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Health Promotion Among Older Cancer Survivors With Prior Disabling Conditions

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Abstract

Older cancer survivors, who often cope with multiple disabling conditions, can find health promotion challenging. This study's purpose was to explore predictors of health promotion for older cancer survivors with a disabling condition that existed prior to their cancer diagnosis. The 92 cancer survivors were predominantly women with preexisting neuromuscular impairments and an average age of 69 years. Half were breast cancer survivors, and 58% were 6 or more years since their cancer diagnosis. In hierarchical regression analyses, self-efficacy for health promotion and social support were the strongest predictors of the total HPLPII and its subscales. The findings suggest that nursing interventions to assist older cancer survivors with multiple chronic conditions in building their social support and perceived self-efficacy may help them lead more healthy lives.

Keywords

health promotion; older cancer survivors; disability

The likelihood of cancer diagnosis increases with age. In 2011, the National Cancer Institute and the Centers for Disease Control and Prevention reported that 7 million of the 11.7 million Americans living with cancer in 2007 were 65 years or older, a number that continues to grow (NCINIH, 2011). Other chronic diseases and disabling conditions increase with age as well. Consequently, older cancer survivors must often cope with multiple chronic disabling conditions.

Health promotion is critical to longevity and quality of life for both the elderly (Byam-Williams & Salyer, 2010; Resnick, 2003) and those with a variety of chronic conditions, including cancer (Brown et al., 2011; Demark-Wahnefried, Aziz, Rowland, & Pinto, 2005; Stuijbergen, Morris, Jung, Pierini, & Morgan, 2010). One goal of Healthy People 2020 is to increase physical activity among older adults (<http://www.healthypeople.gov/2020>). Age, gender, and health status, as well as psychosocial predictors such as self-efficacy and social support, are all significantly related to health-promoting behavior in aging populations (Byam-Williams & Salyer, 2010; Coulsen, Strang, Mariño, & Minichiello, 2004; Resnick, 2003).

One special group of older cancer survivors—those with a disabling condition prior to their cancer diagnosis—merits particular consideration, because they must balance the effects of cancer with the ongoing demands of their prior disabling condition. In this study, we explore health promotion among older cancer survivors (past active treatment) with preexisting disabling conditions. We address the following research question: Do perceived resources

and barriers contribute significantly to reported health promotion among older cancer survivors with preexisting disabling conditions, after controlling for contextual factors?

Our theoretical framework is the Explanatory Model of Health Promotion and Quality of Life for People with Disabilities (Stuifbergen, Seraphine, & Roberts, 2000), which posits that resources such as social support and self-efficacy, as well as health promotion barriers, are powerful predictors of health promotion in those with disabilities. Previous research has shown that resources and barriers contribute significantly to the likelihood that individuals engage in health-promoting activities after controlling for contextual factors such as degree of impairment or demographic characteristics. The model has been tested in individuals with various disabilities, but not in older cancer survivors with prior disabling conditions.

Method

The present sample was a subsample drawn from a larger study of quality of life for cancer survivors with preexisting disabling conditions (Becker, Kang, & Stuifbergen, in press). For that study, following Institutional Review Board approval, a nationwide sample of survivors from throughout the U.S. was recruited via contacts with disability programs, Independent Living Centers, and other disability researchers; recruitment information was also posted on national disability and cancer websites and in disability publications. Participants from previous disability research studies who had agreed to participate in subsequent research were also contacted. *Disability* was operationalized as limitations in activities due to physical, mental, or emotional problems; such self-reported limitations establish disability status on national surveillance surveys (CDC, 2005). Respondents had to confirm that these limitations existed prior to their cancer diagnosis on a flier they returned to the research office. To participate, cancer survivors had to be 60 years old or older and at least 6 months beyond active treatment.

Those who returned recruitment fliers (or made phone or email inquiries) were screened for eligibility. Staff then mailed eligible participants packets that included a background information questionnaire and the instruments described below. Participants were told to take breaks if they grew tired while completing these surveys, and to use a toll-free number to call staff for needed assistance. Staff followed up with reminders to those who did not return surveys, and sometimes contacted participants to clarify responses. When surveys were returned, staff sent a thank you note with a \$25 money order and a link to a website about cancer survivorship.

Instruments

Contextual factors—A background questionnaire collected information on primary disabling conditions, health status, and demographic characteristics; respondents rated their health on a 5-point scale (1 = *excellent*, 5 = *poor*). Total comorbidity was derived using the modified Charlson Comorbidity Index (Charlson, Pompei, Ales, & MacKenzie, 1987), which yields a weighted score reflecting the number and seriousness of 16 comorbid conditions. Self-reported comorbidity was strongly correlated ($r = .63$) with ratings from medical records; test-retest reliability of self-report scores was .91 (Katz, Chang, Sangha, Fossel, & Bates, 1996). Participants also rated themselves on 8 items from the National Health Interview Survey (CDC, 2005) that assess physical limitations; these were summed to yield a total limitations score. In previous research, the investigators obtained a Cronbach alpha of .73 for the total score.

