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## Health-Promoting Behaviors of Low-Income Cancer Survivors

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### Abstract

**Purpose/Objectives**—The purpose of this study was to explore the health-promoting behaviors of low-income cancer survivors before and after their diagnosis of cancer.

**Design**—This qualitative study used a purposive sampling strategy to identify low-income, ethnically diverse cancer survivors.

**Setting**—Participants were recruited from an urban outpatient cancer clinic serving only low-income clients.

**Sample**—Thirteen, ethnically diverse low-income cancer survivors participated in 60–90 minute interviews discussing their experience with health-promoting behaviors before and after their diagnosis with cancer, their cancer experience, and their perspectives on being a cancer survivor.

**Methods**—Conventional content analysis of transcripts and field notes by two coders identified words, context, frequency, emphasis, and consistency of participants' comments. Statements were further examined to identify patterns and main themes and to interpret the meaning of what was said.

**Findings**—Participants described their use of various health-promoting behaviors primarily walking, maintaining a positive mental attitude, and changing their diet. Participants discussed their perspectives on being diagnosed with cancer as well as the meaning of being a cancer survivor. They described spiritual growth through prayer, renewing their faith, maintaining a hopeful outlook, and expressing thankfulness toward God. Participants expressed interested in learning about effective physical exercises, healthy eating, and stress management strategies. **Conclusions:** Results suggest that low-income cancer survivors engage in various health-promoting behaviors and want to learn more behaviors to use after cancer treatment.

**Implications**—Findings provide useful information for Clinical Nurse Specialists when providing information about health-promoting behaviors for use during and after cancer treatment as well as the meaning of cancer survivor for low-income cancer survivors.

### Keywords

Cancer survivor; health-promoting behaviors; health promotion

### Introduction

The incidence of cancer steadily rose throughout the last century to become the second leading cause of death in the US. According to the American Cancer Society (ACS), nearly

1.5 million new cases of cancer are projected for 2008, over half of which are prostate, female breast, lung, gastric, colon, and rectal cancers. The 5-year survival rate of 63% for all cancers is increasing, primarily due to advances in early diagnosis and treatment<sup>1</sup>. It is estimated that there are over 10 million cancer survivors in the United States<sup>1</sup>. Given the increasing number of cancer survivors, it is important to plan for the future health of today's cancer patients by promoting healthy behaviors during and after treatment. Persons with cancer using health-promoting (HP) behaviors report reduced fatigue, improved physical function, and enhanced emotional state<sup>2</sup>.

A recent report from the National Cancer Institute establishes the need for directing more resources toward low-income persons (low annual income and/or lack of insurance) because they have the highest rates of new cancers and cancer deaths. Singh and associates reported that persons from high poverty areas had "substantially higher rates of late-stage cancer diagnosis and lower rates of cancer survival than those in low poverty areas"<sup>3</sup>. Byers and associates report low socioeconomic status is a strong predictor of mortality among minority groups such as Hispanics and African Americans primarily due to more advanced disease at diagnosis and less aggressive treatments<sup>4</sup>. Also, those with limited financial resources experience multiple difficulties, including the financial burden of having a life-threatening diagnosis, economic impact of treatment, and managing various symptoms from the disease and its treatment making it difficult for them to cope effectively<sup>4-5</sup>. Promoting healthy behaviors in low-income persons can enhance their resources for living healthy both during and after treatment.

Many individuals in the U.S. have difficulty maintaining their health during the cancer experience because they encounter multiple barriers to acquiring or participating in HP behaviors. Socioeconomic factors (e.g., low income and lack of health insurance) are especially difficult to overcome and are associated with lower use of health care, poorer overall health, and shortened survival<sup>6</sup>. Barriers to health for low-income persons reported in the literature include inadequate access and/or availability of health care, lack of knowledge of illness and treatment options, low literacy, inaccurate beliefs about health, competing demands (work and child care), mistrust of health care providers, and fear<sup>7-8</sup>.

