



Project-induced displacement, secondary stressors, and health

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ABSTRACT

It has been estimated that about 15 million people are displaced by development projects around the world each year. Despite the magnitude of people affected, research on the health and other impacts of project-induced displacement is rare. This study extends existing knowledge by exploring the short-term health impact of a large scale population displacement resulting from China's Three Gorges Dam Project. The study is theoretically guided by the stress process model, but we supplement it with Cernea's Impoverishment Risks and Reconstruction (IRR) model widely used in displacement literature. Our panel analysis indicates that the displacement is associated positively with relocatees' depression level, and negatively with their self-rated health measured against a control group. In addition, a path analysis suggests that displacement also affects depression and self-rated health indirectly by changing social integration, socioeconomic status, and community resources. The importance of social integration as a protective mechanism, a factor that has been overlooked in past studies of population displacement, is highlighted in this study.

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Introduction

The Three Gorges Dam Project (TGDP) on the Yangtze River in China is the largest hydropower project in the contemporary world. Although the project promises to boost China's economic development and deliver many benefits, the resettlement of 1.4 million (Zhang & Tang, 2009) people from the affected areas, however, is an unprecedented challenge. The economic and social losses incurred by those displaced by development projects is well known (Cernea & Mathur, 2008; Chakrabarti & Dhar, 2009; Verma, 2004), but little is known about the health impact of project-induced displacement on the displaced. This study expands the scope of displacement studies by attempting to identify the possible mechanisms linking population displacement and negative health outcomes.

Significance of the study

Displacement induced by development projects has been classified as one type of involuntary migration sharing many characteristics with other types of involuntary migration resulting from natural or man-made disasters (Chakrabarti & Dhar, 2009). Unlike voluntary migrants, involuntary migrants tend not to be self-

selected and self-motivated. Rather, they were made to move by an external force which they have little power to resist. Development project-induced displacement is the largest contributor to involuntary migration, accounting for the relocation of roughly 15 million people worldwide every year (Cernea, 2006).

Project-induced displacement is a significant research topic not only because of its enormous scale, but also because of its sociological ramifications. For example, while relocatees' often bear most of the burdens incurred by a developmental project, they receive little benefit from the development (Cernea, 2000). Although most development projects are meant to reduce poverty and improve the lives of people as a whole, project-induced displacement, ironically, often ends up putting displaced people in worse conditions. It is estimated that 75 percent of the population displaced by developmental projects in India since Independence now live in poverty (Chakrabarti & Dhar, 2009). Similarly, a World Bank estimate suggests that 60 percent of individual displaced by China's dam projects live below the poverty threshold (Robinson, 2003). Despite its sociological ramifications, project-induced displacement research has been dominated by economists and geographers with little participation by sociologists (Castles, 2003). Research on the health impacts of project-induced displacement is especially scarce. Jayewardene (1995) pointed out that such research emerged only after health problems reached a crisis level.

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This study contributes to displacement literature by providing solutions to several difficult methodological difficulties often encountered in the previous studies. First, most displacement studies have been done retrospectively. Retrospective designs confound measurement errors resulting from faulty memories and post-factum rationalizations (Campbell & Stanley, 1966). Second, to measure the effect of displacement effect, past studies often compared relocatees with residents at the destination instead of the more comparable non-migratory population at the place of origin. Third, past studies have been flawed by the inability to separate the pre-existing differences between relocatees and non-relocatees from the effect of displacement.

We address these problems by using “natural experiment” design, which is an ideal design for studying relocatees’ health (Kasl & Berkman, 1983). Three Gorges Dam Project (TGDP)-induced displacement provides us with a golden opportunity to conduct such a design. Since all residents living in the areas to be flooded by the dam were required to relocate, selective migration was not a problem. The project also afforded us the rare opportunity to collect pre-displacement data from TGDP relocatees and their non-migrating counterparts, thus avoiding recollection errors commonly associated with retrospective studies. The pre-displacement information also enabled us to control for pre-existing differences between relocatees and non-relocatees as potential confounding factors. Furthermore, the use of non-relocatees from the same region as the comparison group helped to control the effects of intrinsic factors such as history, maturation, and experimental mortality.

In addition, our study makes a unique contribution to the literature on the health impact of displacement by demonstrating that health problems among the displaced are related not only to uprooting itself, which affects all relocatees uniformly, but also to the differential experiencing of secondary stressors that often accompanied displacement (i.e., deterioration in social integration, socioeconomic status, and community resources) by different relocatees.

