The Impact of Physical Activity for Cancer Prevention: Implications for Nurses

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Objectives: *To discuss the significant issues surrounding the prescribing of physical activity as a first line of defense against the development of age-associated life-limiting illnesses such as cancer while providing strategic knowledge for clinicians regarding its prescription and management.*

Data Sources: *Literature review on physical activity in cancer prevention.*

Conclusion: *There is growing evidence that reduced physical activity increases the risk of co-morbid conditions such as cancer, yet there is limited clinician education and subsequent prescription of physical activity.*

Implications for Nursing Practice: *Nurses in partnership with other primary care clinicians have a unique opportunity to effect change of our nation's greatest modifiable public health threat, physical inactivity.*

Key Words: *physical activity, physical inactivity, sedentary, exercise, exercise prescription, chronic disease, cancer.*

"We are retired people; we sit on the couch . . ." As a nurse, my mouth dropped when I heard this comment from a 67-year-old retired couple, one that had recently been diagnosed with lung cancer. What about the negative effects sitting on the couch will have on your health when you live to be 100 years old or beyond, I asked? "We are retired people, we sit on the couch," they repeated. The question remains, can you retire spending the majority of your time sitting on the couch and live to be 80, 90, or even 100 years of age, especially if you are a cancer survivor? Today, living to 100 or beyond is possible but the goal should not be purely to live longer; rather the focus should be on optimizing health and wellness to pre-empt avoidable functional health declines. The decision to move or to sit is proving to be a critical one that must be made sooner than later. While retirement provides time and opportunity to do as much or as little as one wants, the seemingly

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innocuous decisions to sit rather than move when a person reaches 50 years of age may have greater latent negative health consequences than one would ever imagine. The decision to sit could potentially set a course for having to stave off life-limiting co-morbid conditions such as cancer. These co-morbid conditions produce severe symptoms, limit activity levels, reduce functional status, quality of life, and ultimately a person's life span.

This article examines the significant issues surrounding the current serious public health threat of physical inactivity in the adult and older adult population that demands the attention of nurses in partnership with other primary health care providers/clinicians (physicians, physician assistants). Further, this article applies to nursing as a discipline, and other primary health care providers/clinicians because physical inactivity is a complex, real-life health threat that should be addressed across disciplines. Multiple disciplinary teamwork has been shown to improve patient outcomes and provides for diverse, coordinated clinical expertise, experience, and skills.[1] The discussion is organized using brief descriptions of clinical experiences, research reports, expert guidelines, and theory, outlining the problem of physical inactivity and the evidenced-based strategies clinicians can implement to promote physical activity.

Background of the Problem

Living Longer with Little Preparation

In 2016, nearly 1,685,210 Americans are expected to be diagnosed with cancer.[2] Further, the incidence of cancer has been shown to increase with advancing age, where 86% of all cancer in the United States is diagnosed in persons 50 years of age and older.[2] Today, Americans are living well into their 80s and 90s, with a 2014 report indicating there were 72,197 Americans 100 years and older, up 44% from the turn of the century.[3] This number is expected to grow such that by the middle of the 21st century one in four Americans, approximately 100 million, will be 65 years and older.[4] Further, in a 2015 survey of 2,330 adults 18 years of age and over, 77% stated they wanted to live to 100 years, with one third believing they will live past 90 years of age.[5] In addition, most surveyed said they believed a healthy diet and exercise were important to living a long life.[5] Yet, nearly 75% said they do not eat enough healthy foods or avoid unhealthy foods, with only one third of the persons surveyed reporting being happy with their current body weight and 82% reporting they were not likely to exercise.[5] These reports seem contradictory to the fact that 89% of respondents reported being worried about staying healthy and avoiding serious disease.[5] Moreover, 36% responded that health concerns, getting sick, illness, and poor health are what scared them the most about getting old.[5] Yet, nearly 80% of respondents reported knowing about healthy daily activities but actually carrying out these activities proved much more difficult to do.[5] Consequently, this underscores reports that there is a gap between the knowledge of what to do and the required desire and/or actions needed to achieve and maintain health and fitness as Americans contemplate living a long and healthy life.

The Negative Effects of Physical Inactivity Comparable with Smoking

The World Health Organization reported that physical inactivity is the fourth leading risk factor for death globally.[6] In the US, nearly 80% of adults do not meet the 2008 Physical Activity Guidelines of engaging in at least 150 minutes of moderate-intensity physical activity per week.[7] Those adults that are active have nearly a 30% lower risk of dying of all-cause mortality compared with physically inactive individuals.[8] Shockingly, sedentary behavior (eg, sitting, in the context of watching television or using a computer) has become a risk factor on par with smoking.[9] Sedentary behavior is defined as any behavior with energy expenditure of 1.5 metabolic equivalents (METs) or less.[10,11] A meta-analysis of 595,086 participants in six prospective studies reported that adults face a 5% risk of all-cause mortality for each 1-hour increment in sitting time per day more than 7 hours a day.[12] Further, time spent sedentary increases with age, with those 20 to 29 years old spending 7.7 hours per day sedentary while persons 70 to 79 years of age spending 9.6 hours per day sedentary.[13] Likewise, consistent with the continued societal expansion of technology,[14] trends for increased sedentary behavior have also increased.[15] The scientific evidence is stark: regular physical activity is not only associated with reduced risk of mortality by the top two non-infectious killers in America, cancer and heart disease, but also has undeniable beneficial effects on a host of age-related co-morbid conditions to include heart disease, cancer, stroke, hypertension, diabetes mellitus, osteoporosis, mental health, obesity.[16,17]