Examining the Association Between Positive and Negative Affect and Self-Reported Health in Lung Cancer Patients

Mason, H.¹, Hirsch, J.K., Ph.D.¹, Gibson, B.¹, & Duberstein, P.R., Ph.D.²
Department of Psychology, East Tennessee State University¹
Department of Psychiatry, University of Rochester Medical Center²

ABSTRACT

• Lung cancer patients may report distress with diagnosis, prognosis or treatment, reduced perceptions of physical well-being and may experience low mood and anxiety.
• Most lung cancer patients, however, are able to identify positive or meaningful aspects of their illness. Individuals with positive emotion and energy may experience slower declines in health.
• We examined the association between positive and negative affect and self-reported health outcomes in 133 lung cancer patients.
• Our results suggest that both positive and negative affect are independently associated with self-reported health beliefs, behaviors and outcomes.

INTRODUCTION

• An estimated 161,840 lung cancer deaths, accounting for 29% of all cancer deaths and the leading cause of cancer deaths, were expected to occur in 2008, according to the American Cancer Society’s latest data.
• In addition to disease symptoms, lung cancer patients may experience reduced quality of life, including depression and mood changes; however, much of the research on lung cancer fails to address patients’ psychological distress or well-being (Hopwood et al., 2000).
• Negative mood states are common; research suggests that up to 98% of lung cancer patients experience negative mood or depressive symptoms (Fox, 2006), contributing to poor physical, psychological and social functioning and reduced quality of life (Kim et al., 2005).
• Most lung cancer patients, however, are able to identify positive or meaningful aspects of their illness; 63% of a sample of older adult lung cancer patients reported positive meaning and 53% described their illness as a “challenge” to be overcome (Sarna et al., 2005).
• Individuals with positive emotion may experience slower declines in health and tend to assess their global health and functioning favorably (Pressman & Cohen, 2005); this association is unclear in lung cancer patients.
• We examined positive affect (PA), or the extent to which a person feels enthusiastic, active, and alert, and negative affect (NA), which is a general dimension of subjective distress including feelings of sadness, anxiety, fear and worry (Watson et al., 1988).

METHODS

Participants:
• Lung Cancer Patients (N = 133 )
  • 33% Female 67% Male
  • 1.5% Black, 97.7% White
  • Mean age = 63.68 years old (SD = 9.37)

MEASURES:
• NEO-FFI Personality Inventory
• SF-36

HYPOTHESIS

• Exploratory Hypotheses: Positive affect will be associated with improved health outcomes, and negative affect with poor health outcomes.

NEO-FFI Trait Items
Negative Affect [Neuroticism Domain]
• I am not a worrier.
• When I’m under a great deal of stress, sometimes I feel like I’m going to pieces.
• I rarely feel lonely or blue.
• I rarely feel fearful or anxious.
• I am seldom sad or depressed.

Positive Affect [Extraversion Domain]
• I laugh easily.
• I don’t consider myself especially “light-hearted.”
• I am a cheerful, high-spirited person.
• I am not a cheerful optimist.

ANALYSES

• Bivariate Correlations
• Univariate and Multivariate Linear Regression Analyses, covarying age, gender, education and stage of cancer.

RESULTS

• Bivariate Correlation: Negative affect was significantly associated with poor social and physical functioning and general health, and increased pain and role limitations. Positive affect was associated with improved social functioning and general health, and with less pain and emotional role limitations. Positive and negative affect were moderately correlated (-.37).
• Univariate Regression: Negative affect significantly predicted poorer physical functioning, role limitations due to emotional problems, difficulties with social functioning, bodily pain, and poor general health.
• Univariate Regression: Positive affect significantly predicted less emotion-based role limitations, better social functioning and general health, and less pain.
• Multivariate Regression: Over and above the effects of covariates and negative affect, positive affect was associated with better social functioning and perceived general health and, potentially, reduced impairment as a result of emotional problems (Trend = .09).
• Stage of cancer was a significant independent predictor of social functioning, general health, and physical role limitations. Age and education were independent predictors of physical functioning.

DISCUSSION

• We found that positive affect is associated with improved health, and negative affect is related to poor health outcomes (Portnoy et al., 1994; Hopwood et al., 2004); these relationships have not been previously examined in lung cancer patients.
• Our findings support past research suggesting that affect contributes to symptom reporting and quality of self-assessed general health (Pressman & Cohen, 2005); this may be due, in part, to the effect of affect on body perception rather than on physiological functioning.
• That positive affect was associated with decreased pain also supports past research (Zautra et al., 2005); positive affect may serve as a psychological “distractor” and may also be related to the release of endogenous opioids.
• Positive affect is not a panacea; its benefits are limited. In overabundance, positive affect may result in reduced survival (Devins et al., 1990). In advanced disease, positive affect may be of little psychological solace, perhaps providing greater benefit to patients with longer-term life expectancy (Pressman & Cohen, 2005).

LIMITATIONS

• Cross-sectional data preclude the ability to examine causal associations between affect and health outcomes; prospective research is needed.
• Bi-directionality may be of concern; health and medical dysfunction may have a negative effect on positive emotions and cognitions.
• Although a strength, our use of a lung cancer patient sample limits generalizability; future research should utilize additional medical and clinical samples.

IMPLICATIONS

• Brief, targeted interventions aimed at promoting positive cognitive-emotional functioning may improve health and pain tolerance, and reduce role impairment in lung cancer patients, despite the presence of negative affect that may also be present. Reduction of negative affect remains an important therapeutic goal.
• Encouragement of goal-setting and attainment, promotion of intergenerational relationships, and prescription of mood-enhancing activities may “broaden and build” emotional well-being (Fredrickson, 2004).