

Abstract for European Population Conference 2022

Title: Association between skills mismatch and depression among Korean workers: using the 6th Korean Working Conditions Survey

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Aim:

Skills mismatch, defined by the gap between required and possessed workers' job-related skills, has become more prevalent in developed economies. Approximately every fourth worker in the OECD countries suffers from either over-skilling or under-skilling (McGowan & Andrews, 2017). Persistent skills mismatch may be negatively associated with workers' mental health due to the effort-reward imbalance (Siegrist, 2017), fear of skills obsolescence, and concern for their future job security. Previous studies on educational mismatch, an interrelated labor market phenomenon, have documented that educational mismatch can negatively influence physical and mental health outcomes (e.g., see Bracke et al., 2014; Dunlavy et al., 2016; Garcy, 2015). However, little research has been conducted to address skills mismatch and mental health. We argue that previous research on educational mismatch is insufficient to explain how skills mismatch affects mental health outcomes for two reasons: First, the mechanisms behind the relationship between skills mismatch and health are different in that the pathways regarding work-related stress are more relevant compared with social status inconsistency or relative deprivation (Dunlavy et al., 2016). Second, most literature on educational mismatch and mental health primarily focused on overeducation. However, in the context of skills mismatch, research should also examine the impact of under-skilling. As a result, we aim to address the gap in the literature by investigating the association between skills mismatch and mental health outcomes in Korea. Korea provides an interesting case because it shows a substantial proportion of over-/under-skilled workers (*The 6th Korean Working Conditions Survey*, 2020), and skills mismatch has emerged as an important societal issue. This study has policy relevance in that it may highlight skills mismatch as a work-related social determinant of health among workers. Accordingly, we ask the following research questions: (1) How are the respondent's skills mismatch statuses and mental health related? (2) How does this association differ by their employment security?

Data and Methods:

The data for this study comes from the 6th Korean Working Conditions Survey (KWCS) conducted by the Occupational Safety and Health Research Institute of Korea in 2020. The KWCS contains rich information on respondents' work conditions, work safety, and socioeconomic characteristics. Our study population consists of employees aged 25 and 64 who reported their self-assessed skills mismatch status and WHO-5 subjective well-being scores in the sixth survey. We exclude the self-employed and unpaid family workers. Foreign-born workers are also excluded since their numbers were very few in the dataset, and their skills mismatch status may be determined by the factors linked with their immigration. As a result, 25,074 respondents remain in the study sample. While the main focus of the study is on the 6th KWCS, we also use the 5th KWCS, collected in 2017, for comparison since the fact that the latest survey was conducted during the Covid-19 may introduce unintended influence on the main findings. The Korean Working Conditions Survey is a publicly released dataset. Thus, this study was exempt from informed consent by the Institutional Review Board of Seoul National University (IRB No. E2203/002-001).

The outcome of this study is depressive disorder measured by the WHO-5 subjective well-being score. Following the literature, respondents are identified as having a depressive disorder if their total WHO-5 score is below 13 (Krieger et al., 2014; Topp et al., 2015). The independent variable of this study is workers' self-assessment of their skills mismatch statuses. Employment security is measured by workers' labor contract types and terms.

We utilize multiple logistic regression adjusting for potential confounders to answer our first research question. Then, we add interaction terms between skills mismatch status and employment contract length to see if employment security modifies the association between skills mismatch and depressive disorder. All statistical analyses were conducted using STATA Statistical Software: Release 17 (StataCorp LP, College Station, Texas).

Preliminary results:

The preliminary results show that both over-skilling and under-skilling are associated with a higher probability of depressive disorder (OR: 1.333, 95% CI: 1.242-1.423 for under-skilled status, and OR: 1.081, 95% CI: 1.007-1.154 for over-skilled status) adjusted for sex, age, educational attainment, occupation, employment contract length, and recent technological change at the

workplace. Interaction test results show that these associations are stronger among employees with more secure employment contracts, although the interaction terms are not statistically significant. As mentioned above, we conducted the same analysis using the respondents from the 5th KWCS data. Overall, we find the same associations between skills mismatch status and depressive disorder, although the odds ratios in the 5th KWCS analysis were generally smaller and with less statistical significance. So far, our findings are in line with the previous findings regarding educational mismatch and mental health. Still, the association is stronger among the under-skilled workers.

These findings imply that skills mismatch is a relevant work-related social determinant of health among Korean workers. However, this study could not address any causal relationships due to its cross-sectional data. Therefore, further studies should employ a longitudinal study design and investigate the long-term effects of skills mismatch on mental health.

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