RESEARCH BRIEF

Perceived Body Image and Perceived Control Are Associated With Physical and Mental Health in Individuals With Cancer

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OBJECTIVES: To examine the effects of perceived body image and perceived control over life on physical and mental health of young and midlife adults with cancer.

SAMPLE & SETTING: A total of 49 young and midlife adults with cancer were recruited through a state cancer registry.

METHODS & VARIABLES: This study was a secondary analysis of data from a small study of young and midlife couples surviving cancer. Physical and mental health were measured with the SF-36®. Negative effect of cancer on body image and perceived control were measured with single items from the Life Impact Checklist.

RESULTS: Most individuals reported a very negative to neutral effect of cancer on body image and a very negative to somewhat positive effect on perceived control. There were no significant differences by age or sex. Negative effect on body image was significantly associated with worse physical health. Negative effect on body image and perceived control over life were significantly associated with worse mental health.

IMPLICATIONS FOR NURSING: Nurses are uniquely placed to provide holistic care to individuals with cancer and facilitate support for those experiencing negative body image and perceived lack of control years after diagnosis.

KEYWORDS survivorship; perceived control; body image; physical health; mental health
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Because of improved prevention and treatment, the number of individuals who have survived cancer continues to increase, with almost 17 million survivors in the United States, about 25% of whom are aged 60 years or younger (American Cancer Society, 2019). Surviving cancer generates unique psychological challenges that have long-term implications for physical and mental health (Shapiro, 2018). Several frameworks of health include concepts of individuals' perceived severity of impact and perceived control and explore their importance for health and health behavior outcomes (Roden, 2004). This exploratory study focuses on the roles of perceived body image and perceived control on the health of young and midlife adults surviving cancer as two understudied but modifiable factors in cancer survivorship (Bellizzi et al., 2012; Rhoten, 2017; Shapiro, 2018; Shukla & Rishi, 2018).

Cancer and its treatments can influence an individual's view of their body, with poor body image associated with worse physical and mental health and reduced quality of life (Bahrami et al., 2017; Dahl et al., 2010). Negative body image has been found to be more prevalent in younger women than older women and affects treatment choices and sexual health (Paterson et al., 2016). Men with prostate cancer who had higher levels of body image distress were found to have a worse quality of life (Harrington, 2011). Most research has focused on mid- and late-life women. The current study is novel in focusing on young and midlife adult women and men across cancer types.

The health of individuals surviving cancer may be influenced by their perceived control over their own lives (Mohammadipour & Pidad, 2021; Roden, 2004). Research has found that individuals with cancer who perceive higher levels of control tend to report a better quality of life and lower depression and anxiety,

as well as the belief that they have more control over their illness (Shukla & Rishi, 2018). Despite evidence that body image and perceived control are associated with physical and mental health, few studies have investigated these elements as risk factors for mental and physical health beyond the first year of cancer. In addition, most of the literature focuses on midlife and older adults, with little research focused on young adults by design (Bellizzi et al., 2012). Because of the unique developmental needs of young adults and the nature of the cancer experience, it is important to investigate psychosocial concerns that young and midlife individuals may face to better inform supportive care efforts.

Most research in this area has focused on breast cancer and involved urban or clinic-based samples. Little is known about the roles of body image and perceived control across cancer type, sex, and rural and urban populations. The objective of this secondary analysis was to explore the relationship between body image views and perceived control and their effects on physical and mental health in male and female young and midlife adults one to three years after a cancer diagnosis.

Methods

Sample and Setting

Data for this secondary analysis were drawn from a pilot study of the effects of cancer on couples beyond treatment (Lyons et al., 2022). Participants were eligible who (a) had a primary diagnosis of cancer in the preceding 18–36 months, (b) were aged 21–56 years at the time of diagnosis, (c) were able to read English, (d) had access to a telephone, and (e) lived in the state of Oregon. Participants were recruited from the Oregon State Cancer Registry. A sample of registrants who met the study criteria was selected to receive letters describing the study along with information on how to contact the study team, who then screened for eligibility and interest. Forty-nine participants completed mailed surveys and signed consent forms, and all were included in the current analysis. Lyons et al. (2022) further describes the recruitment details. This study was approved by the Oregon Health and Science University Institutional Review Board (e#15498).

Instruments

Physical and mental health were assessed using the two subscales of the psychometrically sound SF-36® (McHorney et al., 1994). Cronbach's alpha for physical health was 0.96 and 0.94 for mental health. The negative effects of cancer on perceived control and perceived body image were measured with single items from the Life Impact Checklist (Bellizzi et al., 2012), with possible scores ranging from 1 (very negative impact) to 5 (very positive impact). The items assessing perceived control and perceived body image had the following wording: "Please rate the overall impact of cancer on your control of your life" and "Please rate the overall impact of cancer on your feelings about the appearance of your body."

Analysis

Descriptive statistics and t tests were used to characterize the sample (IBM SPSS Statistics, version 27.0).

TABLE 1. Comparison of Perceived Body Image, Perceived Control, and Physical and Mental Health by Sex and Age (N = 49)

	Female Participants (N = 34)		Male Participants (N = 15)			Young Adults[a] (N = 18)		Midlife Adults[b] (N = 31)		
Variable	$\bar{X}$	SD	$\bar{X}$	SD	t	$\bar{X}$	SD	$\bar{X}$	SD	t
Perceived body image	2.09	0.9	2.21	0.7	0.47	2.06	0.94	2.17	0.79	–0.44
Perceived control	2.47	1.16	2.57	1.45	0.25	2.39	1.2	2.57	1.28	–0.48
Physical health	48.51	11.89	48.84	12.02	0.09	52.6	9.55	46.36	12.49	1.78
Mental health	43.74	12.02	46.19	11.02	0.69	45.89	7.88	43.75	13.38	0.6

[a] Aged younger than 40 years
[b] Aged 40 years or older
Note. Lower scores indicate more negative impact on perceived body image and perceived control over life and worse physical and mental health. Physical and mental scores are transformed on a 0–100 scale. U.S. normed averages are a score of 50, with a standard deviation of 10.

