

EPIDEMIOLOGY/PUBLIC HEALTH RESEARCH

Differences in smoking patterns, attitudes, and motives among two-year college and four-year university students

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Two-year college students have higher rates of smoking compared to four-year university students. However, little is known about differences in smoking patterns, attitudes, and motives among these students. We contacted 8,834 undergraduate students at a two-year college and a four-year university in 2008, with 2,700 completing the 108-item online survey (30.6% response rate). Our current analyses focused on the 2,265 undergraduate students aged 18-25. Current (past 30-day) smoking was reported by 43.5% of two-year and 31.9% of four-year college students, and daily smoking was reported by 19.9% of two-year and 8.3% of four-year college students. Among those reporting smoking in the past 30 days, two-year students were less likely to report being “social smokers” than four-year students (46.6% vs. 60.4%). Also, among current smokers, two-year students were also less likely to report being ready to quit smoking in the next 30 days (27.1% vs. 34.7%) and were less confident in their ability to quit ($M=5.98$, $SD=3.79$ vs. $M=7.03$, $SD=3.44$) despite no differences in motivation to quit smoking. Two-year students were also less likely to approve of the state smoking ban in bars (73.7% vs. 80.8%, $p<0.001$) and were less likely to have smoking restrictions in their cars (45.8% vs. 57.1%, $p<0.001$), which held true when examining smokers only. In multivariate analyses controlling for age, gender, ethnicity, and highest parental education, attending a two-year college was associated with higher rates of current smoking ($OR=1.66$, 95% $CI=1.37, 2.01$) and daily smoking ($OR=2.74$, $CI=2.09, 3.58$), and with less negative attitudes regarding smoking ($F(5, 2148) = 17.75$, $p<.001$). Also, compared to four-year college student smokers, two-year college smokers were less likely to smoke for social reasons ($F(5, 773) = 7.79$, $p<.001$), but more likely to smoke for affect regulation ($F(5, 773) = 3.21$, $p<.001$), after controlling for age, gender, ethnicity, and parental education. Given these results, two- and four-year college students differ in their smoking patterns, attitudes, and motives. These distinctions should inform tobacco control messages and interventions targeting young adult smoking.

Lung Cancer Burden in Georgia by Age, Race, and Rural/Non-Rural Residence: Preliminary Analyses

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Cancer is a disease of aging and lung cancer is no exception. In 2008, 10.1% of people residing in Georgia are age 65 and over. However, the population of Georgia and the world is rapidly aging, so cancers affecting older adults will likely increase in the next several decades. Race is also associated with variance in cancer rates due to genetic predisposition, environmental factors and/or lifestyles. Residence in urban or rural areas may determine healthcare access, thereby influencing stage of diagnosis, treatment and ultimately mortality. This study examines the burden of lung cancer incidence and mortality in Georgia as related to age, race and urban/rural residence.

Two data sources were used in this study: 1998-2005 Georgia Comprehensive Cancer Registry data and Georgia Vital Statistics records. As expected, we found a dramatic increase in lung cancer incidence in people age 60-plus compared to those aged 21-59. Age-adjusted incidence rates of cancer in black men and white men were comparable, while white women were approximately 1.5 times more likely to have a lung cancer diagnosis than black women. However, blacks were more likely to be diagnosed at a later stage than whites, thereby affecting treatment options and outcome. Conversely, the age-adjusted mortality rate for whites living in rural areas was 11% higher than those living in non-rural areas, while rural/non-rural residence had negligible impact on black mortality rates. Details of these findings and implications for further research are discussed.

Physician Recommended Colorectal Cancer Screening more likely for Whites than Blacks irrespective of gender, education, insurance and income levels based on the National Health Interview Survey (NHIS) data.

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Background: Previous studies have suggested a possible relationship between ethnicity and cancer screening rates, but they did not examine race as the primary predictor of physician recommended screening. All adults over 50, irrespective of gender and ethnicity, should be screened for colorectal cancer. However, with physicians being aware that Blacks are more likely than Whites to develop and die from colorectal cancer, one might expect that they would be more likely to strongly recommend screening for the higher risk Blacks to help reduce health disparities. The purpose of this study was to determine whether this is so.

METHODS: We analyzed data from the 2005 National Health Interview Survey (NHIS). A total of 12,729 adults aged 50 to 84 were included in the analyses.

