



## Poverty and mental health in Indonesia

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### ABSTRACT

Community and facility studies in developing countries have generally demonstrated an inverse relationship between poverty and mental health. However, recent population-based studies contradict this. In India and Indonesia the poor and non-poor show no difference in mental health. We revisit the relationship between poverty and mental health using a validated measure of depressive symptoms (CES-D) and a new national sample from Indonesia – a country where widespread poverty and deep inequality meet with a neglected mental health service sector. Results from three-level overdispersed Poisson models show that a 1% decrease in per capita household expenditure was associated with a 0.05% increase in CES-D score (depressive symptoms), while using a different indicator (living on less than \$2 a day) it was estimated that the poor had a 5% higher CES-D score than the better off. Individual social capital and religiosity were found to be positively associated with mental health while adverse events were negatively associated. These findings provide support for the established view regarding the deleterious association between poverty and mental health in developed and developing countries.

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### Introduction

Mental disorders are becoming a major burden for developing countries (WHO, 2001), where approximately 7% of the total burden of disease in 2010 is accounted for by various forms of mental and behavioural disorder (5% in 2000, 4% in 1990; IHME, 2013). It is estimated that the prevalence of common mental disorders in developing countries is as high as 20–50% in community and out-patient samples (Patel, Araya, de Lima, Ludermir, & Todd, 1999) or approximately 6–7% among the general population (Rai, Zitko, Jones, Lynch, & Araya, 2013). Yet among diagnosed cases, only 15–25% receive proper treatment (WHO, 2004) and the average amount of public investment in the mental health sector is just under 1% of the total health expenditure of many developing countries (Patel, 2007).

The increasing burden of mental illness in developing countries is far from inconsequential. The World Health Organization (WHO, 2012) warns that mental disorders reduce an individual's ability to function and often lead to disability and suicide. Mental illness also inflicts economic costs on society through loss of productivity (Bir & Frank, 2001) and income (Lund, Myer, Stein, Williams, & Flisher, 2013), which in turn could undermine the very effort to tackle

communicable diseases. Ignoring common mental disorders in an attempt to address communicable diseases may prove to be a false economy.

The relationship between poverty and mental health has been the subject of recent publications for several reasons. First, poverty eradication has always been at the heart of development policy-making. If poverty is associated with more mental illness, then this will serve as further motivation towards poverty eradication. Secondly, although the inverse relationship between poverty and mental health has long been established in industrialised countries, evidence from developing countries remains relatively scarce. If a consistent pattern is also found among the latter, this will indicate the universality of poverty as an important risk factor for poor mental health (Patel et al., 1999, p.1462), and thus a global development agenda can be set. Indeed, Lund et al. (2010) in reviewing 115 community and facility-based studies in developing countries strongly suggested that poor people have poorer mental health.

This however is contradicted by Das, Do, Friedman, McKenzie, and Scott (2007). When poverty was measured using per capita household expenditure, and physical health status was also controlled for in a multivariate model, these authors found no consistent association between poverty and mental health among their four nationally representative samples. Mental health was slightly worse for individuals in low consumption households in Bosnia, better in Mexico, and there was no statistically significant association in India and Indonesia. The authors then concluded that “poverty, *per se*, is not a strong determinant of poor mental health”

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(p.476) and further stated that the rationale for public investment in mental health is undermined by the more serious threat of communicable diseases.

Nonetheless, the study is not without shortcomings. Although nationally representative samples were used and many potential confounders were controlled for, the psychometric properties of the 'General Health Questionnaire-derived' instrument used to measure depressive symptomatology in Indonesia and Mexico are unclear (Goldberg, 1972). Moreover the studies also ignored the well-known skewed distribution of mental illness scores. The inconsistent findings might simply be an artefact of these problems.

Using a nationally representative sample from Indonesia, we revisited the relationship between consumption poverty and mental illness using a common measure, namely the 10-item Center for Epidemiological Studies Depression scale (CES-D; Radloff, 1977). Second, in addition to a poverty variable, this paper considers three factors that have long been considered important determinants of mental health among industrialised societies, namely social capital, religiosity and experience of adverse events. Lastly, we analysed the data using a multilevel overdispersed Poisson regression analysis that accommodates skewed data.

### Poverty and mental health: conflicting evidence?

Poverty has long been associated with a myriad of suffering. While factors such as genetics and environment unquestionably play a role, in public health research it is generally conceded that socio-economic status strongly correlates with an individual's physical and mental health.