Identifying HP behaviors appropriate for low-income persons will benefit those with cancer by providing them with information and support to enhance their health and quality of life. Mayer and associates recently reported that only 7.4% of cancer survivors engage in HP behaviors<sup>9</sup>. As seen with adult survivors of childhood cancer, engaging in healthy behaviors can improve overall health and quality of life<sup>10</sup>. The purpose of this study was to explore cancer survivors' experiences with HP behaviors before, during, and after their treatment of cancer. In addition, the investigators sought their perspectives on being a cancer survivor and understanding regarding which HP behaviors they were most interested in learning more about. This study will provide useful information for clinical nurse specialists and other health care professionals when recommending HP behaviors to cancer survivors.

## Health-Promoting Behaviors

Health-promoting behaviors (HP) include continuing cognitive, emotional, and behavioral efforts to sustain and improve health. Although HP behaviors may not change underlying pathophysiology or the various barriers and resources existing in an individual's life, they are thought to influence the individual's response to such conditions, thereby mediating the effect of these variables on health and quality of life<sup>11</sup>. A variety of HP behaviors have been reported in the literature as beneficial for cancer survivors.

## Acquisition of Knowledge

The acquisition of knowledge about cancer and its treatments has shown positive effects on physical and psychological health. A recent meta-analysis of experimental psychosocial interventions for cancer survivors reported that patient education had the strongest effect, 0.43 (correlation equivalent delta), on quality of life<sup>12</sup>. People newly diagnosed with cancer need to understand as much as possible about the disease process, treatment options, progression of the disease, tobacco cessation, community resources, and prevention and management of cancer-related symptoms. An important educational component is information on the effective management of symptoms from cancer and its treatment (e.g., pain, nausea, and fatigue) because research has demonstrated the positive effects of symptom management education on quality of life<sup>13</sup>. Low-income people are vulnerable due to misunderstanding about these issues and low health-related literacy. Research in low-income populations has primarily examined the effects of education on cancer screening, treatment decisions, and follow-up care<sup>14</sup>.

Education on tobacco cessation is another vital element for those with cancer, especially those with smoking-related cancer, as many are ready to stop at this critical point<sup>15</sup>. Education on tobacco cessation is especially important since Mayer and associates found that over 22% of cancer survivors reported they were smokers<sup>9</sup>. Tobacco cessation education would reinforce information received during the recommended smoking counseling for hospitalized patients recommended by The Joint Commission, one of their reportable performance measures. Rice & Stead reported from their meta-analysis that nursing interventions such as structured counseling on smoking cessation had a positive effect on long-term abstinence<sup>16</sup>.

## Stress Management

The effective management of stressors related to cancer is another behavior that can improve adjustment to illness and quality of life in low-income cancer survivors. In an analysis of psychosocial interventions for cancer survivors, Rehse and associates reported the most helpful and frequently examined intervention was coping skills training. Coping with a new diagnosis of cancer requires effective communication, problem solving, prioritizing, and relaxation techniques<sup>12</sup>. Learning coping strategies is associated with improved quality of life and health in adults with newly diagnosed disease and those with advanced cancer<sup>17</sup>. Cancer support groups incorporating stress management and adjustment strategies that encourage cancer survivors to share their feelings, listen and learn from others, and establish social relationships are an effective health promotion activity<sup>18</sup>. For instance, quality of life was improved for women with breast cancer in a support group that emphasized management of stress and uncertainty, strategies for problem solving, and cognitive reframing<sup>19</sup>.

Stress management techniques useful for people diagnosed with cancer can also be applied to other life problems to enhance survivorship. It is widely accepted that management of stress has lasting benefits for healthy people<sup>20</sup>. Now there is mounting evidence that stress management has long-term health benefits for cancer survivors by enhancing quality of life, improving survival, and decreasing recurrence<sup>21–22</sup>.

