Social Science & Medicine 182 (2017) 127–135

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Political gender inequality and infant mortality in the United States, 1990–2012

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ARTICLE INFO

Article history:
Received 28 October 2016
Received in revised form
3 April 2017
Accepted 9 April 2017
Available online 14 April 2017

Keywords:
United States
Infant mortality
Gender inequality
Political representation

ABSTRACT

Although gender inequality has been recognized as a crucial factor influencing population health in the developing world, research has not yet thoroughly documented the role it may play in shaping U.S. infant mortality rates (IMRs). This study uses administrative data with fixed-effects and random-effects models to (1) investigate the relationship between political gender inequality in state legislatures and state infant mortality rates in the United States from 1990 to 2012, and (2) project the population level costs associated with women's underrepresentation in 2012. Results indicate that higher percentages of women in state legislatures are associated with reduced IMRs, both between states and within-states over time. According to model predictions, if women were at parity with men in state legislatures, the expected number of infant deaths in the U.S. in 2012 would have been lower by approximately 14.6% (3,478 infant deaths). These findings underscore the importance of women's political representation for population health.

1. Introduction

The United States' infant mortality rate (IMR) is among the highest in the developed world. According to the CDC, the U.S. had an IMR of 6.1 per 1000 live births in 2010, ranking 26th out of the 29 OECD countries (MacDorman et al., 2014). The reasons for the United States' poor performance on this key indicator of population health are not fully understood, but improvements in the IMR have been a national priority for decades. In 2012, the U.S. Department of Health and Human Services began developing the first national strategy to address infant mortality (Lu and Johnson, 2014). The proposed strategy recognizes the importance of addressing the social determinants of maternal and infant outcomes; however, gender inequality (or women's status in society) is notably absent from the list of social determinants considered. This omission likely stems from the fact that research on the health implications of women's status has focused almost exclusively on the less-developed world. The few studies that have examined women's status in the U.S. have found harmful effects of gender inequality in social and economic arrangements on the health of men, women, and children (Chen et al., 2005; Kawachi et al., 1999; Koenen et al., 2006; Yllö, 1984) but have not identified a consistent link between gender inequality in the political domain and infant mortality. Furthermore, all of these studies relied on cross-sectional data. The present study is the first to document the relationship between gender inequality in state legislatures and state infant mortality rates in the U.S. over time.

2. Background

Gender equity has long been recognized as a crucial factor in health, development, and poverty reduction in the developing world (World Bank, 2003). There also is general consensus that

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http://dx.doi.org/10.1016/j.socscimed.2017.04.024
0277-9536/

improving women's social and economic position benefits their children (Heaton, 2015; World Bank, 2003). Several aspects of child well-being– including nutrition, immunization rates, child mortality under age five, and infant mortality– are associated with various measures of women's status (Heaton, 2015; Pratley, 2016; Swiss et al., 2012). In particular, cross-national comparative work focused on the determinants of IMRs in less-developed countries has repeatedly linked higher women's literacy rates and educational attainment to reductions in infant mortality (Boehmer and Williamson, 1996; Caldwell, 1986; Frey and Field, 2000; Shandra et al., 2004; Shen and Williamson, 2001). Some of these studies also identified a negative relationship between women's political empowerment (as measured by parliamentary seats and suffrage rights) and IMRs (Boehmer and Williamson, 1996; Quamruzzaman and Lange, 2016; Swiss et al., 2012). Finally, Boehmer and Williamson (1996) also found that IMRs in less developed countries were associated with a broad overall measure of gender inequality, which reflected women's status across several domains including political, economic, legal, marriage and family, and discrimination.

Although women in the U.S. may not be subject to the same degree of harsh treatment and subordinate status that still plagues women in many parts of the world, the U.S. is far from achieving gender equity. In 2014, the median annual earnings for U.S. women was 78.6% of men's annual earning among full-time year-round workers (Hegewisch and DuMonthier, 2016). In addition to this wage gap, women remain severely underrepresented in leadership positions in business and government. In 2016, U.S. women held only 4.4% of CEO positions at S&P 500 companies (Catalyst, 2016), 19.4% of seats in the U.S. congress, and 24.6% of seats in state legislatures (Center for American Women in Politics, 2016a). If the findings from comparative work in the developing world translate to the U.S. context, we would expect this persistent gender inequality in the U.S. to have implications for infant mortality. Levels of gender inequality vary substantially across U.S. states and may be associated with variation in infant mortality rates.