Social support—Social support was assessed with the Personal Resource Questionnaire (PRQ) (Weinert & Brandt, 1987). The reliability and validity of this 25-item scale have been documented in various clinical groups, including women with breast cancer and people with

disabilities, with an alpha coefficient of .93 (Northouse et al., 2002; Stuifbergen et al., 2000).

Self-efficacy for health promotion—The Self-Rated Abilities for Health Practices Scale (SRA) was used to measure self-efficacy to perform health promotion behaviors (Becker, Stuifbergen, Oh, & Hall, 1993). The 28 items are summed to yield scores in Nutrition, Psychological Well-being, Exercise, and Responsible Health Practices as well as a total score. The reliability and validity have been demonstrated in multiple studies of individuals with disabilities (alpha coefficients of .92–.95) and Callaghan's (2006) study of older adults (alpha coefficients .82–.94).

Barriers—The 18-item Barriers to Health-Promoting Activities for Disabled Persons Scale (Becker, Stuifbergen, & Sands, 1991) assessed barriers to health promotion. Cronbach alpha coefficients .80 or above were reported, and Barriers scores were negatively correlated with health promotion frequency in studies of people with disabilities (Stuifbergen et al., 2000).

Depressive symptoms—The Center for Epidemiological Studies Depression Scale–10 (CESD–10) was used to measure another potential barrier, depressive symptoms (Andersen, Malmgren, Carter, & Patrick, 1994). Higher scores indicate more depressive symptoms. Previous research with cancer survivors, particularly those with breast cancer, has used the CESD (Badger, Segrin, Dorros, Meek, & Lopez, 2007; Bower et al., 2000). Its reliability and validity have also been supported in research with people with disabilities and with older adults (Irwin, Artin, & Oxman, 1999; Robinson-Whelen, Hughes, Taylor, Hall, & Rehm, 2007).

Health promotion—The Health-Promoting Lifestyle Profile II (HPLPII) assessed frequency of reported health promotion (S. N. Walker, Sechrist, & Pender, 1995). The 52 items are summed to create scores on six subscales (Physical Activity, Spiritual Growth, Interpersonal Relations, Health Responsibility, Stress Management, and Nutrition). Multiple studies have reported good reliability and validity for the HPLPII in people with cancer and other chronic health conditions as well as in older adults (Berger & Walker, 2001; Callaghan, 2006; Stuifbergen et al., 2000; C. L. Walker & Nies, 1998).

Results

SPSS Statistical Package for the Social Sciences 16.0 was used for data analysis. Case deletion, variable deletion, and mean substitution were used to handle missing data. Data entry for a random sample of the survey was rechecked; a sample profile was created so that distributions for each variable could be inspected. Cronbach alpha coefficients for scale scores ranged from .72 to .91, with one exception: The coefficient for the 8-item physical limitations total was .60.

Sample Characteristics

The 92 respondents were 73% female and 98% non-Hispanic White. They were 69 years old on average, and 54% had at least a college education. Fifty-three percent had polio, and 33% had multiple sclerosis. Fifty-seven percent had breast cancer, and 58% were 6 or more years since their cancer diagnosis. They reported an average of 4 out of 8 possible physical limitations.

Descriptive Statistics

The sample had a mean score of 145.33 ($SD = 20.89$) on the HPLPII Total. Average item scores ranged from 1.87 for Physical Activity to 3.12 for Spiritual Growth on the six subscales. Cronbach alpha reliability coefficients ranged from .75 to .92

Hierarchical Regression Analysis

Assumptions such as multicollinearity were checked; a series of two-step hierarchical regression analyses then determined whether psychosocial resources and barriers increased the prediction of HPLPII total and subscale scores after health status and demographic characteristics of the older cancer survivors entered into the equations. An alpha of $p < .05$ was the criterion for statistical significance. Demographic and health factors entered in the first step of the equations comprised educational level, the health self-rating, Charlson Comorbidity total, Physical Limitations total, and time since cancer diagnosis. On the second step, the resource and barriers predictors included the PRQ social support total, SRA self-efficacy subscales (or the SRA total when no specific SRA subscale corresponded to the HPLP subscale), the CESD measure of depressive symptoms, and the Barriers total.

Only the health self-rating and time since cancer diagnosis proved to be significant predictors of the HPLPII total on the first step of the model. On the second step, R^2 increased significantly from .17 to .64. The only statistically significant predictors in this model were the SRA (self-efficacy) total, followed by the PRQ social support scale (see Table 1).

