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Research report

Psychological distress and dietary patterns in eight post-Soviet republics

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ABSTRACT

The purpose of this study is to examine the relationship between psychological distress and dietary consumption patterns in the former Soviet Union. Data are cross-sectional and were collected in 2001 from a large representative sample (n = 18,428) of respondents age 18 years and over in eight former Soviet republics. Sociodemographic covariates and psychological distress predictors were analyzed using ordinal logistic regression models to estimate multivariate correlations with the frequency of meat, fish, vegetable, fruit, and animal fat consumption among men and women in these eight regions. Results show that psychological distress exhibits statistically significant, negative associations with all dietary consumption indicators for both men and women. Social class predictors display consistent positive correlations with food consumption outcomes, emphasizing the potential importance of this concept in the dynamic relationship between diet and psychological distress. Higher reported levels of psychological distress are associated with the less frequent consumption of all types of food products in this analysis. Several possible interpretations are discussed, and we explore the probable multi-dimensional theoretical mechanisms that can help explain the complex relationships among distress, food insecurity, and dietary patterns in these eight republics of the former USSR. The general and practical significance of these findings is also discussed, along with suggested directions for future research and potential dietary intervention strategies.

Introduction

Trends in health and mortality in the Soviet Union and Eastern Europe following the collapse of communism are now well documented (e.g., Blum & Monnier, 1989; Cockerham, 1999; Jahns, Baturin, & Popkin, 2003; Shkolnikov et al., 2004). Many studies examine and explain these negative health developments from several different disciplinary perspectives, including sociology (e.g., Bobak, Pikhart, Hertzman, Rose, & Marmot, 1998; Cockerham, 2007), demography (e.g., Shkolnikov et al., 2004), criminology (e.g., Pridemore, 2006), and nutrition epidemiology (e.g., Popkin & Gordon-Larsen, 2004; Wang, Monteiro, & Popkin, 2002). However, the existing body of literature points to health lifestyles as one of the primary social determinants explaining negative health developments stretching back to the 1960s in this part of the world. The lifestyle factors especially relevant within the Soviet and post-Soviet contexts include particularly harmful behaviors like alcohol and tobacco use, but the lifestyle explanation also extends to other behavioral dispositions, including dietary considerations (Cockerham, 1999).

A large volume of research examines alcohol consumption (e.g., Nemtsov, 2005; Pridemore, 2006) and tobacco use (e.g., Gilmore & McKee, 2005; Pomerleau, Gilmore, McKee, Rose, & Haerpfer, 2004) as lifestyle dimensions of the ongoing health crisis in the former USSR. However, significantly fewer research pages are devoted to more closely investigating dietary trends and the precise social mechanisms that are associated with how often certain types of food are consumed, and by whom. Many medical conditions are closely associated with diet and nutrition in many societies that have experienced epidemiologic (Omran, 1971) and nutritional (Popkin & Gordon-Larsen, 2004) transitions, including cardiovascular disease (Hu et al., 2000), obesity (Popkin, 2007a; Shepard, Weil, Sharp, Grunwald, & Bell, 2001), diabetes (Montonen et al., 2005), and various cancers (Popkin, 2007b). Accordingly, diet is an important dimension of lifestyle that is worthy of research attention (Cockerham, 2005; Popkin, 2007a), and this is especially true within the context of post-communism and the republics of the former USSR (Jahns et al., 2003). Psychological distress is another important social factor that has been discussed in previous studies of health and well-being in this part of the globe (Anderson, 1997; Cornia, 2000; Leon & Shkolnikov, 1998; Shkolnikov & Cornia, 2000; Walberg, McKee, Shkolnikov, Chenet, & Leon, 1998). The concept of distress has been analyzed vis-à-vis lifestyles (Cockerham, Hinote, & Abbott, 2006; Hinote, Cockerham, & Abbott,

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2009) and more general health trends and outcomes (Abbott, 2002; Pietilä & Rytkönen, 2008), but the purpose of this paper is to more closely analyze dietary consumption patterns and their associations with psychological distress.

Distress, diet, and nutrition

Psychological distress may be defined as an adverse mental state involving marked depression and anxiety falling short of clinical mental illness, and is characterized by negative mood and malaise. It is described as a state of misery that is a common response to a stressful situation. Psychological distress not only threatens an individual's sense of well-being, but may promote negative health behaviors or help bring about negative physiological responses to stressful conditions over time (Mirowsky & Ross, 2003). Existing scholarship emphasizes the effects of these dynamics within the broader development of negative trends in health and longevity in the former Soviet Union (Anderson, 1997; Cockerham et al., 2006; Leon & Shkolnikov, 1998; Pietilä & Rytkönen, 2008), but evidence seems to indicate that they are probably secondary factors rather than direct causal determinants of negative health outcomes in these populations. That is, conditions of psychological distress more likely affect physical health and well-being through mechanisms like health lifestyles (Cockerham et al., 2006; Hinote et al., 2009; Shkolnikov et al., 2004). For example, Leon and Shkolnikov (1998) emphasize high levels of general stress during the transition out of communism but do not directly link these processes to morbidity or mortality.

