Title: Does the impact of unemployment on mental health depend on previous employment conditions? A Longitudinal Study of Swedish Workers

Background

Adverse life events are usually defined as events contrary to individual and societal needs and expectations (Cohen et al., 2019). The range of potential adverse events that individuals may encounter over the life course is extensive, encompassing experiences such as job loss, illness or injury, bereavement, divorce, and numerous other life disruptions. However, they all share the fact that they may negatively affect those who experience them. As the life-course literature has consistently shown, adverse events can have significant long-term negative impact on health and well-being (Aquino et al., 2022).

Although most individuals encounter at least some of these events over the life course, their consequences can vary substantially across individuals, largely depending on the resources—such as material, social, and cultural assets and skills—available to them for coping with and mitigating the impact of such experiences (Aquino et al., 2022; Mangot-Sala et al., 2021). These differential capacities to buffer adverse events may, in turn, contribute to the persistence or even exacerbation of social inequalities across social groups.

Among the many types of adverse life events, **unemployment** stands out as a particularly consequential one for mental health. Losing a job often entails the sudden loss of income, identity, and daily structure, alongside diminished social support and perceived social status (Herbig et al., 2013; McKee-Ryan et al., 2005; Thomson et al., 2023). Unemployment is thus widely recognized as a significant risk factor for ill health, especially poor mental health, contributing to elevated stress, anxiety, and depression (Gebel & Voßemer, 2014; Norström et al., 2014; Paul & Moser, 2009; Strandh et al., 2014). Conversely, poor mental health can also hinder re-entry into the labour market, as mental disorders are often accompanied by stigma, discrimination, and reduced social support (WHO, 2022). This bidirectional relationship can create a cumulative cycle, where job loss and mental ill-health reinforce each other over time, leading to prolonged exclusion from stable employment and further psychological distress (Olesen et al., 2013).

Importantly, not everyone faces the same risk of unemployment or its consequences. Individuals with lower socioeconomic status (SES) are more likely to become unemployed and typically possess fewer resources to cope with the financial and psychosocial strain that follows. Employment conditions also play a crucial role. Non-standard employment, i.e. jobs that differ from standard full-time, permanent employment with social benefits and labour protections (such as temporary work or platform work) (Bosch, 2004; Julià et al., 2017) are associated with greater job insecurity and a higher risk of job loss due to weaker employment protection (Thern et al., 2023). This is particularly true for precarious forms of non-standard employment, characterised by insecure working conditions, insufficient income, and a lack of rights and protections (Kreshpaj et al., 2020; Rodgers et al., 1989).

In this context, assessing the **type of employment a** person held before becoming unemployed is essential. Employment conditions shape both exposure to job loss and its subsequent health impacts. For most people, employment represents the primary source of income and, in many Western societies, serves as a gateway to basic social rights such as healthcare and social security (Gebel & Voßemer, 2014). Thus, losing a secure, well-protected job may have different implications for mental health and recovery prospects than losing a precarious or temporary one. Understanding these differences is critical to fully capturing how unemployment operates as an adverse life event and how its health consequences are socially stratified.

Drawing on existing studies that have analysed differential effects of adverse events, two counterfactual scenarios can be formulated. On the one hand, individuals transitioning from

precarious jobs to unemployment may already have poorer mental health, potentially muting the additional impact of job loss. On the other, the negative effects of precarious work and unemployment could accumulate (Bierman et al., 2021), leading to a stronger decline in well-being. In contrast, individuals from secure, well-paying jobs might experience a sharper drop in mental health due to the sudden loss of stability and resources—or, conversely, the negative impact may be buffered by unemployment benefits and higher protection levels.

While extensive research has documented the adverse mental health effects of both unemployment and precarious employment, less is known about whether these effects depend on individuals' employment conditions prior to job loss. Using Swedish population register data, this study addresses this gap by examining whether the mental health consequences of unemployment vary according to whether individuals were previously in standard or non-standard employment.

Sweden provides a compelling case to investigate the potential heterogeneity in the detrimental mental health effects of unemployment between standard and precarious employees. Universal healthcare to all residents regardless of employment situation (Ludvigsson et al., 2025), along with comprehensive unemployment benefits and active labour market policy in Sweden can alleviate the aforementioned negative health effects of unemployment. Nonetheless, the Swedish welfare system has been traditionally based on standard employment relationships, thus unemployment insurance and sickness benefits are less accessible for non-standard employees, compared to standard employees (Kvart et al., 2025). At the same time, the prevalence of non-standard employment has increased markedly in Sweden over recent decades (Bodin et al., 2022), potentially undermining the universalism of its welfare system.

By situating the analysis in this context, the study contributes to understanding how institutional arrangements and changing labour market structures interact to shape the mental health impact of unemployment. The findings may also inform policy efforts to mitigate these inequalities in a democratic welfare state facing the growing challenge of labour market precarization.