## Physical Activity

The American Cancer Society recommends people engage in regular physical activity at least three to five times a week<sup>23</sup>. This is congruent with the Center for Disease Control and Prevention call for every adult to accumulate 30 minutes or more of moderate intensity physical activity on a daily basis<sup>24</sup>. Pate and colleagues note that confidence in the ability to be physically active, perceived barriers to activity, and enjoyment are strongly related to

actual participation in physical activity. Research in “healthy” people has shown that physical activity has positive effects on physical and psychosocial processes such as reducing fatigue, improving physical functioning, and enhancing mood states <sup>25</sup>.

Health-promoting behaviors of physical activity and exercise are being recommended for cancer survivors based on recent research showing positive effects on health and quality of life<sup>26</sup>. Exercises can assist cancer survivors to achieve and maintain their weight as well as help those choosing to quit smoking by curbing their nicotine withdrawal <sup>27</sup>. Unfortunately, many people diagnosed with cancer stop their physical activities during the treatment phase when starting or maintaining physical activity can have such positive effects. Irwin and associates reported women with breast cancer reduced their physical activity after being diagnosed and many did not resume previous levels of activity during or following treatment <sup>28</sup>. Courneya and Friedenreich found people with colorectal cancer who reported lower quality of life had reduced or stopped their physical activity during and after treatment <sup>29</sup>. Mayer and associates reported 45% of cancer survivors engaged in regular physical activity but over half of the participants were overweight or obese <sup>9</sup>.

### **Nutrition**

An expert panel examining current scientific evidence has established nutritional guidelines for cancer survivors <sup>30</sup>. The American Cancer Society report outlines goals for dietary intake during treatment, which includes maintenance of energy levels, prevention of unwanted weight loss, and moderate consumption of vitamin and mineral supplements. The report recommends guidelines for nutrition and diet after completion of cancer treatment to prevent recurrence or occurrence of a second cancer <sup>30</sup>. In addition, the 5 to 9 A Day Program (eat 5 to 9 servings of vegetables and fruit daily) can be utilized as one nutritional strategy to improve health and maintain weight <sup>31</sup>. Furthermore, recent work has shown a strong association between nutrition and incidence of cancer and growth of tumors confirming the significance of healthy nutrition for cancer survivors <sup>32</sup>. Research is limited on nutrition during and after cancer treatment but focuses on maintenance of energy and weight as well as intake of fruits, vegetables, and dietary supplements in various types of cancers <sup>33</sup>. In a recent study of cancer survivors, only 18% reported eating at least 5 servings a day of vegetables and fruit <sup>9</sup>.

### **Spirituality**

Enhancing the spirituality of low-income cancer survivors is yet another HP behavior, which provides people with an internal resource for dealing with cancer and its treatment. Research has demonstrated that using spiritual activities such as finding meaning and purpose in life, prayer, and religious services have helped people cope with illness <sup>34</sup>. In numerous studies of cancer survivors, spiritual variables of purpose in life, prayer, and religious beliefs were positively related to adjustment to illness, psychological well-being, and quality of life <sup>35–36</sup>. For instance, meaning in life was positively related to physical and psychological well-being and mediated the impact of having cancer on the well-being of breast cancer survivors <sup>37</sup>.

### **Summary**

The majority of cancer health promotion research has focused on prevention, early detection, and health maintenance. Health promotion focusing on vulnerable populations, like the low income, have not been widely studied. Yet people with low income have reduced levels of health compared to middle- to upper-income populations with contributing factors such as high risk behaviors, noncompliance with treatment, delay in seeking care, life focus on survival, and cultural beliefs <sup>7</sup>. Thus, more research is needed to examine HP behaviors in low-income cancer survivors.

## Methods

This qualitative study was designed to explore low-income, ethnically diverse cancer survivors' experience with HP behaviors before and after being diagnosed with cancer. In addition, we sought their perspectives on being a cancer survivor and understanding about which HP behaviors they were interested in learning more about. Study procedures were approved by the Institutional Review Boards of the participating institution. Low-income cancer survivors who had been diagnosed with any stage and type of cancer for at least six months were recruited using a purposive sampling strategy. Cancer survivors were recruited from an outpatient cancer clinic exclusively serving low-income clients (medically indigent and/or annual income less than \$25,000). Participants gave informed consent before participating in the semi-structured interview.