Still, the overall body of research in this area suggests that stress, distress, and related processes need to be considered when analyzing the experiences of many citizens after the post-communist transition (Pietilä & Rytkönen, 2008). The current study extends these interests to diet and the ways that distress is associated with how frequently individuals are able to consume specific types of food products. Measured in a number of different ways, the well-known concept of social stress (Selye, 1936, 1976) is associated with overeating (Epel, Lapidus, McEwen, & Brownell, 2001), obesity (Bryant, Stevens, Truesdale, Mosley, & Chambless, 2008), hypertension (Guimont, Brisson, Dagenais, Milot, & Vezina, 2006), hormone levels affecting the storage of fat in the body (Burdette & Hill, 2008; Epel, McEwen, Seeman, Matthews, & Castellazzo, 2000), and other health and dietary considerations (Anderson, 1997; Cornia, 2000; Macht, 2008), but the role played by the more precise concept of psychological distress in the dietary patterns of post-Soviet populations is not so well-understood. As medical anthropologist Helman (1994:37) explains, "Food is more than just a source of nutrition. In all human societies it plays many roles, and is deeply embedded in the social, religious, and economic aspects of everyday life." Feelings of psychological distress are quite common in many parts of the former USSR, and in these populations distress is an important social context within which dietary considerations are likely "deeply embedded" for many of society's members.

Distress-related morbidity and mortality, and the precise mechanisms through which distress affects health and health behavior, are complex phenomena. Existing research shows that stress leads to physiological and psychological arousal, as well as increases in the production of fibrinogen (a blood plasma protein), which has been closely associated with cardiovascular disease in many different human populations and settings (Theorell, 2002). Physical and emotional responses also trigger sudden changes in heart rate, increases in blood pressure and viscosity, and a decline in the ability to maintain emotional balance and coherent behavior (Cornia, 2000:66). Additionally, stress and distress are associated with the use of alcohol and drugs as stress-reducers—behaviors that further exacerbate emotional and behavioral problems and often increase mortality risk (Cornia, 2000; Hinote et al., 2009).

So physiological changes represent an important response to conditions of distress, but a more comprehensive theoretical framework is needed to further explicate the mechanisms likely operating among psychological distress, diet, nutrition, and other health outcomes. After all, these responses can vary from individual to individual and from group to group, but it is generally accepted that human dietary behavior adapts according to changes in psychological and emotional arousal, including distress. While it is not advisable to make broad theoretical statements on these relationships because they tend to vary on the basis of several factors (Canetti, Bachar, & Berry, 2002; Cornia, 2000; Macht, 2008), existing research can help identify some noteworthy trends. For example, Mehrabian (1980) studied the connection between various emotions and food intake and notes that increased consumption was reported amidst low-arousal states like feelings of boredom, depression, and fatigue, with comparatively lower levels of intake associated with high-arousal states like tension and fear. Lyman (1982) identifies a tendency to eat healthy foods during positive emotions and a greater likelihood of eating unhealthy foods while experiencing negative emotions. Other research (e.g., Macht, 1999, 2008; Macht & Simons, 2000; Patel & Schlundt, 2001) contributes similarly important insights to the study of these dynamics, and research tends to emphasize the connection between negative emotional states and the consumption of foods that are high in calories, sugar content, salt, and saturated fat (Anton & Miller, 2005; Canetti et al., 2002; Cartwright et al., 2003; Greeno & Wing, 1994; Nguyen-Michel, Unger, & Sprujit-Metz, 2007), especially among individuals classified as emotional eaters. One research review by Macht (2008:2) further refines these findings in focusing on the variability of these responses by noting that restrained eaters tend to increase food intake as a response to negative emotions, binge eaters tend to binge, and normal eaters tend to reduce intake under such conditions. So taken together, research findings thus far appear somewhat inconclusive in isolating precise mechanisms to explain eating responses and food intake across individuals and groups as well as varying emotional states. Indeed, there is much more work to be done in these areas.

However, one study linking neighborhood disorder and obesity (Burdette & Hill, 2008) provides a very useful framework within which to discuss the more specific theoretical links between distress and dietary outcomes. In describing conditions of neighborhood disorder, the researchers note that chronically elevated psychological distress levels may bring about a two-stage stress response, consisting of a physiological fight-or-flight response and subsequent activation of the hypothalamic–pituitary–adrenal (HPA) axis. The first phase releases adrenaline into the bloodstream to facilitate access to energy reserves and the breakdown of fat deposits, while the second releases cortisol into the bloodstream. It is cortisol that eventually signals the brain to induce hunger and eating behavior, so within this framework, distress elicits the aforementioned stress response, which leads to the eventual release of cortisol, which is associated with hunger, eating, abdominal storage of fat, and possibly obesity (Hill, Ross, & Angel, 2005; McEwen, 2002, 2003, 2004). This approach helps explain an important theoretical connection between distressful conditions and diet (and consequently, obesity) by emphasizing these physiological and behavioral pathways.

In short, psychological distress appears negatively related to positive food habits and healthy dietary patterns (Burdette & Hill, 2008), either through emotional pathways (Canetti et al., 2002; Kaplan & Kaplan, 1957) or through various dimensions of food insecurity (Jahns et al., 2003). Potential emotional and physiological mechanisms have been briefly discussed above, but the actual