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Neighborhood conditions, religious coping, and uncontrolled hypertension

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ABSTRACT

The purpose of this study is to see whether God-mediated control beliefs moderate the relationship between living in rundown neighborhoods and uncontrolled hypertension. God-mediated control refers to the belief that God will help people handle the stressors that arise in life. Data are provided by a nationwide survey of adults (N = 1919). Three ways of assessing uncontrolled hypertension are examined: a binary format contrasting people with and without uncontrolled hypertension, systolic and diastolic blood pressure scored continuously, and a four ordinal category scheme recommended by the American Heart Association. The data suggest that stronger God-mediated control beliefs moderate the relationship between neighborhood conditions and uncontrolled blood pressure when blood pressure is scored continuously and when the American Heart Association scheme are used as outcomes.

1. Introduction

The purpose of this study is to examine the relationships among stress, religious coping responses, and uncontrolled hypertension. The three-part discussion that follows moves from general to more specific issues. First, data on the prevalence of hypertension and uncontrolled hypertension are reviewed briefly in order to highlight the importance of studying uncontrolled hypertension. Second, general issues involving the stress, coping responses, and hypertension are examined in an effort to anchor this study in the wider literature on the stress process. Third, a theoretical rationale is provided to explain why the measures of stress (i.e., adverse neighborhood conditions) and religious coping (i.e., God-mediated control beliefs) form the focal point of the analyses that are provided below.

1.1. Uncontrolled hypertension

The pernicious effects of high blood pressure are summarized in a recent report from the American Heart Association (Flynn et al., 2014). According to this report, high blood pressure is the leading risk factor-related cause of death throughout

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the world, accounting for 51% of stroke deaths and 45% of coronary heart disease deaths. Roughly a third of the U.S. adult population has hypertension. Unfortunately, there are two reasons why this figure is likely to rise. First, as Flynn et al. (2014) report, 90% of people with normal blood pressure at age 55 will go on to develop hypertension as they move through the remainder of the life course. As the U.S. population continues to grow older, this means that the rates of hypertension will surely rise. Second, overall rates of hypertension in the nation are also likely to increase because research reveals that rate of hypertension among youths is increasing rapidly (Flynn et al., 2014).

The risks associated with hypertension can be reduced substantially through the use of medication and life style changes, such as regular exercise (Annesi, 2013) and the reduction of sodium in the diet (Howlett et al., 2012). However, these preventive measures are effective only if hypertension is diagnosed and only if people comply with prescribed treatment regimens. There is mounting evidence that this not the case. Wall et al., 2014 report that 48.2% of the people in the nation with hypertension do not have their high blood pressure under control. This occurs because people do not know their blood pressure is high or because they do not comply with prescribed treatment regimens.

So if hypertension is widespread and if nearly half the people who have hypertension do not have it under control, then it is imperative that researchers learn more about the factors that are associated with uncontrolled hypertension. Clearly, many studies have already examined this issue (e.g., Borzecki et al., 2005) and a number of interventions have been conducted to help people bring their hypertension under control (e.g., Turner et al., 2012). Nevertheless, there are two ways to improve upon the research that has been done so far.

First, the majority of studies on uncontrolled hypertension are based on binary measures that compare people who have hypertension (systolic blood pressure > 140 or diastolic blood pressure > 90) with individuals with blood pressure in the normal range. Use of this measurement strategy has not kept up with advances in defining and classifying hypertension. More specifically, the Seventh Report on the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (i.e., JNC-7) (2003) breaks down hypertension into four ordinal diagnostic categories: normal, prehypertension, stage 1 hypertension, and stage 2 hypertension. The binary measurement strategy that is used by many investigators unwittingly pools individuals with normal blood pressure and people with prehypertension. This is unfortunate because the JNC-7 Report (2003) reveals that people with prehypertension are also at risk. Moreover, the binary approach to assessing hypertension pools people with stage 1 hypertension with those who have stage 2 hypertension, thereby forgoing the opportunity to isolate factors that are associated with hypertension among individuals with the greatest risk (i.e., stage 2 hypertension). An effort is made to overcome this problem in the current study by using the JNC-7 (2003) categorization scheme as the dependent variable. This appears to be the first time this classification scheme has been used in a large nationwide probability survey.

Second, a number of studies on the correlates of uncontrolled hypertension have been conducted with small clinical samples making it difficult to determine if the study findings can be generalized to other groups (e.g., Jacobs et al., 2011). This problem is addressed in the analyses that are provided below by relying on data from a large nationwide probability survey of adults.

1.2. Stress, religion, and uncontrolled hypertension

A convincing body of research reveals that greater exposure to stress is associated with elevated blood pressure and hypertension (e.g., Carroll et al., 2001). This literature is impressive because a wide range of stressors appear to be capable of promoting these unwanted effects, including work-related stress (Ming et al., 2004), early childhood adversity (Stein et al., 2010), rundown neighborhoods (Euteneuer et al., 2014), and a number of different laboratory-induced stressors (Kuebler et al., 2014).

Unfortunately, research on stress and hypertension suffers from three limitations. First, some researchers rely on self-reports of hypertension (Matheson et al., 2010). There is some evidence that there may be considerable bias in these self-reports (Johansson et al., 1999).

Second, other investigators measure blood pressure and stress but fail to take the effects of coping resources (i.e., stress moderators) into account (Schneiderman et al., 2005). As the literature on stressful events began to evolve, researchers quickly became aware that many individuals who are exposed to a stressor do not subsequently suffer from physical or mental health problems. Instead, most people are able to rely on an array of coping resources to help them deal effectively with unwanted events in their lives. Included among these coping resources are social support (Roy, 2011), a sense of personal control (Elliott and Lowman, 2015), and religion (Abu-Raiya and Pargament, 2015). By failing to simultaneously examine the joint effects of stress and coping responses, research are, in effect, working with models that are misspecified.

Third, as with the wider literature on hypertension in general, some researchers assess the relationship between stress and hypertension with data that are provided by small samples that do not adequately represent a larger population (Euteneuer et al., 2014).

1.3. Neighborhood conditions, God-mediated control, and undiagnosed hypertension

The relationship between religion and hypertension has been examined in a number of studies. This research reveals, that a lower risk of having hypertension is associated with more frequent church attendance (Banerjee et al., 2014), more religious social support (Charlemagne-Badal and Lee, 2016a; 2016b), higher levels of intrinsic religiousness (Charlemagne-Badal and