CANCER PAIN: THE EXPERIENCE OF A NATIONALLY REPRESENTATIVE STUDY OF OLDER ADULTS

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Abstract

This study specifically responds to the United States’ Institute of Medicine’s 2013 report calling for a “concerted national population health-level strategy for pain prevention, treatment, management, and research,” by addressing a gap in the literature about the trajectory of cancer pain in older adults with respect to epidemiology of such pain and outcomes of care. We utilized the Health and Retirement Study (HRS), which is a United States nationally representative sample of older adults. Cancer Caregiver Cohort data collects data every two years starting in 1990. For this project we utilized data from the 2010 and 2012 waves and regression analysis to examine how cancer pain over time negatively impacts overall health and changes in quality of life (QOL) and does so to a greater degree than non-cancer pain. Further, we explored bivariate relationship differences for disparities in gender, race, and socioeconomic status (SES). In this older population we found there was a significant difference in high school education with Whites being more educated than Blacks. The average age of the study population is 71 years and educational access for the minority population in the 1960s was limited which could explain the educational gap. Other SES factors were similar between racial and gender populations. The presence of comorbidities was significantly associated with both cancer and pain. Life satisfaction was higher in Whites and men at trend level. We found that cancer was not a predictor of life satisfaction and only when pain was present, concurrent with cancer or alone, life satisfaction significantly decreased. This was also observed when the population was separated by gender and race. Evidence suggests that rather than cure cancer, HRS respondents with pain have the lowest life satisfaction suggesting that pain is a heavy predictor of poor QOL. This study provides new knowledge about populations who may suffer disproportionally from cancer and (C-P+). HRS respondents with pain have the lowest life satisfaction, while those without pain (C-P-) have a similar and somewhat higher level of satisfaction than people without cancer in similar demographics.

Background

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage. New evidence suggests >100 million Americans live with pain.1 Annual, 11 million individuals are diagnosed with cancer, and by 2020 global cancer rates are estimated to increase by 70%.2 By 2030 the number of Americans >85 years of age is expected to grow to 18 million, with 2.3 million new cases each year. Aging and increased survival from cancer have led to an increase in cancer and pain.3 However, there are no precise longitudinal estimates of the impact of pain or its association with other chronic illnesses in older adults with cancer. Cancer pain is a neglected public health problem and a silent epidemic with significant and potentially devastating socio-economic and health ramifications.3

Despite the availability of effective pain management modalities, pain is the most common symptom associated with cancer (experienced by 60-85% of people with advanced cancer and nearly 40% of five year survivors).4,5 Thus, forward-looking studies are imperative.

Methods

The Health and Retirement Study: HRS is a longitudinal study of health, retirement, and aging. The study includes a nationally representative sample of >32,000 older adults (>50 years old) and an over-sample of African Americans and Hispanics. The study has collected information about income, work, assets, pension plans, health insurance, disability, physical health and functioning, cognitive functioning, and health care expenditures. Baseline interviews with existing birth cohorts are conducted every two years since 1992. For the current analysis, 2010 and 2012 data is used.

Variables: This study looked at demographics (age, race/ethnicity, gender), cancer status (diagnosed, yes or no), current pain status (yes or no), comorbidities, and life satisfaction.

Analysis: Initial analysis included frequencies and descriptive statistics. Crosstabs were used to assess cancer pain and predictors of life satisfaction outcomes were compared by gender and pain status. Finally, multiple analysis of variance was done to include race, gender, SES variables, and comorbidities to account for additive effect.

Results

In preliminary data (Table 1) we found evidence of a significant difference in high school education, with Whites being more educated than Blacks and women being younger than men. Other SES demographics and pain distribution were not different between racial and gender populations. The presence of comorbidities was significantly associated with life satisfaction. Logistic regression analysis and pain were also significantly associated with 41% of people who responded yes to having had cancer (data shown). Figure 1 displays the prevalence of cancer and pain grouped by race, gender, and if they have depression. The occurrence of cancer pain was quite different across race or gender. However, there was a significant positive association between pain and depression but not cancer and depression. Figure 2 shows that life satisfaction was higher in both Whites and men at trend level. We found that cancer was not a predictor of life satisfaction and only when pain was present, concurrent with cancer or alone, life satisfaction was significantly decreased. We saw this pain dependent decrease in life satisfaction continue when separated by race and SES. Cancer care is known that rather than cure cancer, cancer (C+) is protective of life satisfaction. People with cancer and no pain (C-P+) have a similar and somewhat higher level of satisfaction than people without cancer and pain (C-P-). Further, the presence of depression leads to a significant decrease in life satisfaction. Logistic regression analysis suggests that previous satisfaction, pain, stroke, and depression are significant predictors of life satisfaction.

Discussion

Most people with cancer experience pain at some point during or after treatment. Little is known about the role cancer pain plays in the quality of life, especially in older minority populations. Using a nationally representative sample of older Americans we see that pain is a significant player in causing decreased life satisfaction. Future studies will examine the role of depression as a contributing factor to the low percentage of life satisfaction in the P+ population.

References

Julie M. Madden, PhD, received the Poster Presentation Prize at the EuroSciCon Controlling Cancer Summit in London, England last week. The poster entitled, “Cancer Pain: The Experience of a Nationally Representative Study of Older Adults” took first place at the conference. Dr. Madden is a dual postdoctoral fellow with the Department of Hematology and Oncology at UMHS.