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Biostatistics, Epidemiology, and Environmental Health Sciences Department News

Georgia Southern University

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Following the latest update of cervical cancer screening guidelines in 2012, the researchers estimated the prevalence of guideline adherent cervical cancer screening and examined its associated factors among a nationally representative sample of US women aged 21–65 years.

The study was based on cross-sectional data from Cycles 3 (2013) and 4 (2014) of the Health Information National Trends Survey. The final analytic sample consisted of 2822 women. Guideline adherent cervical cancer screening was defined as having a Pap test within the last 3 years. Correlates of guideline adherent cervical cancer screening included socio-demographic and health-related characteristics and HPV/cervical cancer-related beliefs and knowledge items. Multivariable logistic regression analyses were used to estimate prevalence of guideline adherent screening. An estimated 81.3% of women aged 21–65 years reported being screened for cervical cancer within the last 3 years. Controlling for sociodemographic and health-related characteristics and survey year, women aged 46–65 years were less likely to be guideline adherent than those aged 21–30 years (aPR = 0.89; 95% CI 0.82–0.97). The adjusted prevalence of adherence was significantly higher among married/partnered than among not married women (aPR = 1.13; 95% CI 1.05–1.22), and those with one to three medical visits (aPR = 1.30; 95% CI 1.14–1.48), and four or more visits in the past year (aPR = 1.26; 95% CI 1.09–1.45) compared to those with no medical visits. Differences in unadjusted prevalence of guideline adherent screening depending on women’s beliefs and knowledge about HPV and cervical cancer were not significant in adjusted analyses. Lack of interaction with a healthcare provider, being not married/partnered and increasing age continue to be risk factors of foregoing guideline adherent cervical cancer screening.


Dr. Yelena N. Tarasenko, Associate Professor, Jiann-Ping Hsu College of Public Health (JPHCOPH) Georgia Southern University, co-authored this study with Dr. John S. Luque, former JPHCOPH faculty member who is now at the Institute of Public Health, Florida A&M University; and Dr. Chen Chen, JPHCOPH alumnus, who is now at the College of Nursing and Health Professions, University of Southern Indiana.
Georgia Southern looked at a more efficient sampling method of recruiting subjects for survival analysis.

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Survival data are time-to-event data, such as time to death, time to appearance of a tumor, or time to recurrence of a disease. Accelerated failure time (AFT) models provide a linear relationship between the log of the failure time and covariates that affect the expected time to failure by contracting or expanding the time scale. The AFT model has intensive application in the field of social, medical, behavioral, and public health sciences. In this article we propose a more efficient sampling method of recruiting subjects for survival analysis. We propose using a Moving Extreme Ranked Set Sampling (MERSS) or an Extreme Ranked Set Sampling (ERSS) scheme with ranking based on an easy-to-evaluate baseline auxiliary variable known to be associated with survival time. This article demonstrates that these approaches provide a more powerful testing procedure, as well as a more efficient estimate of hazard ratio, than that based on simple random sampling (SRS). Theoretical derivation and simulation studies are provided. The Iowa 65+ Rural Health Study data are used to illustrate the methods developed in this article.

“Reducing sample size needed for accelerated failure time model using more efficient sampling methods” was recently published in The Journal of Primary Prevention.

Jiann-Ping Hsu College of Public Health, Georgia Southern University professors, Dr. Hani M. Samawi, Haresh Rochani, Dr. Jingling Yin and Dr. Lili Yu co-authored this paper with Dr. Amal Helu, Department of Mathematical Sciences, University of Jordan, Amman, Jordan.

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