Interviews were guided by a set of questions with in-depth probing questions to encourage responses. Sessions were held in a private conference room or secluded area in the chemotherapy infusion room to ensure confidentiality. Participants were asked during the 60–90 minute interviews about their cancer experiences, HP behaviors they used to maintain health prior to diagnosis, feasibility of engaging in HP behaviors during and following cancer treatment, barriers to engaging in behaviors, HP behaviors of interest, where they obtained information on their type of cancer and treatment, and their perspectives on being a cancer survivor. Sessions were audio taped and professionally transcribed. Field notes were generated by the interviewer immediately following each session to capture relevant contextual information or body language. Data collection and analysis were carried out concurrently. Transcripts and field notes were independently analyzed by two coders using conventional content analysis<sup>38</sup>. Content and thematic analysis was inductive, identifying the words, context, frequency, emphasis, and consistency of participants' comments. Statements were further examined to identify patterns and main themes and to interpret the meaning of what the participants said<sup>39</sup>. Coding reports were summarized and crosschecked to ensure consistency of the interpretation. Whenever divergent interpretations occurred, transcripts were re-reviewed and discussed until consensus was achieved.

## Results

Thirteen low-income cancer survivors included 5 men (38%) and 8 women (62%). Participants represented various ethnic groups including 3 African Americans (23%), 3 Hispanic (23%), 1 Asian (8%), and 6 White (46%), and ages, ranging from 40–70 years old. In terms of type of cancer, 4 participants had breast cancer (31%), 3 had colon cancer (23%), and the rest (38%), had various types of solid tumor cancer (lung, prostate, uterine, or gallbladder) or hematological cancer (chronic leukemia and multiple myeloma). Time since being diagnosed varied as well with 4 participants being less than a year since diagnosis (31%), 5 being less than two years (38%), and the remaining 4 were diagnosed over two years before (31%). Thus their phase of cancer survivorship varied greatly with 4 in the acute treatment phase (31%), 4 long-term (>18 months) survivors (31%), and 5 receiving treatment for metastatic cancer (38%).

### Cancer experiences

Participants were initially asked to describe their experience with cancer. Their reactions to having cancer varied widely from denial to acceptance to viewing cancer as a punishment. One participant said “..its just like Alice in Wonderland when she fell down the rabbit hole. You just--all of a sudden you're in a different world and you never know from one day to the next what they're gonna be doing, what kind of procedure, how invasive its going to be. So you just kind of resign yourself to I'm here in the hospital and you place yourself in the hands of the medical practitioners.” Another said “..with the Asian community its kind of a

stigma. They don't look at it as either environmental or your genes. They look at it as some type of punishment or something... family and friends asked 'Well what have you done to deserve this?' So it was kind of very, very difficult at first..."

As participants talked about their cancer experience they expressed various strategies for dealing with cancer. One participant described how she coped

"Its scary as hell but you can't let it tear apart your life and I tell everybody, I told my husband and my kids if you fall apart, I'll fall apart and I can't afford to fall apart because if I fall apart, it just gives it (cancer) that much more to it. I read in one of those little books that they suggested that cancer loves stress and stress feeds cancer so I try not to have any. I try not to have any stress in my life because I want to go forward."

Another person said

"I just had such a strong belief that I knew I was gonna be okay and that everything, in other words, I didn't have any anxieties or fears, I was just really at peace that I was going to go through what I was going to go through and if I needed help anywhere along the way, I'd stop and get it."

Seven participants described using some type of HP behavior prior to being diagnosed with cancer. The most frequently reported behavior was physical activity such as walking several times a week. Other HP behaviors reported were maintaining a positive attitude, taking vitamins, having faith in God, and prayer.

