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Article

Disparities in individual health behaviors between medicaid expanding and non-expanding states in the U.S.☆

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ABSTRACT

Following the roll out of the Affordable Care Act, a significant amount of research has focused on health insurance coverage disadvantages experienced by those in states that chose not to expand Medicaid. This line of research has been used as a way to conceptualize potential disparities in future population health outcomes between states that did and did not expand Medicaid. While health insurance is certainly associated with health outcomes, health behaviors are equally, if not more, important. Therefore, to understand potential future population health outcomes - or lack thereof – this paper examines whether adults in states that did not expand Medicaid are also more likely to engage in health damaging behaviors (i.e. smoking, heavy drinking, physical inactivity, and overweight and obesity) than adults in states that expanded Medicaid. I find that those in states that did not expand Medicaid are more likely to be overweight and obese but are less likely to drink heavily compared to adults in states that did expand Medicaid. In part, higher rates of demographic and socioeconomic disadvantage explain higher rates of health damaging behaviors in states that did not expand Medicaid. This paper raises concerns about added long term consequences for population health and growing health disparities between states that did and did not expand Medicaid. Policy and practice implications of these findings are discussed.

1. Introduction

Following the roll out of the Affordable Care Act (ACA), a significant amount of research focused on variation in health insurance status outcomes as a way to conceptualize potential variation in future population health outcomes (Sommers, Maylone, Blendon, Orav, & Epstein, 2017). In particular, states that expanded Medicaid experienced significantly larger improvements in coverage rates than did states that did not expand Medicaid (Rhubart, 2016), raising serious population health concerns about diverging destinies for states that did and did not expand Medicaid. While researchers hypothesize that states that expanded Medicaid will likely experience better population health outcomes than states that did not expand Medicaid, little attention has been paid to if significant differences in other determinants of health (i.e. health damaging behaviors) exist between states that did and did not expand Medicaid.

This paper aims to 1) examine how health behaviors vary between states that did and did not expand Medicaid and 2) how these differences might be explained by individual-level proximate determinants. The findings show that adults in states that did not expand Medicaid are at significantly higher risk of being overweight or obese, but these disparities are in part explained by higher rates of demographic and socioeconomic disadvantage in non-expansion states. To the author's knowledge, this is the first study to use nationally representative data to show disparities in health damaging behaviors between expansion and non-expansion states. As debates around health care reform continue to center on access to care, this research broadens the discussion for population health research around compounding health disadvantages in states that chose not to expand Medicaid. This paper raises important population health and policy concerns about the lack of attention to some of the strongest predictors of health outcomes (i.e. health damaging behaviors) and how they vary across Medicaid expansion status.

1.1. Medicaid expansion

Health insurance is a predictor of positive population health outcomes (Finkelstein, Taubman, & Wright, 2012, McWilliams, 2009, Hadley, 2003, Hadley, 2007). The Affordable Care Act was meant to level the playing field in access to insurance. In particular, the Medicaid expansion component of the ACA was designed to expand access to Medicaid for families and childless adults who fell below 138 percent of the Federal Poverty Line. However, following the Supreme Court's

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ruling in *National Federation of Independent Business v. Sebelius* in 2012, states could choose not to participate in the Medicaid expansion component of the ACA. By the end of 2016, 20 states had not expanded Medicaid. Research has shown that while health insurance coverage increased overall following the initial implementation of the ACA, improvements were significantly smaller in states that chose not to expand Medicaid (Rhubart, 2016). Researchers argue that with lower access to affordable care, non-expanding states will risk experiencing poorer long term population health outcomes (e.g. Moreno-Serra & Smith, 2012).

1.2. Consequences of health damaging behaviors

Hypotheses about future population health outcomes that rely solely on health insurance are problematic because health is determined by a number of factors, not solely health insurance coverage (Lantz et al., 1998). These other factors include genetics, individual health behaviors, interpersonal and community-level stressors, and social supports. This paper focuses specifically on health behaviors. Health damaging behaviors can include smoking, physical inactivity, overweight and obesity, and heavy drinking (Braveman, Egerter, & Barclay, 2011, Lantz et al., 1998).

Health behaviors are important to understanding population health disparities as they are empirically linked to multiple health outcomes and can ultimately lead to increased health care costs and premature death. For example, *smoking* is associated with a number adverse health outcomes including acute myeloid leukemia and cancers of the stomach, liver, bladder, cervix, pancreas, kidney, and esophagus (Helms, King, & Ashley, 2017, Sherratt, Field, & Marcus, 2017, HHS, 2014). Stroke, cataracts, coronary heart disease, chronic obstructive pulmonary disease, pneumonia, emphysema, bronchitis, lung cancer, diabetes, cardiovascular disease, immune function issues, and overall diminished health are also more common among smokers (HHS, 2014, Sherratt *et al.* 2017). *Physical inactivity* is associated with chronic diseases such as cardiovascular disease, diabetes, asthma, arthritis, cancer, and hypertension as well as premature death (Warburton, Nicol, & Bredin, 2006, Humphreys, McLeod, & Ruseski, 2014). And those who are *obese* are at higher risk of chronic diseases such as cardiovascular disease, type 2 diabetes, asthma, renal diseases, and certain types of cancers (Lenz, Richter, & Muhlhauser, 2009, Guh, Zhang, Bansback, Amarsi, & Birmingham, 2009). *Heavy drinking* is also linked to a number of diseases, including tuberculosis, depression, liver cirrhosis and pancreatitis, certain types of cancers, as well as unintentional injuries (Rehm, Samokhvalov, & Neuman, 2009, Boden & Fergusson, 2011, Rehm, Taylor, & Mohapatra, 2010, Irving, Samokhvalov, & Rehm, 2009, Nelson, Jarman, & Rehm, 2013, Cherpitel, 2013). Given the severe and costly health effects of smoking, physical inactivity, overweight and obesity, and heavy drinking, hypotheses about diverging population health destinies of Medicaid expanding and non-expanding states must also account for potential variation in these health damaging behaviors.

