Social Science & Medicine 147 (2015) 144–149

Contents lists available at ScienceDirect

Social Science & Medicine

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

Subjective relative deprivation is associated with poorer physical and mental health

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ARTICLE INFO

Article history:
Received 12 May 2015
Received in revised form
13 October 2015
Accepted 14 October 2015
Available online 19 October 2015

Keywords:
Relative deprivation
Perception
Physical health
Mental health
Inequality

ABSTRACT

Substantial epidemiological evidence has shown that income inequality and objective measures of relative deprivation are associated with poorer health outcomes. However, surprisingly little research has examined whether subjective feelings of relative deprivation are similarly linked with poorer health outcomes. The relative deprivation hypothesis suggests that inequality affects health at the individual level through negative consequences of social comparison. We directly examined the relationship between subjective feelings of personal relative deprivation and self-reported physical and mental health in a diverse community sample ($n = 328$). Results demonstrated that subjective feelings of personal relative deprivation are associated with significantly poorer physical and mental health. These relationships held even when accounting for covariates that have been previously associated with both relative deprivation and health. These results further support the link between relative deprivation and health outcomes and suggest that addressing root causes of relative deprivation may lead to greater individual health.

1. Introduction

Income inequality is an issue of great concern to citizens and governments worldwide for good reason: Income inequality has been associated with nearly every measurable social, health, and well-being issue (reviewed in Pickett and Wilkinson, 2015; Wilkinson and Pickett, 2006, 2007, 2009). Here, we (a) briefly review epidemiological evidence linking inequality, mental health, and physical health; (b) describe the relative deprivation hypothesis, which may account for an individual-level association between inequality and health; and (c) present research directly examining whether subjective feelings of relative deprivation are associated with self-reported physical and mental health at the individual level.

1.1. Inequality and health at the aggregate level

Substantial epidemiological evidence indicates that aggregate-level income inequality (i.e., income inequality measured at the society, nation, state/province, and community/census tract levels) affects diverse health outcomes (reviewed in Subramanian and Kawachi, 2004; Pickett and Wilkinson, 2015; Wilkinson and Pickett, 2006, 2007, 2009). Income inequality has been linked with increased obesity, mental illness, and general mortality, as well as decreased cardiovascular health and life expectancy, among other negative physical and mental health outcomes (e.g., Crepaz and Crepaz, 2004; Khan et al., 1998; Pickett and Wilkinson, 2010; reviewed in Pickett and Wilkinson, 2015; Wilkinson and Pickett, 2006, 2007, 2009). These effects have been demonstrated even when controlling for individual-level socioeconomic status and such aggregate economic measures as gross domestic product (e.g., Kawachi et al., 1997; Kennedy et al., 1998; Kawachi et al., 2002; Wilkinson, 1996; reviewed in Pickett and Wilkinson, 2015; Wilkinson and Pickett, 2009). A recent review by Pickett and Wilkinson (2015) provides evidence that the aggregate-level income inequality/health relationship meets all major criteria for causality (i.e., temporal precedence, non-spuriousness, covariation, and biological plausibility). Together, the extant evidence clearly indicates that income inequality has an important influence on physical and mental health.

1.2. Relative deprivation and health

The relative deprivation hypothesis (also known as the relative income hypothesis or the income inequality hypothesis) offers an

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http://dx.doi.org/10.1016/j.socscimed.2015.10.030
0277-9536/

explanation of the individual-level mechanisms underlying the relationship between inequality and negative outcomes at the aggregate level (e.g., Adjaye-Gbewonyo and Kawachi, 2012; Subramanian and Kawachi, 2004; Wilkinson, 1996; Wilkinson and Pickett, 2006, 2007, 2009). This hypothesis states that inequality manifests through various forms of socioeconomic comparison (especially income inequality). These various forms of socioeconomic comparison in turn undermine social cohesion, social capital, trust, and well-being more generally, eventually leading to negative psychosocial and physical outcomes (Walker and Smith, 2001; Wilkinson, 1996).

Substantial research evidence suggests that relative deprivation, as defined by individual-level socioeconomic comparison, is associated with poorer health (reviewed in Adjaye-Gbewonyo and Kawachi, 2012; Smith et al., 2012). In these studies, relative deprivation is almost always quantified through a relative statistical comparison of an individual's objective outcomes, experiences, or socioeconomic status relative to those in the population who score higher on such measures (using such indices as the Yitzhaki Index; Yitzhaki, 1979). That is, these studies involve the computation of an objective level of relative deprivation for each individual in a given sample relative to more privileged others (e.g., Eibner and Evans, 2005; Lhila and Simon, 2010). These indices of individual-level objective relative deprivation have been associated with poorer health outcomes in a number of domains, including increased mortality (Eames et al., 1993; McLoone and Boddy, 1994), suicide (McLoone, 1996), heart disease (Lawlor et al., 2005), and poorer mental health (Eibner et al., 2004; Walters et al., 2004; reviewed in Adjaye-Gbewonyo and Kawachi, 2012; Smith et al., 2012). However, no studies, to our knowledge, have examined whether the individual-level *subjective* experience of relative deprivation is associated with poorer physical and mental health.