### Health-Promoting Behaviors

Twelve participants added HP behaviors after their diagnosis of cancer. They predominately reported walking, maintaining a positive mental attitude, and changing their diet. As one participant said "I try and walk...there is a park right down the street from us and I try to walk every day." Another survivor described the benefit of physical activity during treatment as "... not feeling as tired by forcing oxygen to move through your system. That's important in cancer."

Eleven cancer survivors reported various dietary changes including eating a healthy, balanced diet, lowering fat and/or sodium content, increasing water consumption, taking multiple vitamins, and/or eliminating substances such as soft drinks, caffeine, and alcohol. As one participant described her changes "I try not to eat any food that's bad for me or unhealthy. I don't eat any junk food, no snack food, no sugar." Another said "My behavior has been unhealthy through most of my life...I did stop drinking beer, coffee, red meat. I'm now eating almost entirely vegetables, protein in the form of nuts, beans, eggs, things like that."

Another theme that emerged from the data was spiritual growth through either prayer (both their own and those of others), renewing their faith in God, maintaining a hopeful outlook, or expressing thankfulness toward God. One woman said "I feel blessed. I believe in the power of prayer. I have so many people that love me and pray for me." Another survivor said

"...it has really drawn me to my faith and it has really changed my life... it has made me not take life for granted as I did in the past and appreciate the things that I have and hope and pray for the things that I don't, appreciate life, appreciate people...I'm so strong in my faith now that cancer really did save my life."

Finally, participants described several specific psychosocial HP behaviors they adopted after the diagnosis of cancer such as use of support group, support of family and friends, choosing



not to worry or have negative thoughts, and maintaining a positive mental attitude toward their cancer and treatment. A man described the importance of social support by saying “I have friends who check up on me all the time. I have lots of friends and gosh, thank goodness for them. Otherwise I would have locked myself away pretty much.” One participant summed it up by saying “I just try to stay away from negative things and negative situations and stay more positive with more positive people.”

Participants were quite interested in learning about more HP behaviors. Near the conclusion of the interviews, they were shown a list of HP behaviors and asked which behaviors they were interested in knowing more about. Participants wanted to learn about exercises to combat fatigue, personal spiritual growth, stress management, knowledge of cancer, strategies to build personal relationships, physical activities to improve health, and principles of nutrition for eating healthy foods. The majority of participants expressed interest in learning about effective physical exercises, healthy eating, and stress management strategies.

### **Barriers to Health-Promoting Behaviors**

When asked about barriers to adopting HP behaviors, participants reported their barriers were pain, fatigue, myself, and lack of interest or time. As one man described his barrier to doing healthy behaviors “I’m the only one that keeps me from doing healthy behaviors.” Another described how fatigue was a barrier

“I haven’t had the energy to like go to the grocery store (or anything else) because I can’t carry the stuff in. I get too short of breath and I’ve just put off asking my daughter or anybody to do it, but I’m at the point right now where I’m going to do that.”

Interestingly, only one person stated lack of money was a barrier to engaging in HP behaviors.

### **Sources of Cancer Information**

It is important to note eleven low-income cancer survivors reported their primary source of information concerning cancer and its treatment was from the Internet. A participant described it best “I got a tremendous amount of stuff from here (cancer clinic), which I read, but on the Net you can get it too, its nice to have diversity....I think its really important that you do whatever you can for self help, whatever makes you feel good, anything.” Many acknowledged learning much from health care providers (physician and nurses), cancer booklets, and family or friends.

### **Meaning of Cancer Survivor**

Near the conclusion of the interviews, participants were asked what being a cancer survivor meant to them. Their answers were quite different with all the participants thinking it was when they would become cancer-free. Additional descriptions of the meaning of cancer survivors were “being like Lance Armstrong,” being someone who is “finished with cancer treatment” or living with cancer by “surviving day to day”. None of the participants described cancer survivor as it is currently defined as beginning with the diagnosis with cancer<sup>40</sup>. Several seemed quite confused when told what the term meant and they asked why it was defined that way.

