The Effects of Public Pensions on Depression: evidence from South Korea

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Background

While currently many countries have public pension systems for the elderly [1], far less attention has been paid to their possible relationship to elderly health. It is unclear whether there is a causal effect of public pensions on elderly health, and, if there is, how pensions affect health. Existing literature on income transfer programs attributes the positive effects of those programs to increased income levels (“income effect”), but rarely give attention to the role of unstable income such as income volatility (“security effect”) [2-9]. Thus, this study is to (1) assess whether public pensions are linked to lower depression in the elderly; and, if it is, (2) determine whether the linkages relate to increased income levels and/or income security, by examining the effects of public pensions on depressive symptoms among the elderly in South Korea (hereafter, Korea).

In Korea, approximately half of adults age 65 or older live below relative poverty [10]. Whereas financial support from adult children has been decreasing [11], old-age safety nets such as public pensions are not developed well. The primary public (earnings-related) pension called as the National Pension (hereafter, NP) was implemented in 1988. To get the benefits in later life, individuals are required to make contribution for at least 10 years during their working age [12]. The average earning-replacement rate of the benefits is 60 percent for a pensioner with 20 years of contribution, and decreases depending on contribution duration [13]. In 2012, only 29 percent of the elderly were paid for the benefits with approximately 352 USD per month on average (380 thousand Korean Won), owing to its contribution-based nature [12, 14].

Methods

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Data was taken from the Korean Longitudinal Study of Aging, which is a panel study consisting of middle- and old-aged community-dwelling adults. The 2006, 2008, 2010 and 2012 regular surveys, and the job history survey were used for this study. The Center for Epidemiological Studies Depression Scale 10 (CES-D 10) score in 2012 was used as the outcome measure. The pension status was identified at the four waves. To assess the roles of income level (including income from the pension) and financial security in the relationship between the pension and depression, mean income and income variation were calculated from the 2006-2012 surveys. Confounding factors such as socio-demographic characteristics, health status, and total working duration and past occupational characteristics were adjusted for.

The main challenge in identifying the causal link of the pension to depression relates to the potential endogeneity of the pension status. For example, the effects could be biased upwards since a person working in poor conditions seemed to be less enrolled in NP and to have more worsened health in late life. In contrast, there could be a downward bias. Whereas the government’s subsidy for farmers and fisheries may have led disadvantaged people to be more registered in NP; its redistributive features, as well as a lack of trust for the pension system, may have led high-earning self-employed to avoid the contribution payment. We employed both Ordinary least square (OLS) and instrumental variable (IV) approaches. The NP was implemented as contributory pension in 1988, which requires an individual to make contribution for at least 10 years. Thus, IV was created based on if a person has worked for at least 10 years under the certain conditions where the NP was mandatory, regardless of their real enrollment.

Results

Before assessing the effects of the NP, we assessed the relation of income level and volatile income to depressive symptoms. Income level was negatively linked to CES-D among women (p<0.01) but not men, whereas volatile income was not related to depression for both men and women. When the links of the pension to CES-D were assessed using OLS regression, the coefficients were insignificant for men and women. On the other hand, IV regression showed that men (p<0.05) and women (p<0.01) receiving the pension were less likely to be depressed. In addition, the pension attenuated the positive effects of income level among women.

Co-residing with children may give financial benefits to the elderly. We conducted same analyses only for older adults who were not living with children. For men, the positive associations of income level and negative associations of income volatility with CES-D were observed (p<0.05). For women, income level,
but not income volatility, was negatively related to CES-D (p<0.01). When the effects of the pension status were assessed, the OLS estimates showed insignificant coefficients on the pension status for both men and women. In the IV estimates, the pension was negatively related to depression for men (p<0.05) and women (p<0.01) and attenuated the effects of income level for women and the effects of both income level and volatility for men.

Conclusion

Our findings broadly support the view that public pensions are negatively linked to elderly depression. Moreover, our results suggest that public pensions may be related to better psychological health not only by providing resources to the elderly but also by leveling off stress derived from an unstable economic situation.

References


