THE LONGITUDINAL ASSOCIATION BETWEEN WORK STRESSORS AND BURNOUT BEFORE AND AFTER THE PANDEMIC: A LATENT TRANSITION ANALYSIS

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Introduction

In the post-pandemic era, healthcare organizations are urged to proactively prepare for future crises to prevent burnout among their workers [1]. Consequently, it is important to investigate long-lasting work stressors influencing this condition. This poses several methodological challenges: *i)* the need for longitudinal studies assessing work stressors and burnout before and during the pandemic; *ii)* the need to identify individuals experiencing burnout, considering that burnout is multidimensional and that there are no established cut-offs in questionnaires for diagnosis; *iii)* the lack of longitudinal measurement invariance of questionnaires; *iv)* the need to assess the role of predictors on burnout before and during the pandemic and on the transitions between burnout profiles while maintaining overall type-I error control. Latent transition analysis (LTA), a person-centred analysis that classifies individuals based on their response profiles and comprehensively assesses the role of predictors on profile membership and transitions, might address these challenges.

Objective

The aim of this study was to assess the role of work stressors in influencing burnout profiles membership before and during COVID-19 and the transitions between profiles over time.

Methods

A representative sample of nurses and nurse assistants (n = 377) working in a university hospital in Varese participated to a two-wave longitudinal study including a pre-COVID-19 survey (Aug 2019) and a survey during COVID-19 (Dec 2020 - Jan 2021). Seven work stressors (Health and Safety Executive Stress Indicator Tool) and work satisfaction were assessed before COVID-19, burnout (Maslach Burnout Inventory (MBI)) was assessed both before and during COVID-19.

The statistical analyses were performed using an LTA approach [2]. Burnout profiles before COVID-19 and, separately, during COVID-19 were identified using the responses to the MBI subscales. The longitudinal invariance of these profiles was assessed comparing the Log-likelihood (LL) of a model that constrains parameters to be equal over time to that of an unconstrained model.

The role of work stressors on the identified profiles was assessed using a 3-step method involving the extraction of profiles, the assignment of subjects to profiles based on their posterior profile membership probabilities, and the estimation of the role of covariates using profile assignment as the observed dependent variable [3]. Covariates were added in nested models at increasing complexity and models were retained if their fit was better than the previous one, based on LL difference tests (Figure 1).
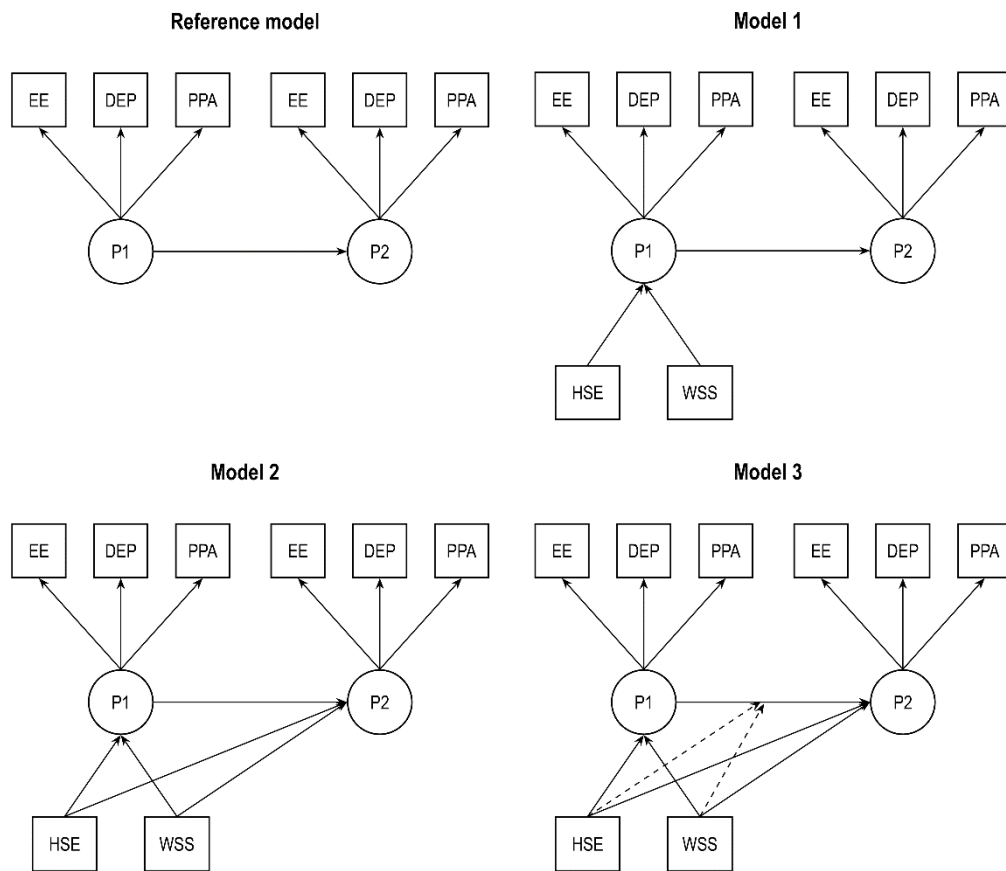
Figure 1. Latent Transition Analysis models employed to assess the role of work stressors on burnout profiles and transitions. EE = Emotional Exhaustion; DEP = Depersonalization; PPA = Poor Personal Accomplishment; HSE = Health and Safety Executive Indicator tool; WSS = Work Satisfaction Scale; P1 = Profiles before COVID-19; P2 = Profiles during COVID-19.

