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A potential role of anti-poverty programs in health promotion

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Abstract

Poverty is one of the most pervasive risk factors underlying poor health, but is rarely targeted to improve health. Research on the effects of anti-poverty interventions on health has been limited, at least in part because funding for that research has been limited. Anti-poverty programs have been applied on a large scale, frequently by governments, but without systematic development and cumulative programmatic experimental studies. Anti-poverty programs that produce lasting effects on poverty have not been developed. Before evaluating the effect of anti-poverty programs on health, programs must be developed that can reduce poverty consistently. Anti-poverty programs require systematic development and cumulative programmatic scientific evaluation. Research on the therapeutic workplace could provide a model for that research and an adaptation of the therapeutic workplace could serve as a foundation of a comprehensive anti-poverty program. Once effective anti-poverty programs are developed, future research could determine if those programs improve health in addition to increasing income. The potential personal, health and economic benefits of effective anti-poverty programs could be substantial, and could justify the major efforts and expenses that would be required to support systematic research to develop such programs.

Keywords

Poverty; unemployment; health disparities; HIV; anti-poverty interventions; therapeutic workplace; incentives

Poverty is a pervasive risk factor underlying poor health. People living in poverty have higher rates of a variety of adverse health outcomes, including obesity (Drewnowski and Specter, 2004), cigarette smoking (Hiscock, et al, 2012), human immunodeficiency virus (HIV; Oldenburg, et al, 2014), heart failure (Hawkins, et al, 2012), stroke (Addo, et al, 2012), cancer (Ward, et al, 2004), and death (Muennig, et al, 2010). A recent large-scale study in the United States showed that life expectancy decreases as income decreases and

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that effect appears to be substantially influenced by health behaviors including cigarette smoking, obesity and exercise (Chetty et al. 2016). Two broad approaches could be employed to address health disparities associated with poverty: 1) proximal interventions that improve health and health behaviors in low-income populations, an approach that is commonly recommended (e.g., Chetty et al., 2016), and 2) distal anti-poverty interventions that move indigent individuals out of poverty. Despite the pervasive effects of poverty on health, poverty is rarely targeted directly to improve health. This paper outlines a potential role of anti-poverty programs in health promotion.

Poverty and HIV: An Example of the Effects of Poverty on Health

Human immunodeficiency virus (HIV) serves as an excellent example because it is diagnosed with a definitive, biological test, unlike many other health conditions that appear exacerbated by poverty (e.g., depression). HIV is commonly transmitted through unprotected sex and risky injection practices by people who inject drugs. Men who have sex with men experience the highest rates of HIV through unprotected sexual behavior, but heterosexuals also contract HIV through sex. Untreated HIV can diminish the body's immune response, and increase susceptibility to opportunistic infections and death. Poverty "above other social determinants such as sex, race/ethnicity, and sexual orientation, is the driver of the changing shape of the HIV epidemic today (Oldenburg, et al, 2014)." One study of 34,427 US adults showed that poverty was associated with increases in HIV; independent of age, sex, sexual identity, race, urbanicity and education (Oldenburg, et al, 2014). The Centers for Disease Control and Prevention (CDC, 2015) showed that HIV diagnoses were highest in census tracts with the highest percentage of residents living below the federal poverty level, the highest percentage of residents with less than a high school degree, and the highest percentage of unemployed residents, independent of the mode of HIV transmission and gender (Figure 1).

Public health organizations (CDC, 2010; CSDH, 2008; White House Office of National AIDS Policy, 2015), health professionals and scientists (Satcher, 2010; Dean and Fenton, 2010) have recognized the influence of socioeconomic factors (poverty, limited education and unemployment) on HIV and have advocated for interventions that address those socioeconomic factors. However, research on the effects of anti-poverty interventions on HIV has been limited (e.g., Jennings, 2014; Cui, et al, 2013). Relatively little health-oriented research has examined the effects of anti-poverty programs. Although the National Institutes of Health (NIH), for example, supports research to reduce health disparities, that research is typically expected to improve some health outcome; reducing poverty in a population at risk for poor health is not sufficient. The NIH Notice NOT-OD-15-137, for example, states NIH's interest in supporting research that reduces the incidence of HIV/AIDS. Although this notice includes a focus to reduce health disparities, high priority research is expected to demonstrate effects on "the incidence of new HIV infections or in the treatment outcomes of those living with HIV/AIDS."