Theoretical framework

This study employs the stress process model (Pearlin, Menaghan, Lieberman, & Mullan, 1981) as its primary theoretical framework. The stress process model consists of three conceptual domains: stressors, psychosocial resources, and stress outcomes. The model has been widely used to study relations between a wide variety of stressors and stress outcomes by suggesting plausible psychosocial processes that link the two (Thoits, 1995; Turner & Lloyd, 1999). While it was not designed to study migration process in particular, the flexibility of the model has allowed many researchers to adapt it to study the health of involuntary migrants (Beiser, 1999, 2005; Hwang, Cao, & Xi, 2007, 2010; Ryan, Dooley, & Benson, 2008; Xi, 2007).

Although there is little disagreement that displacement produces changes to relocatees’ life, no consensus exists regarding whether all the changes contribute to distress. Some scholars emphasize the importance of change itself and predict that all life-changes, including benign ones, lead to create stress (Dohrenwend, 1975; Holmes & Rahe, 1967; Selye, 1982). They argue that all life-changes, regardless of their nature, are stressful because they disrupt life patterns and require that the organism adapt to the changes. Other scholars maintain that whether or not changes are stressful depends on their psychological and social meanings (Mirowsky & Ross, 2003; Pearlin, 1989; Thoits, 1995). Although abundant evidence supports an association between migration and distress, it is not clear whether migration itself or other undesirable changes associated with migration which lead to distress (Ben-Sira,

1997). While some scholars believe that displacement experience itself plays a primary role in causing physiological, psychological and socio-cultural stress because such an experience often consists of “grieving for a lost home” and “anxiety about an uncertain future” (Colson, 1971; Scudder, 2005; Scudder & Colson, 1982); others (Desjarlais, Eisenberg, Good, & Kleinman, 1995) maintain that displacement itself does not necessarily lead to distress, rather, distress results from changes in life circumstances of personal or social significance, such as changes in employment and social network, as well as from the experience of traumatic events during the migration process.

In this study, we argue that not only displacement (which affects all displaced) but also the proliferation of secondary stressors associated with displacement (which may affect different relocatees differently) should be regarded as correlates of distress. Because Cernea’s Impoverishment Risks and Reconstruction (IRR) model (Cernea, 1996, 1997, 2000) provides a useful framework for identifying negative consequences of displacement, we incorporate its components into our research model. Cernea’s IRR model names eight risk factors commonly accompanied population displacement: “landlessness, joblessness, homelessness, marginalization, increased morbidity and mortality, food insecurity, loss of access to common property, and social disintegration”. Among these factors, increased morbidity and mortality directly address the adverse health effects of displacement; other factors affect health in a more circuitous manner. For example, landlessness, joblessness, homelessness, and loss of access to common property are expected to elevate depression by raising the level of distress on the displaced; marginalization and social disintegration are likely to heighten psychological distress among the displaced by downgrading their social status, self-esteem, and social support. Finally, food insecurity may increase displaced people’s vulnerability to illness, as a result of poor nourishment. Because these changes often accompany displacement and because of their direct and indirect links to health, it is appropriate to conceptualize these changes as secondary stressors. Doing so enables us to incorporate the IRR model as a component of the stress process model.

Primary and secondary stressors

According to Pearlin, it is useful to distinguish between primary and secondary stressors. Whereas “primary stressors can be conceptualized as occurring first in experience, secondary stressors come about as a consequence of the primary stressors” (Pearlin, 1989: 248). A more detailed framework of stress proliferation is introduced by Pearlin and his colleagues (Pearlin, Aneshensel, & Leblanc, 1997; Pearlin, Mullan, Semple, & Skaff, 1990), in which primary stressors refer to stress-arousing demands that are directly rooted in the acute or chronic stressful event, while secondary stressors, in contrast, are defined as stressful experiences that are triggered by primary stressors. For instance, divorce impairs adults’ and children’s well-being through loss of emotional support, economic hardship, and disruptions in parent–child relationships (Amato, 2000); the death of a spouse will contribute to loneliness in survivors (Pearlin & Lieberman, 1979); involuntary job loss may result in marital conflict (Pearlin et al., 1981).

Making a distinction between primary and secondary stressors helps us to understand why the well-being of relocatees appears to be differentially affected by a displacement process that is apparently similar. According to Thomas and Thomas (2004), the displacement experiences are “heterogeneous and multi-faceted”. Because not all displaced who are exposed to the primary stressor are similarly exposed to secondary stressors, the distinction between primary and secondary stressors helps to better link stressful conditions to stress outcomes.

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