RESULTS: Among U.S. adults aged 50 to 84, Whites were more likely than Blacks to report receiving a physician recommendation to undergo colorectal cancer screening. This association persisted after adjusting for other socioeconomic and health-related factors (OR 0.61, 95% CI 0.53 - 0.71).

CONCLUSION: Since most individuals who undergo colorectal cancer screening report that physician recommendation was their primary reason for doing so, this racial disparity will likely persist unless physicians make an effort to increase their screening recommendations in the high risk Black population.

LAKE ONTARIO SPORT-CAUGHT FISH CONSUMPTION AND BREAST CANCER RISK IN THE NEW YORK STATE ANGLER COHORT STUDY (NYSACS)

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Sport fish are an important source of exposure to many persistent organic pollutants, some of which may be associated with breast cancer risk. We examined L. Ontario sport fish consumption and the incidence of breast cancer in the NYSACS, a prospective cohort of licensed anglers (n=11,431) and their spouses (n=6,645) from New York State. In 1991, cohort members completed a self-administered questionnaire inquiring about and lifetime consumption of sport-caught fish from L. Ontario. First primary incident breast cancer cases were identified through linkage with the New York State Cancer Registry, 1991-2006. Included in this analysis were women (n=6,285) who completed the baseline questionnaire. Hazard ratios (HRs) and 95% confidence intervals (95% CI) were estimated using Cox proportional hazards models adjusted for age, education, income, parity, and recent live births. Preliminary analyses suggest there may be an association between number of years of sport-fish consumption and the risk of breast cancer in the NYSACS (p for trend, 5 year lag=.02). However, the interpretation of these findings are complicated by the lack of a monotonic exposure-response gradient. Species specific analyses indicate that consuming Chinook salmon and catfish may increase breast cancer risk (HRs ~2). These results should be interpreted with caution due to the potential for exposure misclassification. Additional follow-up and analyses are ongoing to assist in clarifying these findings.

Evaluation of a new initiative in the Avon Foundation Community Education and Outreach Community Patient Navigation Program

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Background: Black women in the United States experience disproportionate breast cancer mortality. This phenomenon may be due in part to delays in diagnosis and delays in the initiation of treatment. Culturally-appropriate community education on breast health coupled with the availability of low cost mammography screening services may help improve the use of mammography screening services. The Avon Foundation/Georgia Cancer Coalition Community Patient Navigation Program delivers community education and helps individuals overcome financial barriers to mammography screening. This study presents a process and outcome evaluation of a newly implemented initiative.

Methods: As a newly implemented initiative in 2008, participants were referred to a nurse practitioner who determined eligibility for a free or low-cost mammogram. Process evaluation data were gathered via monthly tracking forms submitted by Community Patient Navigators (CPNs).

Results: For the study period August 18, 2008-July 31, 2009, a total of 335 breast health presentations and exhibits were hosted by CPNs reaching approximately 13,000 community members. Three hundred ninety-three (393) women were screened at these events; the initiative was successful in scheduling and ensuring mammography screening for 60 (15%) women who expressed interest. The program has worked towards continued improvement in compliance with follow-up mammography for clients who were screened.

Conclusions: CPNs are a useful resource for encouraging mammography screening among underserved women. The program has documented improvement in adherence to mammography referral and screening, and we are currently in the process of implementing other strategies to further grow this new initiative in our program.

Transportation barriers to mammography screening clinics in the Atlanta, Georgia metropolitan area

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Many studies have described distance as a barrier to breast cancer screening and treatment for rural areas. However, less is known about time and distance as a barrier to mammography facilities in urban areas where many women are dependent upon public transportation for access to care. Using GIS methods, we examined spatial and temporal accessibility to mammography facilities for residents living in economically disadvantaged areas in two Atlanta, Georgia metropolitan area counties.

Census 2000 data was used to characterize census tracts with economically disadvantaged female populations. Dasymetric mapping techniques were used to create weighted population centroids within the census tracts and to eliminate zones of zero population. A multimodal transportation network was built to calculate travel times and distance from each centroid to the nearest mammography facility. We compared travel times of census tracts in which women are more likely to use public transportation to tracts in more affluent areas in which women are more likely to use private transportation.

Preliminary results show transportation time may pose a barrier to mammography screening for economically disadvantaged women in Atlanta. There is a strong correlation ($r=0.912$) between poverty and no private vehicle availability. This suggests that impoverished women must rely on public transportation for access to mammography clinics. Using GIS, we will geographically describe time and distance barriers to facilities by levels of poverty as well as by race and ethnicity. These results will be useful in determining new locations for facilities to better serve low-income women who depend on public transportation.