### **Discussion**

This group of ethnically diverse low-income cancer survivors reported engaging in some HP behaviors prior to their diagnosis, adopting some behaviors following their diagnosis, and

being interested in learning about more behaviors. Most participants reported adding HP behaviors after their diagnosis of cancer, predominately walking, maintaining a positive mental attitude, and eating a healthy, balanced diet with low fat and sodium. In contrast to these low-income cancer survivors recent research on HP behaviors has shown that only 18% of cancer survivors report consuming a healthy diet and 35% are physically active<sup>41</sup>. Another study reported similar findings for physical activity with only 33% of mid-age survivors and 25% of older survivors engaging in physical activity or exercise<sup>42</sup>. Low-income cancer survivors primarily expressed interest in the HP behaviors described in the literature as appropriate for cancer survivors especially exercise, healthy eating, spiritual growth, and stress management. In addition, findings show that these cancer survivors want to learn about HP behaviors to improve their health.

Low-income cancer survivors' description of barriers to HP behaviors and health promotion during cancer did not include the obvious barrier of money. Many healthy behaviors such as a eating a balanced diet, some forms of exercise, and losing weight can be expensive especially for those on a limited income or resources. Several mentioned lack of time as a barrier to adopting HP behaviors, which would be a challenge to overcome particularly during the treatment phase of the disease.

It is interesting to note that the majority of participants had obtained much of their knowledge about their type of cancer and its treatment from the Internet. Accurate information is available on the Internet, in libraries, and through oncology organizations such as organizations such as the American Cancer Society, CancerCare.org, and the Oncology Nursing Society. The Internet can actually be an excellent tool for reinforcing the information given by health care providers. Unfortunately some inaccurate information is posted on the internet, which can cause confusion and distress for cancer survivors and their family members. Furthermore there is much misinformation about cancer and effective cancer treatments available on the internet<sup>43</sup>. Despite having access to accurate information from health care providers, low-income cancer survivors may be more susceptible to information obtained from websites recommending untested or potentially dangerous treatments because they do not have the time to verify this information.

These low-income participants' confusion regarding the meaning of cancer survivor presents a unique dilemma as living with cancer and its treatment is an extensive process with little opportunity to become a survivor as they understand the term. Cancer survivor replaced cancer patient to emphasize the importance of what people with cancer were living through in terms of the disease and difficult forms of treatments<sup>44</sup>. This information has implications for health care professionals to educate cancer survivors on the true meaning of the term.

Information learned from this study is limited due to the small sample size of low-income cancer survivors. Their unique perspectives on appropriate and realistic HP behaviors during and after cancer treatment may not reflect most low-income cancer survivors' experiences. In particular, the ideas from this group of survivors concerning HP behaviors may not be suitable for those with early stage cancer since many participants had metastatic disease.

Results have important implications for health care professionals when recommending HP behaviors for cancer survivors. There was sufficient interest for information about many of the HP behaviors. Additionally, specific educational resources including websites on cancer and its treatment must be given to those diagnosed with cancer. Health care professionals are in a unique position to educate cancer survivors and their family members on strategies to confirm the accuracy of information obtained from the Internet.



## Conclusion

The literature demonstrates that health promotion and HP behaviors can improve overall health and quality of life. Engaging in HP behaviors may also lessen the impact of cancer on health status. Several studies have examined the benefits of specific HP behaviors but few have focused on low-income cancer survivors. Findings from this study confirm that low-income cancer survivors engage in some HP behaviors and want to learn more about additional behaviors for after cancer treatment. This study provides useful information for clinical nurse specialists and other health care professionals when recommending HP behaviors. More research is needed on the influence of health promotion activities and specific HP behaviors for low-income cancer survivors. Additionally, the impact of engaging in HP behaviors and its effect on physical and emotional well-being must be examined.

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