

in the area, toward understanding the macrosocial drivers of population health. *AJPH*

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Could Raising the Minimum Wage Improve the Public's Health?

The minimum wage is once again generating contentious political debates. Virtually all the arguments involve economics, however. Questions pertain to the effects of increases in the minimum wage on poverty, unemployment, automation, job quality, income of low-wage workers, work hours, and income inequality. Rarely, if ever, do debates mention public health. But all these factors—poverty through income inequality—are widely researched in the Social Determinants of Health literature. Omission of public health from the debates, I believe, results from a paucity of research. Whereas some studies address living wages, wage theft, and the Earned Income Tax Credit, few public health researchers or epidemiologists address minimum wages.¹ Moreover, despite the colossal number of minimum wage studies by economists, a meager number consider health.

Hikes in the minimum wage affect many Americans. One estimate indicates that increasing the federal minimum wage to \$12 per hour by 2020 would lift wages for 35.1 million workers, or 25.5% of all workers.² Approximately 28.4 million would be directly affected and 6.7 million indirectly affected through “ripple effects,” whereby workers earning just above the

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minimum wage would also receive raises. In addition, the percentage of workers in low-wage jobs has been increasing for 15 years.¹ Income inequality has been worsening for more than 30 years, not just in the United States, but in most industrialized countries.³ American workers affected by an increase in the minimum wage defy stereotypes: the average age is 36 years, higher percentages are for those aged 55 years and older (15%) than for adolescents (11%), and approximately two thirds are aged 25 years or older.² Whereas estimated effects on employment are controversial, the Congressional Budget Office estimates that a federal hike to \$10.10 per hour in 2016 would result in a 500 000 or 0.3% drop in total employment.⁴ Although no consensus exists, most studies show that increases in the minimum wage reduce poverty.^{2,4}

The studies by Komro et al.⁵ and Tsao et al.⁶ signal welcome turns toward public health research into minimum wages and present consistent findings. Komro et al.⁵ treat rates of low birth weight (LBW) and postneonatal mortality as dependent variables in regressions in which the key independent variable is the difference between the state and federal minimum wage. All variables are aggregate statistics measured across states,

months, and years from 1980 through 2011. Additional covariates include fixed effects for years and states, percentage of African Americans, mean ages of mothers, poverty rates, and cigarette sales. Had all states raised their minimum wages by one dollar in 2014, Komro et al.⁵ estimate 2790 fewer LBW births and 518 fewer neonatal deaths.

There is much to recommend their design. Komro et al.⁵ employ the fixed-effects method that economists advocate. Fixed effects for states and years “sweep out” idiosyncratic state characteristics and national time trends. In addition, Komro et al.⁵ choose dependent variables that could plausibly be affected by an annual increase in the minimum wage. Pregnancies occur within nine months, and a woman's financial, physiological, and psychological well-being could plausibly be affected by an increase in her or her partner's wage within the same year. To their credit, Komro et al.⁵ also estimate the effects of increasing minimum wages in the year before the LBW birth or postneonatal death. By

contrast, incidence of cancer might be a poor choice for a dependent variable because cancer frequently results from years of exposure to carcinogens so that it is less plausible that a one-year change in the minimum wage would affect cancer incidence.

Overall, the Komro et al.⁵ findings are believable, but there are limitations. Variables likely do not contain much variation. Month-to-month variations in LBW and mortality within any state tend to be small. In addition, because increases in the minimum wage typically go into effect in January and are maintained for at least a year, within any given state-year, there is virtually no variation. Time series data that do not contain much variation sometimes provide questionable “statistically significant” results. Finally, because of controversies surrounding the effects of minimum wages on unemployment, the presentation of results with and without an unemployment covariate might have provided insights similar to the insights provided by their inclusion and exclusion of the poverty covariate in their Table 1.