To determine the influence of perceived body image and perceived control on physical and mental health, two linear regressions were conducted to examine each single item as a predictor of each health variable, controlling for age and sex.

Results

The mean age of participants was 43.5 years (SD = 9; range = 27–58), with the majority being female (n = 34), non-Hispanic White (n = 43), and an average of 2.2 (SD = 0.6) years postdiagnosis. Most participants had completed a college degree (n = 36), and fewer than half resided in a rural location (n = 22). The most common cancer diagnoses were breast (n = 10), cervical/ovarian (n = 5), colon (n = 5), renal (n = 5), brain (n = 4), and leukemia (n = 4). There were no significant variations in impact on perceived body image and perceived control or in self-reported physical or mental health by sex or age (see Table 1). Means and SDs suggest that most young and midlife female and male participants experienced a very negative to neutral impact of cancer on perceived body image and a very negative to somewhat positive impact on perceived control over life. Young and midlife participants reported levels of mental health lower than the U.S. population norm of 50.

Associations With Self-Reported Physical and Mental Health

The impact of cancer on perceived body image was significantly associated with self-reported physical health; however, no significant association was found between perceived control and physical health. A more negative reported impact on perceived body image was significantly associated with worse self-reported physical health (see Table 2). The model accounted for 21% of the variance. Impact of cancer on perceived body image and on perceived control over one's life were significantly associated with self-reported mental health. More negative reported impacts on perceived body image and perceived control were significantly associated with worse self-reported mental health. The model accounted for 27% of the variance.

Discussion

Several findings are noteworthy. First, most participants reported a negative impact of cancer on their perceived body image and perceived control. Second, the authors found no significant variations across age or sex, in contrast to previous research that has found younger women with cancer more likely to report negative body image than older women (Paterson et al., 2016). Previous research has primarily focused on mid- to late-life adults with breast cancer. This study's findings suggest that assumptions should not be made about the impact of cancer on perceived body image and perceived control by age or sex. Third, the authors found perceived body image to be significantly associated with physical and mental health one to three years postdiagnosis. Perceived control was significantly associated with mental health.

Little research focuses on the impact of cancer beyond treatment, particularly across a range of cancers and on young adults. Although this study focused on individuals who were one to three years postdiagnosis (with long-term survival often considered five or more years), the authors believe this time frame captures a vulnerable stage in the survival trajectory, where treatment is often complete and ongoing care and support from healthcare settings and family dwindle, yet

KNOWLEDGE TRANSLATION

- Nurses can encourage adults to talk about their body image experiences and perceived control.
- Referral and assessment by behavioral care specialists may be necessary to lessen the long-term impact of cancer.
- More research is needed to design evidence-based supportive resources to reduce body image–related stress in individuals surviving cancer.

TABLE 2. Linear Regression Predicting Physical Health and Mental Health (N = 49)

	Physical Health		Mental Health	
Variables	B	SE	B	SE
Age	–0.42	0.17*	–0.03	0.16
Sex	–1.33	3.24	–3.26	3.16
Perceived body image	5.89	1.83**	6.61	1.78***
Perceived control	–0.13	1.19	2.54	1.16*

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
SE—standard error
Note. Lower scores indicate a more negative impact on perceived body image and perceived control over life. Sex was coded 0 for male individuals and 1 for female individuals.
Note. For physical health, adjusted $R^2 = 0.21$; for mental health, adjusted $R^2 = 0.27$.

psychosocial impacts and unknowns linger (Gorman et al., 2022; Lyons et al., 2022). Identifying individuals surviving cancer who may continue to struggle with these challenges is warranted. Individuals surviving cancer who perceive a lack of control over life may be particularly vulnerable because of the potential for disengaging from health behaviors that are known to be helpful (Mohammadipour & Pidad, 2021; Park & Gaffey, 2007; Roden, 2004).

Limitations

This exploratory, secondary data study was small and cross-sectional, lacked diversity, and did not include key variables regarding treatment and cancer stage. However, the authors believe that it provides important knowledge and contributes to an understanding of the ongoing challenges that young and midlife adult patients with cancer experience. This study purposefully recruited young and midlife adults who were diagnosed with a range of cancer types from urban and rural locations across the state. However, these findings need replication in larger, more diverse samples where additional factors may be examined.

Implications for Nursing

Findings suggest that nurses should be cognizant of the negative impacts of poor perceived body image and perceived control on physical and mental health and that these challenges may exist across age and sex. Routinely asking about these issues can be part of a holistic ongoing care plan. When necessary, collaboration and referral to behavioral care specialists can also help support individuals beyond cancer treatment. More research is needed on optimal strategies nurses can use during and after treatment to target body image disturbance and poor perceived control across different cancer types.

Conclusion

An individual diagnosed with cancer faces many challenges throughout the cancer trajectory. This study highlights two important factors that are not always apparent but can have a long-lasting impact on the return to normalcy, healthy relationships, and engagement in future health behaviors that may reduce recurrence. Nurses are uniquely positioned to validate and provide support regarding these challenges across the continuum of care.

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Lyons completed the data collection and provided statistical support. Both authors contributed to the conceptualization and design, provided the analysis, and contributed to the manuscript preparation.

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