Lung cancer has the highest mortality rate of any cancer in the United States, and is increasing in developed countries throughout the world. Lung cancer is typically diagnosed at stage III or IV due to presentation of non-specific symptoms and a lack of awareness by patients and providers alike. However, diagnosis at stage I or II significantly increases one’s survival rate. Screening for lung cancer is difficult with tests that are expensive, potentially harmful, or ineffective.

Overarching research question: How can lung cancer be detected earlier in primary care settings?

**STUDY ONE: QUALITATIVE**

**Purpose:** Explore critical influences in the delayed diagnosis of lung cancer

**Research questions:**
- What is the process a person undergoes from recognition of an initial change in health to receipt of a diagnosis of lung cancer?
- What are the characteristics of participants’ functional presentation prior to receiving a diagnosis of lung cancer?
- What factors contribute to a delayed lung cancer diagnosis?

**Case study design**
- Holistic approach
- Interview people diagnosed with stage III/IV lung cancer
- Examine medical records
- Interview family members
- Photographs
- Goal is to map trajectory of events through functional decline
- Data coding: Depression, neuropathy, self-medication, participation in basic activities of daily living, and participation in instrumental activities of daily living

**STUDY TWO: QUANTITATIVE**

**Purpose:** Examine and identify barriers to recommending low dose computed tomography lung cancer screenings in order to promote screening in rural and/or underserved populations.

**Research questions:**
- What are the perceived barriers of primary care providers practicing in Alaska to diagnosing patients with lung cancer?
- What are the perceived barriers to LDCT screening?
- What is the utilization of LDCT screening in Alaska after the USPSTF guideline was published?

**Procedures:**
- Data from American Cancer Society/State of Alaska
- Regression discontinuity design
- Analyze difference in LDCT lung cancer screening performed prior to recommendation in 2013 compared to after recommendation
- Follow-up with survey to primary care providers in Alaska to assess/identify their perceptions of barriers to lung cancer diagnostics

**STUDY THREE: QUANTITATIVE**

**Purpose:** Determine if tracking certain biomarkers, such as weight and hemoglobin levels, provides the opportunity to investigate illness earlier.

**Research questions:**
- Is there an observable pattern of hemoglobin decline in people prior to receipt of a lung cancer diagnosis?
- Does monitoring weight provide an opportunity to diagnose lung cancer earlier?

**Procedures:**
- Utilize opportunity to partner with University of Washington to analyze biological data of people with known lung cancer
- Create locally weighted scatterplot

**THEORY AND FRAMEWORK**

**Philosophical foundation:**
- Constructivism

**Theories applied to research:**
- Health Belief Model
- Occupational Therapy Practice Framework
- Andersen Model of Total Patient Delay
- Biopsychosocial Model

**Assumptions:**
- People construct their own reality
- Less engagement in physical inactivity may be a sign of lung cancer
- Each aspect within a person’s biopsychosocial existence may promote or prevent the early detection of lung cancer

**LITERATURE CITED**


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