The reference model included burnout profiles and their association over time. The work stressors were added to this model as predictors of profile membership before COVID-19 (Model 1) and, then, also as predictors of profile membership during COVID-19 (Model 2). Subsequently, their interaction with the profiles before COVID-19 was added to predict profile membership during COVID-19 (Model 3). Next, we evaluated the role of age, sex and job title by adding them to the model retained based on the previous steps. Finally, since we anticipated convergence issues of model 3 due to the high number of parameters, for selected profiles before COVID-19 we planned multinomial logistic regression analyses to assess the association of work stressors with the transition to a "worse" profile during COVID-19.

Results

Three profiles (LL difference test vs two profiles = 46.26, p<.001) were identified before COVID-19 and labelled Engaged (n = 225, 67%), Ineffective (n = 50), and Burnout (n = 62). During COVID-19, the identified profiles were Engaged (n = 126, 37%), Overextended (n = 171) and Severe burnout (n = 40) (LL difference test vs two profiles = 74.58, p<.001). The profiles were not invariant over time (Constrained vs unconstrained model LL difference = 362.79, p<.001). The conditional probabilities of transitioning to Severe burnout were 2%, 21% and 50% in the three pre-pandemic profiles, respectively. In the best LTA model, work stressors were associated with burnout profiles both before and during COVID-19 (Model 2 vs Model 1 LL difference = 45.66, p<.001). The addition of age, sex and job title did not improve model fit. Due to the number of

parameters and the low conditional probabilities of transitioning between some profiles, Model 3 did not converge.

In Model 2, work stressors were associated with both pre-pandemic and pandemic burnout profiles. In addition, among Engaged and Ineffective nurses, participation in the work organisation (OR=0.89, IC95%: 0.79-0.99), role clarity (0.44, 0.20-0.97) and work satisfaction (0.15, 0.04-0.60) protected from transitioning to the Overextended or Severe burnout profiles during the pandemic. Conversely, managers' support (2.28; 1.15-4.52), peers' support (1.21, 1.03-1.43) and hostile relationships (1.17, 1.03-1.33) increased the likelihood of transition to Overextended or to Severe burnout. Finally, demands favoured transitioning from Engaged to Overextended (1.08, 1.01-1.17), but protected from transitioning to Severe burnout (0.75, 0.59-0.96).

Conclusions

The LTA overcame the lack of clinical cut-offs for burnout and provided a comprehensive framework to assess the role of the work stressors on profile membership and transitions. However, the generalizability of the identified profiles is uncertain, and the combination of a high number of parameters with low conditional transition probabilities may hinder model convergence. Work stressors were associated with burnout profiles before and during the pandemic and with the probability of previously burnout-free workers to transition to emotional exhaustion or to severe burnout, reinforcing the notion that prevention and mitigation should begin before the crises outbreak.

References

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