Studies conducted in developing countries have so far largely confirmed the negative association between poverty and mental health. Analysing both community and facility samples in Zimbabwe, India, Brazil and Chile, Patel et al. (1999) found that the prevalence of common mental disorders ranged from 23% to a staggering 52%, with lower prevalence in community than facility samples. Furthermore, the odds of having depressive symptoms was significantly higher for income-poor individuals than income-rich individuals in all four countries (see also Mumford, Saeed, Ahmad, Latif, and Latif (1997) on Pakistan, Dzator (2012) on Ghana, Roberts, Ocaka, Browne, Oyok, and Sondorp (2009) on Uganda, and Myer, Stein, Grimsrud, Seedat, and Williams (2008) and Hamad, Fernald, Karlan, and Zinman (2008) on South Africa). Measures of poverty varied and included illiteracy (Mumford, Nazir, Jilani, & Baig, 1996), lack of tap water or electricity (Bahar, Henderson, & Mackinnon, 1992), number of electrical appliances (Mumford et al., 1997) and housing difficulty (Hussain, Creed, & Tomenson, 2000).

Using a consistent measure of poverty, namely per capita household expenditure, Das et al. (2007), Das, Do, Friedman, and McKenzie (2009) reported the association of poverty and mental distress in nationally representative samples from Bosnia (2001), India (2003), Indonesia (2000) and Mexico (2002). The study concluded that poor mental health has no strong relationship with poverty.

### Other major determinants of mental health

Apart from highlighting the role of poverty, studies over the last three decades have demonstrated that other factors strongly determine an individual's mental health. These include gender, marital status, experience of adverse event, religiosity and social capital.

### Gender

Gender is probably the most extensively researched and the most widely accepted determinant of mental health. Regardless of the economic development level of the country in question, literature suggests that depression is two to three times more prevalent among women than men (Das et al., 2007, 2009; Mumford, Minhas, Akhtar, Akhter, & Mubbashar, 2000; Mumford et al., 1996, 1997; Noorbala, Yazdi, Yasamy, & Mohammad, 2004; Patel et al., 1999), albeit a few studies in Africa not showing this inequality (Dzator, 2012; Jenkins et al., 2012; WHO, 2012). Explanations offered for greater depression among women than men include more reproductive problems, lower social empowerment, and more work/family stresses.

### Marital status

Evidence from industrialised countries so far suggests that married individuals tend to have fewer mental disorders compared to their non-married (never married, separated, divorced, or widowed) peers (Afifi, Cox, & Enns, 2006; Bromet et al., 2011; Wade & Pevalin, 2004), although there is new evidence from an Australian study suggesting that this association is moderated by relationship quality (Leach, Butterworth, Olesen, & Mackinnon, 2013, p.417). In developing countries evidence remains scarce, perhaps due to the limited availability of nationally representative longitudinal data. A negative effect of being widowed on mental health was found in an urban poor community in Pakistan (Mumford et al., 2000), although the effect did not achieve statistical significance in a more elaborate multivariate model. Patel et al. (1999) also found a negative bivariate effect among community samples in Zimbabwe, Brazil, India and Chile, although this also failed to achieve statistical significance in a multivariate model. Other studies found a consistent negative effect of being widowed in Tonga, India, Mexico, Bosnia, Indonesia (Das et al., 2007, 2009), South Africa and Ukraine (Bromet et al., 2011), while another new study from high sex ratio rural areas of China showed that unmarried men have lower self-esteem, a higher risk of depression, elevated suicidal thoughts and aggressive tendencies compared to married men (Zhou, Yan, & Therese, 2012).

### Adverse events

Experience of adverse events is intuitively related to poor mental health. The corpus of mental health literature documents the prevalence of mental disorders to be higher among individuals who have experienced disaster than among those who have not, irrespective of whether it was natural or man-made (Galea, Nandi, & Vlahov, 2005; Satcher, Friel, & Bell, 2007) and whether a one-time occurrence or recurrent disaster (Wind, Joshi, Kleber, & Komproe, 2013). Crime victims (Kilpatrick & Acierno, 2003) along with their immediate relatives (Amick-McMullan, Kilpatrick, & Resnick, 1991) and those who are in fear of crime (Stafford, Chandola, & Marmot, 2007) often experience greater psychological distress and mental disorders.

### Religiosity

Research into the relationship between religiosity and mental health over the past two decades suggests that religious individuals – measured in terms of both self-rated religiousness and religious attendance – are, in general, mentally more robust than their secular counterparts (Dein, Cook, & Koenig, 2012; Koenig, King, & Carson, 2012). Compared to those who are not religious, religious individuals report less psychological distress (Ellison, Boardman,

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