



Linking financial hardship throughout the life-course with psychological distress in old age: Sensitive period, accumulation of risks, and chain of risks hypotheses

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ABSTRACT

The primary objective was to investigate the life course hypotheses – sensitive period, chain of risks, and accumulation of risks – in relation to financial hardship and psychological distress in old age. We used two Swedish longitudinal surveys based on nationally representative samples. The first survey includes people 18–75 years old with multiple waves, the second survey is a longitudinal continuation, including people 76 + years old. The analytical sample included 2990 people at baseline. Financial hardship was assessed in childhood (retrospectively), at the mean ages of 54, 61, 70, and 81 years. Psychological distress (self-reported anxiety and depressive symptoms) was assessed at the same ages. Path analysis with WLSMV estimation was used. There was a direct path from financial hardship in childhood to psychological distress at age 70 (0.26, $p = 0.002$). Financial hardship in childhood was associated with increased risk of psychological distress and financial hardship both at baseline (age 54), and later. Financial hardship, beyond childhood, was not independently associated with psychological distress at age 81. Higher levels of education and employment decreased the negative effects of financial hardship in childhood on the risk of psychological distress and financial hardship later on. There was a bi-directional relationship between psychological distress and financial hardship; support for health selection was slightly higher than for social causation. We found that psychological distress in old age was affected by financial hardship in childhood through a chain of risks that included psychological distress earlier in life. In addition, financial hardship in childhood seemed to directly affect psychological distress in old age, independent of other measured circumstances (i.e., chains of risks). Education and employment could decrease the effect of an adverse financial situation in childhood on later-life psychological distress. We did not find support for accumulation of risks when including tests of all hypotheses in the same model.

1. Introduction

The association between socioeconomic position and health is one of the most well documented associations in social sciences. It persists over space and time, regardless of medical and technological development (Phelan et al., 2010). As a result of biological, social, behavioral and psychological factors over the life-course, poor health accumulates in old age. A better understanding of the processes through which social inequality over the life-course contributes to health outcomes in old age is therefore needed (Ben-Shlomo and Kuh, 2002). Research has

established that health inequalities persist into old age (Fors and Thorslund, 2015), but less is known about the social mechanisms that explain these later-life inequalities.

This study uses a life-course perspective to focus on psychological distress in old age. Mental disorders are common, especially in older people. In Sweden, about 40 percent of the women and 30 percent of the men 80–84 years report moderate or severe symptoms of anxiety or depressive symptoms (Molarius et al., 2009). Common mental health problems such as psychological distress often stem from social conditions, inability to cope with stress, and from negative life events

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(Mirowsky and Ross, 2003).

1.1. Linking financial hardship with psychological distress

Peoples' well-being is affected by a myriad of mechanisms, including social mechanisms such as poverty and inequality (Sederer, 2016; Marmot and Wilkinson, 2005). These adverse circumstances may have negative physiological effects on the amygdala and hippocampal volumes through stress responses (Butterworth et al., 2012). Financial hardship may also affect mental health through living conditions (Lynch et al., 2000) or health behaviors (Siahpush and Carlin, 2006). It is also likely that there is a selection into financial hardship, such that people who have mental disorders are more likely to encounter financial difficulties (Kiely and Butterworth, 2014; Muennig, 2008). The association between mental disorders and financial circumstances seems stronger than the association between mental disorders and either education or social class. (Laaksonen et al., 2007; Linander et al., 2015).

1.2. A life-course perspective on financial hardship and psychological distress

There is evidence that financial hardship and mental disorders are associated, but conflicting results regarding timing and long-term associations, including issues of bi-directional causality. In this study, we use the life-course perspective as a theoretical framework to investigate three central hypotheses about the relationship between financial hardship and psychological distress across the life-course – sensitive period, accumulation of risks, and chains of risks (Ben-Shlomo and Kuh, 2002).