However, research on this topic in the U.S. has been quite limited. Only two studies examined the relationship between women's status and IMRs at the state level in the U.S. (Kawachi et al., 1999; Koenen et al., 2006). Both studies found lower IMRs in U.S. states where women had greater economic autonomy and reproductive rights. Neither study identified a relationship between the political dimension of women's status and IMRs net of controls for state racial composition and economic conditions.

The lack of a clearly established and robust relationship between political gender inequality and IMRs in these U.S. studies is particularly puzzling given the evidence of such a relationship in the developing world. This discrepancy may be attributable to differences in the conceptualization and measurement of political gender inequality. Studies in the developing world that identified a relationship between political gender inequality and IMRs focused specifically on women's legislative representation and measured the percentage of national parliamentary seats that were occupied by women (e.g. Quamruzzaman and Lange, 2016; Swiss et al., 2012). Both prior U.S. studies employed an index of "political participation" that combined women's representation in elected offices with levels of women's voter registration and women's voter turn-out. Because these women's voting measures were not relative to men's voting measures they are not necessarily reflective of gender inequality per se; political participation may simply be low among all state residents regardless of gender. The extent to which these voting measures correspond to meaningful differences in political power is also unclear. For these reasons the present study follows the more straightforward approach of research in the developing world and examines women's representation in U.S. state legislatures as the key indicator of state-level political gender inequality.

There are two principal theoretical rationales for why there should be a relationship between women's political representation and infant mortality. The first rationale relies on an ecosocial perspective to connect gender inequality in a given social context to maternal and infant health. Nancy Krieger's (2014, 2001) ecosocial theory describes the processes by which people embody (i.e., literally biologically incorporate) social inequality. In the ecosocial model, social patterning of disease happens when exploitative/oppressive social relations structure exposure to living and working conditions, and to the exercise of civil, political, social, economic and cultural rights, which leads to the biological expression of discriminatory social systems. This embodiment occurs through multiple pathways including: economic and social deprivation, toxic/hazardous living conditions, socially inflicted trauma and inadequate healthcare (Krieger, 2014, 2001). The ecosocial perspective undergirds a new line of research that uses the political representation of blacks as an indicator of structural racism (e.g. Lukachko et al., 2014) and the political representation of women as an indicator of structural gender inequality (e.g. Backhans et al., 2007, 2009).

From an ecosocial perspective, underrepresentation of women in positions of political power is part of a system of gender inequality that may dramatically shape not only women's life chances, but also their health and the health of their children. As Koenen et al. (2006) point out, infants can literally embody the social status of their mothers through both the biological connection *in utero* and the intimate social connection postpartum. One specific example of a relevant ecosocial pathway that is supported by current empirical research is the connection between economic gender inequality, domestic violence, and infant mortality. The gender wage gap in local labor markets is positively associated with violence against women (Aizer, 2010) and exposure to domestic violence is a serious risk factor for infant mortality, low birth weight and preterm birth (Saifuddin et al., 2006; Shah and Shah, 2010).

Several complementary theories and findings from health disparities research suggest other potential pathways through which gender inequality may be embodied by women and their infants. For example, living in a context of greater gender inequality may harm women's health before and during pregnancy through psychosocial pathways related to low social status and relative deprivation (Subramanyam et al., 2009; Wilkinson, 1997; Wilkinson and Pickett, 2007). Similarly, increased stress exposure has been identified as an important mechanism linking race and gender to poor health (Sternthal et al., 2011; Thoits, 2010), and maternal stress is a known contributor to pregnancy complications and poor infant outcomes (Mulder et al., 2003). Finally, perceived discrimination has been linked to infant mortality and low birth weight in racial and ethnic minority populations (Collins et al., 2004; Krieger et al., 2013; Lauderdale, 2006). Although these pathways have been tested mainly in relation to racial and socioeconomic inequality, they are nonetheless potentially important mechanisms for the nascent line of research on contextual gender inequality to explore.

The second theoretical rationale for the relationship between women's political representation and infant mortality is broadly consistent with the ecosocial perspective, but emphasizes