Methods

This is an event-based cohort study, where the baseline is defined at the time of the event (unemployment) for the exposed group, and a randomized time-zero is defined for the control group, and mental health outcomes are assessed for up to five years of follow-up after baseline. Employment conditions one and two years prior to baseline are assessed. This design allows us to examine both the antecedents and the long-term health consequences of unemployment, as well as how these vary depending on prior employment conditions.

The study is based on the Swedish Work, Illness, and Labour Market Participation (SWIP) cohort, a register-linked cohort including everyone aged 16–64 registered in Sweden in 2005 (around 5.8 million individuals). Information on unemployment and previous employment conditions is retrieved from the Longitudinal Integration Database for Health Insurance and Labour Market Studies (LISA. Unemployment is defined as "being unemployed for 90 days or more" during the preceding year. Employment conditions are assessed using the 2.0 version of the Swedish Register-based Operationalization of Precarious Employment (SWE-ROPE), which provides multidimensional indicators of employment quality, including aspects such as income, job stability, contractual terms, and union coverage. The SWE-ROPE results in a score ranging from -2 to 9, which is then categorized into: "Standard Employment", "Substandard Employment", and "Precarious Employment". The outcome of interest -mental disorders- is assessed using data from the National Patient Register (inpatient and outpatient care) and the National Prescribed Drug Register. Mental disorders are defined as having either a diagnosis of mental and behavioural disorders (ICD-10 codes F00–F99), or a prescription of psychiatric medications (Anatomical Therapeutic Chemical classification codes N05–N06).

The study relies on time-to-event analyses to assess whether the mental health impact of unemployment depends on prior employment conditions. Individuals are followed for five years from the baseline year (unemployment or equivalent baseline) until the occurrence of a mental health event, death, migration, or the end of follow-up (five years after baseline), whichever occurs first. Cox proportional hazard models are calculated. The models include an interaction term between unemployment and employment conditions, allowing us to test whether the effect of unemployment varies depending on whether the job lost was standard, substandard or precarious. All models are adjusted for relevant sociodemographic covariates (age, sex, educational level, migration background, and partner status). Sensitivity analyses will explore alternative definitions of unemployment duration, as well as stratified analyses by age and occupation. The results are presented as adjusted hazard ratios (AHR) with 95% confidence intervals (95% CI). All analyses were conducted using Stata 19.5

Preliminary findings

Compared to those who did not experience unemployment (the reference group), those who were unemployed had an increased risk of mental health disorders (AHR: 1.93, 95% CI: 1.80–2.06). Compared to those who were in standard employment, substandard employees (AHR: 1.27, 95% CI: 1.22–1.32) and precarious employees (AHR: 1.48, 95% CI: 1.37–1.60) also showed increased risks of mental health disorders. Testing the interaction between unemployment and employment type shows that the association between unemployment and mental health disorders is stronger among substandard employees (point estimate: 1.21, 95% CI: 1.12–1.30) and precarious employees (point estimate: 1.32, 95% CI: 1.17–1.51). Therefore, our findings indicate that individuals who were in non-standard employment may be more vulnerable to the negative mental health effects of unemployment. As a next step, we plan to explore subgroup heterogeneity by sex and age group.

Conclusions

Employment conditions prior to job loss play a crucial role in shaping the mental health consequences of unemployment. Policies should address both job insecurity as well as job loss as interconnected processes contributing to mental health inequalities.

References

Aquino, T., Brand, J. E., & Torche, F. (2022). Unequal effects of disruptive events. *Sociology Compass*, *16*(4), e12972. https://doi.org/10.1111/soc4.12972

Bierman, A., Upenieks, L., Glavin, P., & Schieman, S. (2021). Accumulation of economic hardship and health during the COVID-19 pandemic: Social causation or selection? *Social Science & Medicine*, *275*, 113774. https://doi.org/10.1016/j.socscimed.2021.113774

Bodin, T., Matilla-Santander, N., Selander, J., Gustavsson, P., Hemmingsson, T., Johansson, G., Jonsson, J., Kjellberg, K., Kreshpaj, B., Orellana, C., Wadensjö, E., & Albin, M. (2022). Trends in Precarious Employment in Sweden 1992–2017: A Social Determinant of Health. *International Journal of Environmental Research and Public Health*, *19*(19), Article 19. https://doi.org/10.3390/ijerph191912797

Bosch, G. (2004). Towards a New Standard Employment Relationship in Western Europe. *British Journal of Industrial Relations*, *42*(4), 617–636. https://doi.org/10.1111/j.1467-8543.2004.00333.x

Cohen, S., Murphy, M. L. M., & Prather, A. A. (2019). Ten Surprising Facts About Stressful Life Events and Disease Risk. *Annual Review of Psychology*, *70*, 577–597. https://doi.org/10.1146/annurev-psych-010418-102857