Groundwater Uranium and Cancer Incidence in the Southeast

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Background and Objective. Uranium is a naturally occurring alpha-emitting radionuclide with carcinogenic and nephrotoxic properties. South Carolina is a rural state with significant racial health disparities, extensive groundwater use, and elevated groundwater uranium in some regions.

Methods. Counts of incident cancer (total, leukemia, prostate, breast, colorectal, kidney, bladder, 1996-2005), were aggregated among census tracts with high groundwater use. Aggregate demographic data were obtained from the 1990 census. Groundwater uranium concentrations (N=4,600) were obtained from existing federal and state databases. Ordinary kriging was used to smooth exposure data. Linear and semiparametric regression were used to model the relationship between groundwater use, groundwater concentrations, and cancer incidence together and stratified by race.

Results. A total of 134,685 total cancer cases were identified. Two percent of samples had a concentration above the MCL of 30 µg/L. Census tracts with both elevated groundwater consumption and elevated groundwater uranium concentrations had increased rates of colorectal, breast, and kidney/renal pelvic cancer, especially tracts populated primarily by African Americans (all $p < 0.05$ for low versus high exposure quartiles). A statistically significant relationship between groundwater uranium levels and increased risk of total cancers ($p < 0.05$ for highest exposure quartile) and prostate cancer ($p < 0.05$ for highest exposure quartile) was found for census tracts populated primarily by European Americans.

Conclusion. Results from this analysis suggest an association between elevated groundwater uranium concentrations and increased colorectal, female breast, and kidney/renal pelvic cancer incidence. Moreover, African-American individuals may be most affected by these exposures. An extension of this project using Georgia data is underway.

Reproductive Health in Oncologic Care

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Background: Over 692,000 women are newly diagnosed with cancer each year. Ten percent of these newly diagnosed women are of reproductive age (15 and 49 yrs). Recently, fertility preservation for young cancer survivors has obtained research and public interest. Uncertainties regarding future fertility, pregnancy, and cancer survival are challenging for the patient and cancer team. Evaluation and treatment of cancer must include an assessment of goals for fertility and family planning in order to optimize the patients' cancer treatment and her future reproductive health goals. This study will provide multifaceted data to provide better insight into this largely unexplored area of research.

Methods: The primary objective of this study is to evaluate the success of implementation of reproductive health programming. Upon eligibility and informed consent, the initial patient and follow-up assessment will include a Patient Survey and Data Form, Reproductive Health Contraceptive Assessment, and Sexual Function Satisfaction Survey. Eligibility criteria include: female patient, age 18-55, any form of cancer, and evidence of ovarian function (represented by menstruation). Exclusion: Male patients, post-menopausal patients, no longer menstruating, age <18 or >55, and hysterectomy.

Results: Available upon study completion.

Conclusion: This study should aid clinicians navigating through the issues of reproductive health in the context of cancer care. In addition, the study should identify clinical, demographic, healthcare delivery, and socioeconomic factors concerning adequacy of reproductive health management in order to develop algorithms. Reproductive health assessment, sexuality surveys, and algorithm implementation will help optimize the achievement of reproductive health objectives of women with cancer.

Cancer in Incidence and Mortality in Georgia, 2002-2006

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Methods: Cancer incidence data (2002-2006) was analyzed using the Georgia Comprehensive Cancer Registry (GCCR) which is a statewide population-based cancer registry collecting data on all cancer cases diagnosed among Georgia residents since January 1, 1995. Cancer mortality data (2002-2006) was analyzed using the Georgia Vital Records data.

Results: It is estimated more than 14,000 cancer deaths will occur and more than 39,000 new cancer cases will be diagnosed in Georgia. The over-all age-adjusted cancer incidence rate in Georgia is 462 per 100,000 for both males and females combined. Males are more likely to be diagnosed with cancer than females (566 vs 392 per 100,000). African Americans are more likely to be diagnosed with cancer than whites (475 vs 469 per 100,000). African American males have the highest age-adjusted cancer incidence rate (639/100,000) when compared to white males (562/100,000), white females (406/100,000) and African American females (374/100,000).

The over-all age-adjusted cancer mortality rate in Georgia is 189 per 100,000 for both males and females combined. Males are more likely to die with cancer than females (244 vs 154 per 100,000). African Americans are more likely to be diagnosed with cancer than whites (217 vs 183 per 100,000). African American males have the highest age-adjusted cancer incidence rate (303/100,000) when compared to white males (233/100,000), African American females (170/100,000), and white females (150/100,000).