Hierarchical regressions were performed for each HPLPII subscale (data not shown). The only background variables to enter any regression on the first block were health self-rating (to predict Spiritual Growth and Stress Management) and total physical limitations (to predict Physical Activity). In all equations, SRA self-efficacy for health promotion was the strongest predictor. Social support was a significant predictor in three of the six HPLPII subscales (Health Responsibility, Interpersonal Relationships, and Spiritual Growth). For all subscales, addition of resources and/or barriers on the second step added significantly to the prediction of scores on the corresponding HPLPII subscale. Variance accounted for ranged from .37 (Nutrition) to .65 (Physical Activity).

Discussion

To our knowledge, this is the first study to address health promotion among older cancer survivors with preexisting disabling conditions. Our sample was similar to Callaghan's older adults (2006) in self-reported levels of health promotion. Although (or perhaps because) both groups faced health challenges, their reported frequencies of health promotion were above the midpoint on most subscales. Both groups scored highest on Interpersonal Relationships and Spiritual Growth. Both groups scored lowest in Physical Activity, suggesting a need for nursing interventions. Other studies of older adults have also documented that being physically active is more challenging for those with health problems (Cardinal & Spaziani, 2003; Rimmer & Braddock, 2002); 74% of the elders in Resnick's (2003) sample reported that their physical condition interfered with regular exercise.

As posited by Stuijbergen's model, resources such as social support and self-efficacy added significantly to the prediction of health promotion, after contextual factors such as health status, impairment, and demographic characteristics were entered into the equation. Perhaps time since cancer diagnosis was not a stronger predictor because the majority of respondents were 6 or more years past their past cancer diagnosis.

Not surprisingly, SRA self-efficacy was the strongest predictor of frequency of health promotion, because the predictors in the SRA address health promotion specifically. Other studies have also found that self-efficacy is an important predictor of exercise behavior among cancer survivors (Haas, 2000; Lev, 1997), and exercise interventions that incorporate self-efficacy strategies have been particularly effective (Bennett, Lyons, Winters-Stone, Nail, & Scherer, 2007). The key role of social support observed here is consistent with other reports about the relationship between health promotion and social support in those with cancer and other chronic health conditions (Alfano et al., 2009; Rimmer & Braddock, 2002).

The variance accounted for in the health promotion subscales varied widely (from 37% for Nutrition to 65% for Physical Activity). Other factors not considered here may be more related to Nutrition. For example, the type and number of medications taken, as well as oral health, can affect eating behaviors of the elderly (Pender, Murdaugh, & Parsons, 2006; Quandt et al., 2010). Also, the availability of someone who can shop and cook healthy meals may be a key factor that should be addressed in future health promotion interventions.

These findings should be interpreted cautiously because this was a small convenience sample; a more representative sample might present different experiences. In addition, most of the sample reported preexisting neuromuscular impairments. Future research should investigate health promotion among those with other disabling conditions. Because this sample was relatively small, only a few predictors could be entered into the hierarchical regression analyses; other key variables may contribute to the prediction of health promotion. Moreover, these correlational analyses cannot identify causal determinants of health promotion.

Implications for Nursing

Despite these limitations, our findings suggest that interventions to assist older individuals with chronic conditions (including cancer) in building social support and perceived self-efficacy may help them lead healthier lives. As older adults lose family and friends, the creation of new supportive bonds may be challenging, but it may be key to their well-being.

As with other groups of older adults, those with chronic disabling conditions (including cancer) are less likely to report engaging in physical activity, and the present results suggest that this may be related to a lack of self-efficacy, particularly for those with a number of physical limitations. Nurses should educate their older clients with chronic health conditions about safe and effective ways to be physically active. They can capitalize on resources provided by organizations such as the National Center on Physical Activity and Disability (www.ncpad.org).

Like many other older adults, older cancer survivors with preexisting disabling conditions do report engaging in many health-promoting activities, but their physical activity remains a challenge. Nurses are encouraged to implement interventions that help their patients develop their perceived ability to promote their health, particularly through physical activity. For many older adults—particularly those with disabilities—environmental supports such as access to healthy foods and safe places to engage in adaptive exercise can play a key role in promoting healthy lifestyles. Because social support is strongly associated with health promotion, these interventions should be embedded in a socially supportive context.

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Table 1

Hierarchical Regression to Predict HPLP II Total (N= 92)

Variables	Step 1 Beta Weights	Step 2 Beta Weights
	R ² =.17, Adj R ² =.12	R ² =.64, Adj R ² = .59
		F for change: 24.57 **
Health Self-Rating	-.25 *	-.04
Comorbidity Total	-.09	.00
Limitations Total	-.10	.09
Years of School	.11	-.06
Time Since Cancer Dx	-.22 *	-.14
SRA Total		.60 **
Barriers Total		.04
CESD Total		-.06
PRQ Total		.36 **

Note. HPLP II = Health Promoting Lifestyle Profile II; CESD = Depressive Symptom Scale; PRQ = Personal Resource Questionnaire; SRA = Self-Rated Abilities for Health Practices Scale. Health Self-Rating from "1" Excellent to "5" Poor.

*
p < .05

**
p < .001