Gebel, M., & Voßemer, J. (2014). The impact of employment transitions on health in Germany. A difference-in-differences propensity score matching approach. *Social Science & Medicine*, *108*, 128–136. https://doi.org/10.1016/j.socscimed.2014.02.039

Herbig, B., Dragano, N., & Angerer, P. (2013). Health in the Long-Term Unemployed. *Deutsches Ärzteblatt International*, *110*(23–24), 413–419. https://doi.org/10.3238/arztebl.2013.0413

Julià, M., Vanroelen, C., Bosmans, K., Van Aerden, K., & Benach, J. (2017). Precarious Employment and Quality of Employment in Relation to Health and Well-being in Europe. *International Journal of Health Services*, *47*(3), 389–409. https://doi.org/10.1177/0020731417707491

Kreshpaj, B., Orellana, C., Burström, B., Davis, L., Hemmingsson, T., Johansson, G., Kjellberg, K., Jonsson, J., Wegman, D. H., & Bodin, T. (2020). What is precarious employment? A systematic review of definitions and operationalizations from quantitative and qualitative studies. *Scandinavian Journal of Work, Environment & Health*, *46*(3), 235–247. https://www.jstor.org/stable/27004193

Kvart, S., Cuervo, I., Gunn, V., Lewchuk, W., Bosmans, K., Davis, L., Escrig-Piñol, A., Östergren, P.-O., Padrosa, E., Vives, A., Zaupa, A., Ahonen, E. Q., Álvarez-López, V., Bolíbar, M., Diaz, I., Gutiérrez-Zamora, M., Ivarsson, L., Julià, M., Muntaner, C., … Baron, S. L. (2025). Labour and social protection gaps impacting the health and well-being of workers in non-standard employment: An international comparative study. *PLOS ONE*, *20*(3), e0320248. https://doi.org/10.1371/journal.pone.0320248

Ludvigsson, J. F., Bergman, D., Lundgren, C. I., Sundquist, K., Geijerstam, J.-L. af, Glenngård, A. H., Lindh, M., Sundström, J., Kaarme, J., & Yao, J. (2025). The healthcare system in Sweden. *European Journal of Epidemiology*, *40*(5), 563–579. https://doi.org/10.1007/s10654-025-01226-9

Mangot-Sala, L., Smidt, N., & Liefbroer, A. C. (2021). The association between unemployment trajectories and alcohol consumption patterns. Evidence from a large prospective cohort in The Netherlands. *Advances in Life Course Research*, *50*, 100434. https://doi.org/10.1016/j.alcr.2021.100434

McKee-Ryan, F., Song, Z., Wanberg, C. R., & Kinicki, A. J. (2005). Psychological and Physical Well-Being During Unemployment: A Meta-Analytic Study. *Journal of Applied Psychology*, *90*(1), 53–76. https://doi.org/10.1037/0021-9010.90.1.53

Norström, Virtanen, P., Hammarström, A., Gustafsson, P. E., & Janlert, U. (2014). How does unemployment affect self-assessed health? A systematic review focusing on subgroup effects. *BMC Public Health*. https://doi.org/10.1186/1471-2458-14-1310

Olesen, S. C., Butterworth, P., Leach, L. S., Kelaher, M., & Pirkis, J. (2013). Mental health affects future employment as job loss affects mental health: Findings from a longitudinal population study. *BMC Psychiatry*, *13*, 144. https://doi.org/10.1186/1471-244X-13-144

Paul, K. I., & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior*, *74*(3), 264–282. https://doi.org/10.1016/j.jvb.2009.01.001

Rodgers, G., Rodgers, J., Internationales Institut für Arbeitsfragen, & Institut du Travail (Eds.). (1989). *Precarious jobs in labour market regulation: The growth of atypical employment in Western Europe*. Internat. Inst. for Labour Studies [u.a.].

Strandh, M., Winefield, A., Nilsson, K., & Hammarström, A. (2014). Unemployment and mental health scarring during the life course. *European Journal of Public Health*, *24*(3), 440–445. https://doi.org/10.1093/eurpub/cku005

Thern, E., Matilla-Santander, N., Bodin, T., & Hemmingsson, T. (2023). Precarious employment at a young age and labor-market marginalization during middle-adulthood: A register-linked cohort study. *Scandinavian Journal of Work, Environment & Health*, *49*(3), 201–210. https://doi.org/10.5271/sjweh.4079

Thomson, R. M., Kopasker, D., Leyland, A., Pearce, A., & Katikireddi, S. V. (2023). To what extent does income explain the effect of unemployment on mental health? Mediation analysis in the UK Household Longitudinal Study. *Psychological Medicine*, *53*(13), 6271–6279. https://doi.org/10.1017/S0033291722003580

WHO. (2022). *World mental health report: Transforming mental health for all*. World Health Organization.