Center for Public Health Systems Science

GEORGE WARREN BROWN SCHOOL OF SOCIAL WORK

MFH Missouri Foundation for Health

Defining "Rural": Implications for Tobacco Control

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BACKGROUND

During work on a report about tobacco-related disparities, the Center for Public Health Systems Science and Missouri Foundation for Health considered several different options for classifying Missouri geographic areas as rural, urban, and everything in between. We quickly learned that there is no universal definition for the term "rural".

Rural residents are often a focus of tobacco control programs, policies, and research. Given this priority, the tobacco control community should fully understand the varying definitions of rural. They must also consider how the application of different definitions may influence evaluation and research results.

Purpose

The purpose of this poster is to illustrate, through two examples, that different definitions of rural can lead to different results.

METHODS

We utilized data from the 2007 Missouri County-Level Study (CLS). Between February 2007 and April 2008, landline telephone interviews were conducted with 49,513 Missouri adults. More information about the CLS is available at http://health.mo.gov/data/cls.

We examined descriptive results of several tobacco-related variables using two definitions of rural: the dichotomous definition from the CLS and a rural-urban continuum definition.

Rural Definitions

Missouri County-Level Study

State urban stratification was derived from "yes" responses to "Do you live in the city limits of Columbia, St. Joseph, Jefferson City, Kansas City, Springfield, Joplin, or St. Louis?" that was asked of respondents in Boone, Buchanan, Cole, Clay, Jackson, Platte, Greene, Jasper, Newton, and St. Louis County and City. State rural stratification was derived from "no" responses to the city limit question, and from all respondents in the state not asked the city limit question.

Rural-Urban Continuum Codes (RUCC)

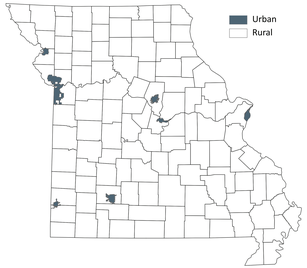
This classification system was developed by the U.S. Department of Agriculture's Economic Research Service. Codes distinguish Metropolitan and Micropolitan counties (as defined by the U.S. Office of Budget Management) by their population size and proximity to metro areas. Using these codes, we classified counties as:

- Urban: metropolitan county
- Large Rural: nonmetro county with an urban population of 20,000 or more
- Small Rural: nonmetro county with an urban population of 2,500 to 19,999
- Isolated: nonmetro county with an urban population of less than 2,500

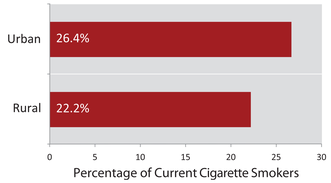
TWO DEFINITIONS, TWO RESULTS

Survey Definition Results

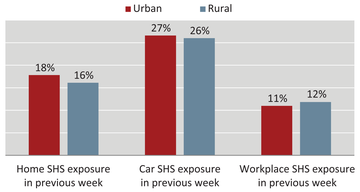
Rural-Urban Classification



Smoking Prevalence

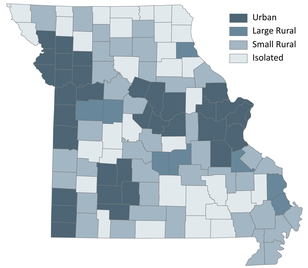


Secondhand Smoke Exposure

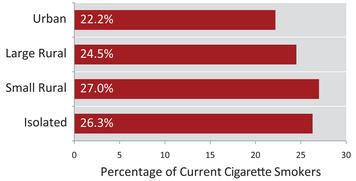


Rural-Urban Continuum Definition Results

Rural-Urban Classification



Smoking Prevalence



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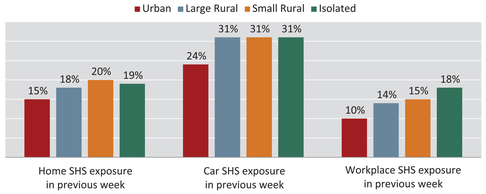

CONCLUSIONS

This poster displays results of descriptive analyses of two tobacco-related variables from the 2007 Missouri CLS using two different definitions of rural to classify the geographic location of respondents. The results are completely opposite, depending on the definition applied:

- Survey (Dichotomous) Definition: Rural areas have a *lower* smoking prevalence and secondhand smoke exposure in the home and car, compared to the urban areas.
- Rural-Urban Continuum Definition: Rural areas have a *higher* smoking prevalence and secondhand smoke exposure in the home, car, and workplace, compared to the urban areas.

The different definitions of rural used in these examples resulted in dramatically different conclusions about geographic-based disparities of smoking prevalence and secondhand smoke exposure in Missouri. The dichotomous definition from the CLS survey was helpful in identifying tobacco-related disparities between the urban cores and the rest of Missouri, however it did not account for areas that were in close proximity to a metropolitan area. The rural-urban continuum definition allowed us to look beyond the urban cores and distinguish between different levels of rurality.

RECOMMENDATIONS

There is no one, universal or perfect definition of rural, and different definitions can result in different conclusions. Researchers and evaluators should be aware of the various definitions of rural available to them and be deliberate when choosing a definition appropriate for their purpose, carefully weighing the pros and cons of each option. Experts on this topic offer several key considerations in choosing among rural definitions[1]:

- What are the tobacco control-relevant characteristics of rural people, places, & providers?
- Should the selected rural definition be narrowly targeted or widely inclusive?
- What are the unintended consequences of relying on commonly used, easily understood definitions, such as those for nonmetropolitan counties?
- How will the tobacco control effort deal with changes in areas designated as rural?
- Are data available to support the use of the rural definition?

[1]Coburn AF, MacKinney AC, McBride TD, et al. (2007). *Choosing Rural Definitions: Implications for Health Policy*. Rural Policy Research Institute Health Panel. Retrieved December 1, 2010, from http://www.rupri.org/Forms/RuralDefinitionsBrief.pdf

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