Limitations of Existing Anti-Poverty Programs

Anti-poverty programs that produce lasting effects on poverty have not been developed (Bitler and Karoly, 2015). Programs that provide in-kind transfers like food stamps, child nutrition programs, and housing assistance can reduce adverse effects associated with poverty and improve health, but there is little evidence that these programs produce long-term reductions in poverty (Bitler and Karoly, 2015). Anti-poverty programs have been generally applied on a large scale, frequently by governments, but without systematic development and cumulative experimental studies (Bitler and Karoly, 2015). Conditional Cash Transfer programs, for example, have been used in low- and middle-income countries to reduce poverty and improve the health of low-income families (Lagarde, et al, 2007; Ranganathan and Lagarde, 2012; Pettifor, et al, 2012). These programs are offered to low-income families because poverty tends to be transmitted across generations (Riccio, et al, 2010; Ermisch, et al, 2012). They seek to promote proximal health behaviors (e.g., attending health care visits) that improve health immediately and address distal factors (e.g., attending school) that can reduce poverty and thereby improve long-term health. New York City implemented the first Conditional Cash Transfer program in the U.S. (Riccio et al., 2013). The program, called Opportunity NYC, was implemented in New York's highest poverty communities. A randomized study evaluated Opportunity NYC in 4,800 families and 11,000 children, half of whom were randomized to receive Opportunity NYC's "Family Rewards." The families earned incentives over a 3-year period averaging over \$8,700 per year for utilizing health services (e.g., medical checkups), for meeting education goals for the child (e.g., attendance and achievement), and for meeting employment-related goals for the parent (e.g., completing training and sustaining employment).

The Family Rewards program had small and transient or no effects on the main outcomes: It reduced poverty slightly, but that effect did not persist after the program ended; it increased self-reports of employment, but did not increase earnings from over-the-table jobs; and it had no effect on school outcomes or use of preventive medical care. The lack of effects is not that surprising given that the components of this large-scale program were never tested in isolation.

Scientific Development and Evaluation of Anti-Poverty Programs: An Illustrative Example

Before evaluating the effect of anti-poverty programs on health, anti-poverty programs must be developed that can reduce poverty consistently. Anti-poverty programs require systematic development and rigorous scientific evaluation, much like research programs to develop medications for health conditions. Research on the therapeutic workplace provides an illustrative example of the type of research and program development that could be useful in addressing poverty. The therapeutic workplace was originally designed to treat poor, unemployed adults who have histories of drug addiction (Silverman, 2004), it includes features to address both poverty and drug addiction. Therapeutic workplace participants are hired and paid to work, as in typical employment. To promote drug abstinence or medication adherence, participants must provide objective evidence of drug abstinence or take

scheduled doses of medication to maintain access to the workplace and maintain maximum pay. To address poverty, the therapeutic workplace includes an initial phase (Phase 1) that provides intensive and individualized education and training. Once participants initiate abstinence and acquire skills, they progress to Phase 2 and are hired and paid as employees in a business (Silverman, et al, 2005; Aklin, et al, 2014). Although the therapeutic workplace was designed to address poverty and drug addiction, it could be adapted to address poverty and other health behaviors, or even to address poverty alone and could serve as a foundation or core of a comprehensive anti-poverty program.

To facilitate implementation, we developed a web-based application to operate the therapeutic workplace and computer-based training programs to teach basic computer and keyboarding skills (Silverman, et al, 2005). We developed three models to maintain employment-based reinforcement during Phase 2 (Silverman, Holtyn and Morrison, in press). Under the Social Business model, Phase 1 graduates are hired as employees in a social business. Social businesses are cause-driven organizations that aim to address socially-relevant problems in a financially self-sustainable way (Yunus and Weber, 2007; Weber and Yunus, 2010). The Therapeutic Workplace social business maintains employment and employment-based abstinence reinforcement (Silverman, et al, 2005; Aklin, et al, 2014). Under the Cooperative Employer model, a community employer hires graduates of Phase 1 and requires that employees undergo random drug testing and remain abstinent to maintain employment. Under the Wage Supplement model, graduates of Phase 1 are offered abstinence-contingent wage supplements (Berlin, 2007; Michalopoulos, 2005; Riccio, et al, 2010) if they maintain competitive employment. To promote employment, we are using Individual Placement and Support (IPS) supported employment, which has been demonstrated effective in a number of randomized controlled studies in promoting employment in people with severe mental illness (Bond, et al, 2012). IPS emphasizes rapid job search, promotes competitive employment, considers the participant's preferences, and provides job supports and benefits counseling. IPS is implemented by employment specialists who establish relationships with potential employers, and work with participants individually and in groups to identify available jobs, prepare applications, and to apply for positions. IPS is offered on a long-term basis to provide assistance to participants as needed repeatedly over time.

