

# Community-based Research Education in Eastern Kentucky

## CREEK: Student Research



### CREEK Mission

The mission of CREEK is to build the capacity of rural peoples and communities to overcome individual and structural barriers to attaining individual and community health and wellness. The mission is accomplished through education of rural community-based researchers and dissemination of research results to communities and others.



**Characteristics of ADHD, Access to Health Care and Impact of School and Community Involvement on Rule and Law Breaking Among Adolescents in Rural Areas**  
Cindy Glass

**Purpose:** The purpose of this study is to compare self-reported rule and law breaking between adolescents who do and do not report having a medical diagnosis or behavior suggestive of Attention Deficit Hyperactivity Disorder, to explore whether students who are actively engaged in school or community activities have lower levels of rule and law breaking behavior than those who are not actively involved, to determine if youth in rural areas report having ADHD at the same rate that is found in national samples, to determine if students who report having ADHD encounter discrimination, and to determine if these students have access to health services for ADHD.

**Method:** The author developed a 23-question survey designed to address the study questions. Invitations to participate in the survey were distributed to every 10th grade student in a rural county of Northeastern Kentucky in the late fall of 2008. The University-approved study protocol required signed parental consent for the students to participate. Of the 410 invitations distributed, a total of 78 parents gave permission for their children to participate in the study. On the dates of data collection in early 2009, 73 students were available to complete the survey.

**Results:** Data will be summarized using frequencies and cross-tabulations. Initial data analysis indicates that the ADHD group shows higher levels of rule and law breaking and less extracurricular involvement than their peers who do not share the characteristics of ADHD. Additionally, students in the ADHD group have lower GPAs than students without the characteristics of ADHD. The rate of ADHD is consistent with national averages. Access to health services for ADHD may be limited by ability to pay for services and by stereotypes surrounding individuals with characteristics of ADHD.

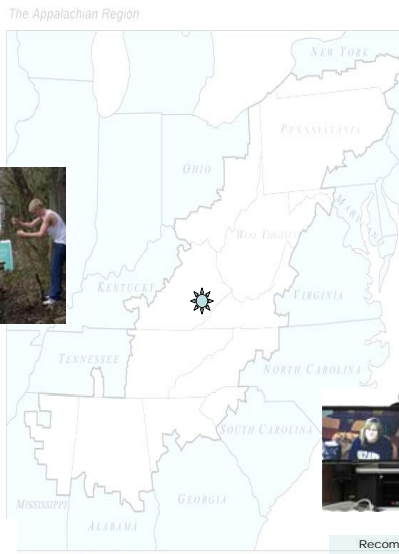
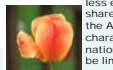
**Conclusions:** The results of the survey will be distributed to the participating high schools with the hope that the information will be used to address the needs of children who demonstrate the characteristics of ADHD. Goals could include reducing levels of rule and law breaking, mentoring and tutoring for higher levels of academic success, greater integration into school activities, and helping families understand ADHD and obtain health services for ADHD.

**Osteoporosis Awareness: A Comparison Between Pre and Post Menopausal Women**  
Autumn May, Heather Sumner, and Stephanie L. Jones

**Purpose:** To explore whether osteoporosis awareness is associated with age, education and/or menopause in a sample of rural Appalachian women.

**Method:** The authors of this study developed a 26 item survey to collect demographic information and to assess knowledge of osteoporosis risk factors, prevention strategies, and physical activity patterns. Surveys will be distributed by clinic personnel to adult female patients seeking care at a rural community health center. Patients will put their completed, anonymous questionnaires in a sealed box in the clinic. Surveys will be collected for a period of 6 months from March, 2009 through August, 2009 or until 250 completed surveys have been obtained.

**Results:** Data from the study will be analyzed using descriptive statistics, t-tests, chi square analyses, and multivariate statistics.  
**Conclusion:** Conclusions can be drawn after data are collected and analyzed. The study will contribute to the prevention of osteoporosis by identifying behavior patterns that may increase risk among a population with health disparities related to poverty and low educational attainment. Information from the study will be applied to patient education practices and prevention efforts in rural Appalachian health care settings.



Pathfinders of Perry County was established by the CREEK Clearinghouse and serves as a model of community collaboration to research and promote health behaviors, in this case, walking. Girl scouts are working with Pathfinders to develop the Riverside International Peace Garden and Walking Path.



**Recommendations for Colorectal Cancer Screening Among 49 Appalachian Eastern Kentucky Primary Care Practices: Controlling for Structural Aspects of Space**  
George F. Bills

**Purpose:** The purpose of this study is to explore geospatial influences on referral patterns for colorectal screening. Originally, researchers intended to use a readiness to change measure to describe compliance by physicians with recommended colorectal cancer screening practices. Difficulty accessing an independent sample of physicians across the region left researchers with a convenience sample of practices. This paper utilizes social network analysis (SNA) to organize data as an interdependent network sample. It also uses SNA sort out issues of spatial autocorrelation that could reduce the value of the data for analysis. Distance has been known to be a problem in making referrals for cancer screening in mountainous areas in rural Appalachia, but distance alone may not explain physician and patient behavior with respect to this screening procedure. This study sought to examine how proximity to certain features of regional infrastructure impact decisions to refer as well. Practices were modeled based on their relationships to Area Development Districts and significant roadways in the region to understand how centrality to the network of practices impacted referral rates.

**Method:** I used a normalized measure of closeness centrality to explore how colorectal cancer screening recommendations within a network of regional medical practices in Appalachian Eastern Kentucky are related to the relative location of those practices to one another and to linear distance between the practices. A variation of the Quadratic Assignment Procedure (QAP) (Krackhardt, 1987; Dekker, D., Krackhardt, D., & Snijders, T. A. B., 2003b) was used to test hypotheses concerning the probability of referrals given a practice's centrality in the regional network of practices. Closeness centrality can be thought of as an index of the expected time of arrival of something flowing through a network (Borgatti & Everett, 1995; Borgatti & Everett, 2005).

**Results:** Controlling for proximity to significant roadways and location in Area Development Districts, closeness centrality normalized to 66 miles was statistically significant at  $p = 0.001$ .

**Conclusions:** In the context of recommendations for colorectal cancer screening, closeness centrality appears to be a reasonable proxy for local common sense understandings about how long it takes for someone or something to get from one site to another within the region. Physicians and patients are likely to share these commonsense understandings to the extent that they are members of the same community. Closeness centrality points to how these common sense explanations affect physician decisions to refer and may affect patient decisions about whether to act on the referral. It is possible that a measure that would take travel time and/or road characteristics into account also would improve the performance of this measure. Closeness centrality shows promise as a possible method to predict the likelihood of physician and patient compliance with referral recommendations. The current measure of closeness centrality or an improved one may be of benefit in program evaluation research.

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