outcomes are determined by God, may influence cancer survivors' decision to engage in healthy lifestyle behaviors. Fatalism has a salutary effect to some health behaviors and a deterrent effect on other modifiable behavioral cancer risk factors.⁸

The impact of fatalism on health behaviors is well studied, however, no studies to our knowledge have explored this impact among rural cancer survivors.

Objectives and Hypotheses

The purposes of this study were:

- To explore associations between fatalistic beliefs and modifiable behavioral cancer risk factors among rural cancer survivors

Hypothesis 1: High fatalistic beliefs will be associated with low modifiable behavioral risk factors such as physical exercise, healthy diet, alcohol consumption, sleep quality, and body fat.

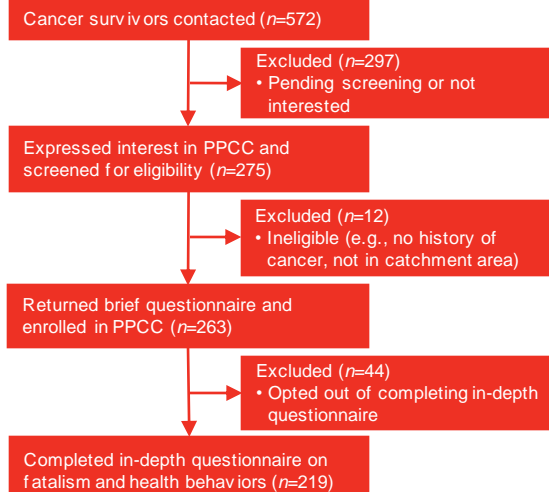
- To determine whether the association between fatalistic beliefs and health behaviors is moderated by gender and education.

Hypothesis 2: In women, as fatalism increases, engagement in health behaviors will decrease.

Hypothesis 3: In participants who have a college degree, as fatalism increases, engagement in health behaviors will remain unchanged or increase.

Methods

The Partnering to Prevent and Control Cancer (PPCC) study took place from 2018-2019. Cancer survivors residing in central Pennsylvania were mailed a brief questionnaire. Those who responded to the brief questionnaire were mailed an in-depth questionnaire to return by mail.



Construct	Measure
Religious Fatalism (score, scale: 1-5)	17-item Religious Health Fatalism Questionnaire (RHFQ)
Physical Activity (min/week, scale: 0-24)	4-item Godin Weekly Leisure-time Activity (WLA)
Fruit and Vegetable Intake (servings/day, scale 0-35)	7-item NCI Fruit and Vegetable Screener
Sleep Quality (score, scale: 0-21)	19-item Pittsburgh Sleep Quality Index (PSQI)
Fat Intake (% kcal/day, scale 20-35%)	16-item NCI Fat Screener
Alcohol Consumption (drinks/week, scale)	3-item Alcohol Quantity and Frequency Questionnaire

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Associations between Religious Fatalism and Health Behaviors

Figure 1: Global Sleep Quality Score vs Helpless Inevitability

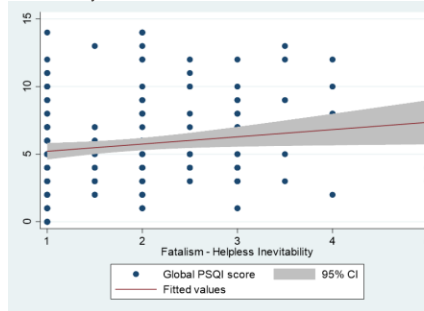


Figure 2: Weekly leisure time activity vs Divine Provision



Figure 3: Weekly leisure time activity vs Helpless Inevitability

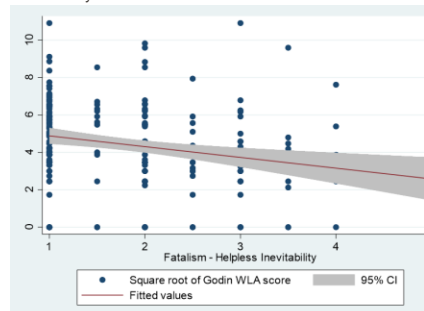


Figure 4: Weekly leisure time activity vs Overall Fatalism



Note: All linear regression analyses adjusted for gender, age, body mass index (BMI=kg/m²), and education.

Conclusion

After transforming data using square root transformation, we found that sleep quality and helpless inevitability had a positive relationship. As Religious fatalism increased, sleep quality increased. This reinforces previous findings that fatalistic beliefs may have a salutary effect on cancer survivors. Religious fatalism had an opposite effect on weekly leisure time physical activity. To better understand and design culturally appropriate lifestyle interventions, research exploring the impact of religious norms and expectations on the decision to engage in prevention-seeking behaviors may play a key role.

Participant Characteristics

Characteristic	N (Percent)
Gender	
Female	133 (60.7)
Male	86 (39.3)
Age, mean years (SD)	64.5 (13.9)
BMI mean kg/m ² (SD)	29.6 (7.0)
Education	
< Bachelor degree	108 (49.5)
Bachelor degree	56 (25.7)
Annual household income	
< \$40,000	40 (19.4)
\$40,000-79,999	66 (32.0)
Cancer type	
Breast	50 (22.8)
Colorectal	20 (9.1)
Gynecological	37 (16.9)
Prostate	45 (20.5)
Other	67 (30.6)
Religious fatalism, mean score (SD)	
Fatalism – Divine Provision	3 (1)
Fatalism – Destined Plan	2.2 (1)
Fatalism – Helpless Inevitability	1.8 (0.9)
Fatalism – Overall	2.4 (0.9)
Godin WLA, mean score (SD)	24 (21.7)
Fruit and vegetable intake, mean servings/day (SD)	2.8 (2)
Fat intake, mean % kcal/day (SD)	30.5 (1.8)
Alcohol consumption, mean drinks/week (SD)	5 (8.7)
Sleep quality, mean score (SD)	5.6 (3.3)

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