Incentives are an essential feature of the therapeutic workplace. Initially, participants earned monetary vouchers exchangeable for goods and services for attending the workplace, working on training programs and maintaining abstinence from illicit drugs. The voucher program was modeled after an intervention developed for the treatment of primary cocaine-dependent patients (Higgins, et al, 1991). We have since used different forms of monetary incentives, including regular pay checks (Silverman, et al, 2005). We are currently using reloadable credit cards that are reloaded at the end of each workday. In all cases, participants receive continual electronic feedback throughout each workday that specifies the amount of earnings and the behavior for which the incentive was earned.

We have conducted randomized controlled trials that have shown that contingent-access to the therapeutic workplace intervention can promote and maintain abstinence from opiates and cocaine and adherence to the opioid antagonist naltrexone in opioid-dependent adults

(Silverman, et al, 2012). Our studies have also demonstrated the effectiveness of arranging explicit reinforcement for attendance in training (Silverman, et al, 1996; Koffarnus, et al, 2011) and for performance on training programs (Koffarnus, et al, 2013b; Koffarnus, et al, 2013a). This research shows clearly that we have an effective approach to promote academic and job skills, work, and health behaviors in adults who live in poverty.

Our research (Silverman, et al, 2012) has focused mostly on promoting proximal health behaviors (i.e., abstinence from illicit drugs and adherence to addiction medications). Some of our ancillary studies have focused on assessing (Holtyn, et al, 2015) and promoting (Koffarnus, et al, 2013b; Koffarnus, et al, 2013a; DeFulio, et al, 2009) skills that our participants need to escape poverty, and lay a foundation for a broader program of research to move people out of poverty. However, our research has not systematically focused on poverty.

Figure 2 diagrams what a comprehensive therapeutic workplace anti-poverty intervention might look like. Our research has focused and continues to focus on unemployed adults who have histories of drug addiction (left-most column); however, this model could be adapted to serve other populations of unemployed adults, including individuals with other health problems that require intervention (e.g., cardiovascular disease) or unemployed adults with no other health behaviors that require intervention. Incentives to promote health behaviors in this intervention are generically described as “employment-based health incentives.” In addition, comparable procedures could be used simultaneously to address the needs of the infants and children of these adults (right-most column). While early intervention programs have shown substantial effects, their benefit in reducing poverty is unclear (e.g., Campbell et al., 2012). Combining an effective early intervention program with an effective anti-poverty intervention for adult parents, as suggested in Figure 2, may be a useful approach.

Opportunity NYC had many of the same targets suggested in this diagram, but Opportunity NYC created a massive intervention and evaluated the entire intervention without testing individual parts. A cumulative research program, which tests parts of the intervention and then combines the effective parts progressively to create a comprehensive anti-poverty intervention, could be productive.

Conclusion

Developing an empirically-supported anti-poverty program is an enormous undertaking, and might require hundreds of studies to test its many parts alone and in combination.

Embarking on such a program of research is particularly challenging since no federal research agency like NIH identifies the development of anti-poverty programs as a funding priority. While the federal “war on poverty” was well intentioned (Bitler and Karoly, 2015), it neglected to support and promote cumulative research to develop and evaluate effective anti-poverty programs. Effective anti-poverty programs could achieve the worthy goal of alleviating the suffering associated with poverty itself, but they may also reduce the many health problems that appear to be exacerbated by poverty. Once effective anti-poverty programs are developed, it will be important for future research to determine if those programs improve health in addition to increasing income. The potential personal, health and economic benefits of effective anti-poverty programs could be substantial, and could

justify the major efforts and expenses that would be required to support systematic research to develop such programs.

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Highlights

- Poverty is a risk factor for poor health, but is rarely targeted to improve health.
- Research on anti-poverty interventions to promote health has been limited.
- Anti-poverty programs require cumulative programmatic scientific evaluation.
- The therapeutic workplace could serve as a foundation for anti-poverty programs.
- Anti-poverty programs could have substantial personal, health and economic benefits.

Figure 1.

The percentage of HIV diagnoses for 11,252 adults with HIV infection diagnosed from 11 US states, the District of Columbia, and Puerto Rico in 2013 across census tracks in those areas as a function of the rates of poverty (left), education (middle) and unemployment (right) in those census tracks for men (top figures) and women (bottom figures) and for the three main populations who account for the vast majority of HIV diagnoses, men who have sex with men (MSM, circles), adults who inject drugs (IDU, triangles) and heterosexuals (Het, squares). This figure is adapted from Table 6 in CDC (2015). This report is not copyrighted and may be used and copied without permission.

Figure 2.

A diagram of an incentive-based therapeutic workplace and learning center for adults and their children who live in poverty. Asterisks (*) indicate features that we have experimentally evaluated. Double daggers (‡) indicate features that we have only evaluated in a limited way. Daggers (†) indicate features that we are currently experimentally evaluating.