1.3. Sensitive period

Sensitive period refers to a period with rapid individual change when adverse exposures might have long-lasting, detrimental effects on later health (Kuh et al., 2003). The idea that childhood is a sensitive period has become central to the life-course perspective (Kuh et al., 2014). In 1994, Duncan and colleagues found that family income and poverty were strongly associated with cognitive development and behavior of children (Duncan et al., 1994). Growing up in poverty was found to affect children's short-term memory, feelings of mastery and helplessness, psychological stress (allostatic load), and externalizing symptoms that have impact on future life (Evans, 2016). In addition, if a family becomes poor during one's upbringing affect socioemotional behavioral problems in adolescence (Wickham et al., 2017). Adverse childhood living conditions have been linked with lower cognition and more mental disorders in later life (Laaksonen et al., 2007; Fors et al., 2009). Others did not find support for childhood as a sensitive period because that the association was explained by education (Quesnel-Vallée and Taylor, 2012; Berndt and Fors, 2015).

1.4. Chains of risks

What defines the chain of risk model is that one negative factor (or positive) increases the probability of the same negative factors at next time point, and so on, and that the last time point in the chain is associated with the outcome. This model is also called the trigger model (Kuh et al., 2003). Chains of risks can involve mediating factors and when modelled it has previously been called pathway model (Hertzman et al., 2001).

Wickham et al. (2017) have shown that transitioning into poverty in childhood increases the risk for socioemotional problems in adolescence; others have found that mental disorders in adolescence increase the risk for educational underachievement and unemployment (Fergusson and Woodward, 2002). However, education has been found to be a mediating factor from adverse childhood conditions to old age

health (Quesnel-Vallée and Taylor, 2012; Berndt and Fors, 2015), whereas others have not found evidence that education is a mediator between financial hardship and mental health (Laaksonen et al., 2007). Moreover, unemployment and low levels of education increase the risk for mental disorders in midlife (Linander et al., 2015). In addition, lower socioeconomic position and adverse work related exposures in midlife increase the risk of negative psychological outcomes in later life (Darin-Mattsson et al., 2015, 2017). In sum, adverse childhood conditions seem to increase the risk for underachieved education that, in turn, increase the risk for less qualified occupation with adverse working environment and lower salary, which finally increase the risk of adverse health outcomes in old age.

1.5. Accumulation of risks

Risks can accumulate independently of the chain effect, through exposure to one risk factor at many occasions or exposure over time (Dannefer, 2003). It has previously been empirically tested either as a time varying dose-response relationship (Kjellsson, 2013) or as number of occasions in a certain state (Lynch et al., 1997). Exposure to financial hardship on more occasions during the life-course is associated with more adverse later health outcomes (e.g., worse mental health, worse self-rated health, functional impairment, and more limitations in activities of daily living) (Lynch et al., 1997; Laaksonen et al., 2007; Kahn and Pearlin, 2006; Shippee et al., 2012).

Researchers have argued that the distinction between these models is more conceptual than empirical (Hallqvist et al., 2004) and suggested that tests of all these hypotheses should be included in one model for a more complete understanding (Rosvall et al., 2006). Therefore, we test all these hypotheses simultaneously.

We acknowledge that it is hard to disentangle the concepts of sensitive period, chains of risks, and accumulation hypotheses, both conceptually and empirically. They are all complementary, while at the same time there are elements of competing explanations. However, our data make it possible to explore them in the same model simultaneously. Moreover, most studies of health inequality and social determinants of health have to consider whether the association is driven by social causation or health selection. Research supports both hypotheses (e.g. Kiely and Butterworth, 2014; Muennig, 2008). In a literature review and meta-analysis, Kröger et al. (2015), found support for both hypotheses. The question of social causation or health selection is important for understanding the relationship, and to define social policies aiming to increase psychological health and decrease the influence of social conditions on health. Although this question is not the focus of the present study, it deserves a full investigation on its own. However, our data, spanning approximately 30 years, including repeated measures, allow us to compare the strength of the direction of the association. In addition, while all longitudinal studies suffer from attrition, we were able to include a test of the impact of attrition on our results.

1.6. Aim

The overall aim was to investigate the most common life course hypotheses (sensitive period, accumulation of risks, and chains of risks), using Swedish data spanning the whole life course. Studying financial hardship and psychological distress, we posed the following questions:

- 1) Are there direct and indirect effects of financial hardship in childhood on psychological distress in old age?
- 2) Do education and employment mediate the relationship between financial hardship and psychological distress?
- 3) Is financial hardship associated with psychological distress in old age independently at each of the three points of measurement of financial hardship?

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