1.3. Proximate determinants

While a state's decision whether to expand Medicaid might not inherently impact or explain variation in health behaviors, other characteristics of individuals (i.e. proximate determinants) in states that did not expand Medicaid could be responsible for variation in health behaviors. Proximate determinants - the conditions, opportunities, and resources that an individual has access to - act through health behaviors to influence population health outcomes (Link & Phelan, 1995, Lammle, Woll, Mensink, & Bos, 2013). If, in fact, there is variation in health behaviors between states that did and did not expand Medicaid, then it must be determined whether those differences can be explained by proximate determinants.

Variation in health behaviors exists across several socioeconomic determinants. Smoking (Syamlal, Mazurek, Hendricks, & Jamal, 2015, NCHS, 2016, Barbeau, Kreiger, & Soobader, 2004, NCHS, 2007, De Vogli & Santinello, 2005, Falba, Teng, Sindelar, & Gallo, 2005), obesity (Slack, Myers, Martin, & Heymsfields, 2014, Levine, 2011) and physical inactivity (Marshall et al., 2007, Parks, Housemann, & Brownson, 2003, Braveman et al., 2011) are more common among those with lower measures of socioeconomic status (e.g. unemployed, low-income, and those with lower levels of formal education). Heavy drinking is also more common among lower socioeconomic status groups (Dávalos, Fang, & French, 2012, Cutler and Lleras-Muney, 2010, Huckle, You, & Casswell, 2010). This literature suggests that socioeconomic factors, which unevenly distribute conditions, resources, and opportunities, explain variation in health damaging behaviors.

Health behaviors also vary across demographic proximate determinants (Braveman et al., 2011, Slack et al., 2014). For example, aggregate data show higher rates of smoking among males, younger age groups, and among American Indian/Alaskan Native and multiracial adults (Garrett, Dube, Winder, & Caraballo, 2013). Rates of obesity tend to be highest among middle aged groups (age 40–59), but variation by race and ethnicity is dependent on gender (Ogden, Carroll, Fryar, & Flegal, 2015). For example, among women, obesity is most common among non-Hispanic black and Hispanic women and non-Hispanic white women (Ogden et al., 2015, Slack et al., 2014, Chang, 2006). Physical inactivity levels also tend to vary across demographic proximate determinants with those age 65 and older and Mexican American and non-Hispanic black adults having the highest rates of physical inactivity (Dai et al., 2015, Marshall et al., 2007). These differences in physical inactivity may be attributable to variation in access to environmental resources (e.g. green spaces, parks, pools, etc.) (Powell, Slater, & Chaloupka, 2004, Duncan, Kawachi, White, & Williams, 2013) as well as age induced functional limitations. Finally, heavy drinking is more common for non-Hispanic whites and some racial and ethnic minority groups, but these trends also vary by age and gender (SAMSHA, 2014, Szaflarski, Cubbins, & Ying, 2011, Delker, Brown, & Hasin, 2016, Bryant & Kim, 2012). This previous literature on proximate determinants justifies the need to incorporate socioeconomic and demographic characteristics into any analyses of health behaviors.

2. Materials and methods

2.1. Data and measures

This paper relies on data from the 2016 Behavioral Risk Factors Surveillance System (BRFSS) survey, which is publicly available (Centers for Disease Control, 2017). BRFSS is an ongoing, state-based, telephone survey of adults in all 50 states, the District of Columbia and U.S. territories. The survey collects data on health-risk behaviors, chronic diseases and conditions, among other variables. Pregnant women were excluded from the present analyses, as their BMI and alcohol consumption measures would likely not accurately reflect their regular health behaviors. The sample was also restricted to those age 25 and older because the analyses control for educational attainment. All adults needed to be old enough to have theoretically been able to complete their schooling. While those age 65 and older do tend to have different health behaviors compared to younger cohorts (e.g. Ogden et al., 2015, Dai et al., 2015), this is accounted for by controlling for age. Moreover, those age 55 and older account for over half of all health care expenditures in the U.S. (Sawyer & Sroczynski, 2017). Therefore, including those age 65 and older allows this paper to pursue a more full understanding of adult health behaviors that are associated with deteriorated quality of life, higher health care costs, and shorter life expectancy. In addition, respondents from U.S. territories and those with missing data were also excluded from the analyses. Restricting the dataset based on pregnancy status, age, and missing data resulted in a final dataset containing 179,265 respondents, or 72.8 percent of all respondents from the 50 states and the District of Columbia.

The four health behaviors of interest in this paper include smoking