Relative deprivation must necessarily manifest at the psychological level in order to influence individual level outcomes (Smith and Huo, 2014; Smith et al., 2012). Psychological relative deprivation describes subjective feelings of resentment, dissatisfaction, and anger associated with perceived deprivation of a deserved outcome relative to other persons (Bernstein and Crosby, 1980; Runciman, 1966; Smith and Huo, 2014). Surprisingly, very little research has examined whether directly measured whether subjective feelings of psychological relative deprivation are associated with health outcomes. Some individual-level studies have examined relationships between health outcomes and such non-subjective inputs as relative social status (e.g., Adler et al., 2000). Although variables like relative social status probably represent important inputs into subjective feelings of personal relative deprivation, they remain both non-subjective and domain-specific. None of the available research presents a direct test of the hypothesis that subjective personal feelings of relative deprivation are linked with individual-level physical and mental health.

1.3. Overview

The present research examined whether subjective feelings of personal relative deprivation are associated with poorer individual-level health. This research extends previous results in three important ways by: (1) directly measuring whether subjective feelings of personal relative deprivation are associated with physical and mental health in a diverse community sample, (2) using a general, non-domain specific psychological measure to assess individual differences in feelings of personal relative deprivation, and (3) examining whether individual differences in feelings of personal relative deprivation account for variance in physical and mental health above and beyond other variables that have been commonly associated with socioeconomic relative deprivation and health. We predicted that subjective feelings of personal relative deprivation would be significantly associated with self-reported physical and mental health, and would account for variance above and beyond other variables that have been previously associated with socioeconomic relative deprivation.

2. Methods

A total of 328 participants (160 men, 165 women, 3 unreported sex; age: $M = 31.0$, $SD = 12.5$, *Range*: 18 to 73) were recruited from Lethbridge, Alberta, using posters in the general community, the local university and college, homeless shelters, local employment offices, food banks, and the John Howard Society (a non-profit organization dedicated to re-integrating former prisoners into general society). Participants were recruited from these diverse sources in order to maximize variance in measures of interest, particularly relative deprivation, physical health, and mental health. Participants completed the measures below, in addition to several other personality and behavioral decision-making measures (unrelated to the present study) in random order on a computer. All participants were provided with monetary compensation for their time ($30, plus any additional earnings from the unrelated decision-making tasks). This study was approved by the University of Lethbridge Office of Research Ethics.

2.1. Sources of relative deprivation

We measured several potential objective sources of relative deprivation. Age, sex, current relationship length, education level, number of children, unemployment, personal and household annual earnings in the last year, parental divorce, and total household debt were measured using single item self-reports. Education level ("Completed grade eight" to "Graduate/professional school"), unemployment status (yes/no), personal and household annual earnings ("<$10,000" to "$100,000+"), and parental divorce (yes/no) were measured as categorical variables.

Social support was measured using the *Multidimensional Scale of Perceived Social Support* (MSPSS; Zimet et al., 1988), a highly validated self-report measure of subjectively experienced social support involving family, friends, and significant others. Participants indicated the degree to which they agreed or disagreed with 12 statements involving social support from family (e.g., "I get the emotional help and support I need from my family"), friends (e.g., "I can count on my friends when things go wrong"), and a significant other (e.g., "There is a special person who is almost always around me"). Items were rated on a scale of 1 (*very strongly disagree*) to 7 (*very strongly agree*).

2.2. Subjective personal relative deprivation

Subjective perceived relative deprivation was assessed using the *Personal Relative Deprivation Scale* (PRDS; Callan et al., 2008), a four-item psychological measure of the degree to which people feel subjectively deprived relative to others. This scale was constructed to be a more general version of existing domain-specific measures of relative deprivation (e.g., Dambrum et al., 2006; Tougas et al., 2006), and to specifically focus on the affective consequences of interpersonal comparisons (Smith and Ortiz, 2001). This measure has been associated with such diverse outcomes as gambling urges, problem and pathological gambling tendencies, future discounting, antisocial conduct, criminal outcomes, risk-propensity, risk attitudes, lower conscientiousness, and lower self-esteem (Callan et al., 2008; Mishra and Novakowski, 2016). It has also been demonstrated to have acceptable internal consistency (Callan et al., 2011).

The specific items of the PRDS are: (1) "I feel resentful when I see