Breast Cancer in Incidence and Mortality in Georgia, 2002-2006

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Methods: Cancer incidence data (2002-2006) were analyzed using the Georgia Comprehensive Cancer Registry which is a statewide population-based cancer registry collecting data on all cases diagnosed among Georgia residents since January 1, 1995. Cancer mortality data (2002-2006) were analyzed using the Georgia Vital Records data.

Results: Breast cancer is the leading cause of cancer diagnosed and the second leading cause of cancer death in Georgia women. While white women are more likely to be diagnosed with breast cancer, black women are more likely to die from the disease. Georgia's incidence and mortality rates for breast cancer were lower than the US: Georgia's breast cancer incidence rate was 119 per 100,000 and the mortality rate was 24 per 100,000. For the same time period, the US breast cancer incidence rate was 122 per 100,000 and the mortality rate was 25 per 100,000. Georgia women living in urban counties in Georgia have higher rate of breast cancer than those living in rural counties. Incidence rate for white women is higher than for black women, however black mortality rates are higher despite stratifying by urban status. The majority (68%) of breast cancer is diagnosed at an early stage while 30% is diagnosed at a late stage. Of the 4% diagnosed at a distant stage, black women were more likely to be diagnosed at distant stage.

Augmenting Georgia Cancer Registry Data To Support Cancer Quality-of-Care Assessment and Comparative Effectiveness Research

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This project is intended to lay the groundwork for an integrated, sustainable Georgia Cancer Data System to support quality-of-care (QOC) assessment and comparative effectiveness research (CER). Over the long term, such a data system would support a variety of cancer treatment, screening, and prevention studies in Georgia. Specifically, the project will augment the Georgia Comprehensive Cancer Registry (GCCR) with data from multiple public and private sources: Medicare, Medicaid, and several large private payers, including Kaiser Permanente of Georgia, that collectively cover all employees of the State of Georgia. First, the GCCR will be linked to each of the major payer sources to produce “bilateral” linked, de-identified data sets that, individually, can effectively support QOC and CER studies. Then a Consolidated Cancer Data Resource (alpha version) will be constructed in a way that draws jointly from *all* of these public and private data sources to support population-representative QOC and CER. In addition, a variety of other secondary data sources will be used to link each patient with the characteristics of the hospital(s) and physician(s) providing cancer care. These various linked, de-identified data bases will be applied initially to QOC assessment in breast cancer and colorectal cancer in Georgia over 2000-2005. The project is currently supported by a grant to Emory University from the U.S. Centers for Disease Control and Prevention and the Association of Schools of Public Health, with funding from the National Cancer Institute and the Georgia Cancer Coalition and administrative assistance from the Georgia Department of Community Health.

COMPARISON OF GLEASON SCORES REPORTED AT DIAGNOSIS TO THOSE ASSIGNED BY EXPERT REVIEW

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BACKGROUND: Gleason score is a primary indicator of prostate cancer prognosis, and a major factor that is considered in selecting appropriate treatment. For these reasons, and because Surveillance Epidemiology and End Results (SEER) registries began collecting Gleason score information in 2004, it is important to examine the accuracy of prostatectomy and biopsy-derived Gleason scores.

METHODS: The study population included persons diagnosed with prostate cancer from January 1, 2004 through December 31, 2005, and residing in metropolitan Atlanta or rural Georgia. The de-identified pathology slides of approximately 300 eligible cases were scanned to create digital images, which were then re-examined to assess the agreement between the Gleason scores assigned at the original diagnosis and the Gleason scores assigned by an expert urologic pathologist specializing in prostate cancer.

RESULTS: A total of 195 biopsy specimens and 99 prostatectomy specimens were retrieved, scanned and reviewed by an expert pathologist. A comparison of the original Gleason score diagnosis (dichotomized as <7 versus ≥ 7) to that assigned by an expert pathologist (gold standard) demonstrated the sensitivity and specificity of 0.75 and 0.86, respectively. The corresponding sensitivity and specificity for prostatectomy samples were both 0.77. There was little evidence that certain socioeconomic or demographic patient characteristics were associated with a discernable increase or decrease in the agreement between pathology reports and expert reviews.

IMPLICATIONS: This study demonstrates the feasibility of linking registry data to pathology images and helps determine frequency and extent of misclassification of biopsy- and prostatectomy-derived prostate cancer Gleason scores reported to SEER.