Lung Cancer Screening: Identifying Factors Associated with Participation

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Abstract:

Lung cancer screening is a recent recommendation and new screening programs are currently being implemented. However, we do not yet know what factors influence screening-eligible smokers to screen. Smokers are a unique population and psychological variables (stigma, medical mistrust, cancer fatalism, worry, and fear) may be important and have very different relationships in lung cancer screening participation than participation in other types of cancer screening.

The **purpose** of this mixed methods study is to develop an explanatory framework for lung cancer screening participation from the perspective of the individual to inform future patient-level tailored interventions through testing a model of factors related to screening. ***Specific aims*** include: 1) test the relationships among variables depicted in the conceptual model for lung cancer screening participation using structural equation modeling including mediation effects in a sample of screening-eligible long-term current and former smokers; 2) provide robust descriptions of factors that influence lung cancer screening and elucidate the relationships among the factors based on in-depth narratives of screening-eligible smokers; and 3) integrate findings drawn from both survey and narrative data to inform patient-level tailored intervention development.

Study design: Sequential explanatory mixed methods design using survey methods and individual interviews.

Measures: Quantitative self-reported data will be collected via a web-based survey comprised of the following elements: Cataldo Lung Cancer Stigma Smoking Subscale, Patient Trust in the Medical Profession Scale, Revised Powe Fatalism Scale, Lung Cancer Worry Scale, Lung Cancer Fear Scale, Demographic and Health Status Characteristics Questionnaire (including healthcare provider recommendation, media exposure, and lung cancer screening participation), Knowledge: Lung Cancer and Lung Cancer Screening Scale, Social Influence Scale, and Lung Cancer Screening Health Beliefs Scales. Qualitative data will be collected via audio-taped individual in-depth interviews.

Data analysis: Quantitative data will be analyzed using bivariate analyses between variables in the conceptual model including t-tests, analysis of variance, linear regression, and logistic regression. The entire conceptual model will then be analyzed using path analysis via structural equation modeling. Content analysis and a series of data display tables will be used to analyze data from the in-depth interviews. The integration of qualitative and quantatitive will occur at two time points: (1) quantitative data will be used to develop individual participant profiles in order to selectively sample participants and design interview guides for the in-depth interviews; and (2) the quantitative and qualitative findings will be integrated at the stage of data interpretation. By augmenting quantitative findings with qualitative data, we will generate new knowledge to inform future tailored interventions.