Tsao et al.⁶ produce estimates of the effects of raising the minimum wage to \$15 in New York City

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This editorial was accepted May 24, 2016.

doi: 10.2105/AJPH.2016.303288

using simulation models. They assume that increases in the minimum wage affect the proportion of low-income residents in 59 neighborhoods and that this proportion, in turn, affects premature mortality. They first run a linear regression with premature death rates within neighborhoods as the dependent variable and percentage of families with low-income within neighborhoods as the key independent variable, together with several control variables. The estimated coefficient on percentage of families with low income is then combined with estimates of the effects of minimum wage increases on the percentage of families with low income to generate overall estimates of the effects of the wage increase on mortality. Tsao et al.⁶ produce some eye-popping findings: the \$15 minimum wage would reduce premature deaths from 2800 to 5500 over five years.

The Tsao et al.⁶ study has advantages. Within alternative scenarios, they explicitly allow for the possibility of increases in unemployment and rising wages for workers earning one dollar above the minimum. Their family income variable includes more than wages, as it should, and they account for the fact that the self-employed are not

covered by the minimum wage. One limitation is that their regression data do not allow for changes in income or mortality over time; the variability comes solely from neighborhood differences. This introduces self-selection bias because healthy and unhealthy people can sort themselves into different neighborhoods. Assuming annual data are available, a better design might have followed Komro et al.⁵ by including annual measures of income and mortality and using fixed effects for 59 neighborhoods and five years.

There are numerous avenues for future research. The most convincing economic studies restrict attention to low-wage workers residing in counties in one state that raises its minimum wage with low-wage workers in other counties in another contiguous and socioeconomically similar state that does not raise its wage—the difference-in-differences technique. Few, if any, public health studies restrict attention to low-wage workers or compare similar counties. A recent economic study involving mental health considers only workers earning exactly or just above the UK minimum wage.⁷ Reeves et al.⁷ find that a 30% wage increase is equivalent to the effect

of antidepressants. Some economic studies find that increasing minimum wages may not decrease geographic poverty rates attributable to adverse effects on employment.^{2,4} But there are mechanisms whereby the minimum wage may influence health independent of poverty rates. Increasing wages can improve psychological well-being and job satisfaction, increase the opportunity cost of engaging in unhealthy habits, and expand the ability to delay gratification.¹ Increasing low wages can also reduce income inequality. An appreciation of which mechanism is most relevant for the data at hand would enhance our understanding. New research should also address effects on a variety of health outcomes such as smoking, injury, and weight gain, among others, as well as on the health safety net (i.e., participation in Medicaid; SNAP [food stamps], Women, Infants, and Children; workers compensation; and Social Security disability programs). Finally, state-by-state variation in minimum wages might prove useful in instrumental variable analyses of the effects of low-wages, in general, on health.⁸ **AJPH**

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ACKNOWLEDGMENTS

Partial support was provided by the National Institute for Occupational Safety and Health (U54OH007550).

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The Elusive Promise of LGBT Equality

Follow-up on: Mustanski B, Birkett M, Greene GJ, Hatzenbuehler ML, Newcomb ME. Envisioning an America without sexual orientation inequities in adolescent health. *Am J Public Health.* 2014; 104(2):218–225.

Fifteen years ago, I wrote an AJPH editorial titled “Why LGBT public health?” where I tried to explain the importance of addressing lesbian, gay, bisexual, or transgender (LGBT) health and health disparities related to sexual

orientation and gender minority status.¹ I was the Guest Editor for *AJPH*'s first issue dedicated to LGBT health in the *Journal's* then 91-year-history. Back then, the public health audience was uninformed and often reluctant to engage with LGBT health issues other than AIDS. A lot has changed since then. *AJPH* has become a leader in advancing LGBT health research by regularly publishing innovative research and providing

important knowledge to public health researchers and policymakers.

In that editorial (and elsewhere), I proposed, based on social and psychological theories on prejudice,

stigma, and the role of the social environment and stress on health, that prejudice and stigma against LGBT people can lead to adverse health outcomes. I, and others, have noted that social disadvantages predispose LGBT people to

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This editorial was accepted April 2, 2016.
doi: 10.2105/AJPH.2016.303221