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Explaining the relationship between precarious employment conditions and mental health among healthcare workers: the mediating role of psychological experience of work precarity

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ABSTRACT

The adverse effects of precarious employment on mental health are well-established, yet the mediating mechanisms require further elucidation to understand their impact. In line with Allan et al.'s (2021), work precarity framework, subjective psychological experiences (in this study, job insecurity, moral distress, and work/family (in)balance) are investigated as mediating mechanisms linking the "objective situation of precarious employment" (using the EPRES scale) to mental health. As hypothesized, psychological experiences of work precarity mediate the detrimental effects of precarious employment on mental health in a large sample of Belgian and Finnish healthcare workers ($n = 9041$). These findings provide a novel exploration of the complex mediational pathway of subjective psychological experiences. Our study thereby offers evidence for an explanatory model that reconciles materialist and psychological understandings of the relation between precarious employment and mental health.

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Burnout; mental health; precarious employment; work precarity

Introduction

Precarious employment (PE) is defined as a multidimensional concept that can be understood by the aggregation of unfavourable consequences for workers, particularly conditions and relations that are known risk factors for workers' health and well-being (Vanroelen et al., 2021). The multidimensional PE has been conceptualized with diverse dimensions; however, most studies refer to employment insecurity (contractual relationship insecurity, contractual temporariness, contractual underemployment, and multiple jobs), income inadequacy (income level), and the lack of rights and protection (lack of unionization, social security and regulatory support, and workplace rights) (Kreshpaj et al., 2020). These conditions – which can be defined as "objective job features" – are rooted in unequal power dynamics and have become exacerbated by broader macro-level developments in the global economy and political landscape, particularly the ascendancy of neoliberal ideologies and the consequent flexibilization of the workforce aimed at enhancing competitiveness (Standing, 2011; Vallas, 2015).

In epidemiological and health sociological research, a surge in studies linking typologies of precarious employment to health and well-being outcomes has been seen, especially in mental health (Benach et al., 2014). However, in most of these studies, the specific mechanisms linking "precarious employment" to mental health have largely remained a "black box." More recent contributions from the field of work psychology have tried to open that "black box" by conceptualizing precarity as a subjective experience of uncertainty (Seubert & Seubert, 2023). In particular, B. A. Allan et al. (2021) have proposed a framework for comprehending the subjective psychological dimensions of work precarity. While epidemiological research adopting an objective/materialist approach towards the phenomenon of precarious employment has been successful in demonstrating the link with adverse health and well-being outcomes (Julià et al., 2017; Rönnblad et al., 2019; Valero et al., 2021), we assume that recent contributions from work psychology can contribute by further conceptualizing the mechanisms linking PE and mental health.

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Consequently, we aim to explore the mental health impacts of PE mediated by the subjective experiences of work precarity among healthcare workers with empirical data collections in Belgium and Finland. These two nations share a number of societal similarities; therefore, they are suitable for testing the framework. In both countries, for example, over 90% of employees are covered by collective agreements, and GDP per capita is roughly at the same level (OECD, 2024). Therefore, although we recognize the limitations of cross-sectional data, we consider it highly suitable for examining the effects of precarious employment due to its breadth. Additionally, the global care work crisis caused by staff shortages necessitates a swift response through research, as it can help identify the underlying causes of the nursing shortage.

Precarity of the care workforce

Nursing and care work, despite being one of the most popular professions globally among women, continue to face social undervaluation (H. Allan et al., 2008), exemplified by factors such as low wages (ILO, 2023). This undervaluation can partly be attributed to the gendered nature of the work. Moreover, the largely publicly organized care sector is under constant threat of budget cuts or at least faces a situation in which budgets are not keeping up with the growth pace of care needs. Although working conditions are generally improving with the arrival of digitalization and technological applications, developed societies still struggle to provide care workers with both a physically and psychologically safe and ethically sustainable working environment (Blustein et al., 2022; Lyon, 2021). Moreover, there is a global worker shortage in the care sector, which places care workers at a disadvantage compared to other professions with ongoing healthcare budget cuts and increasing physical and psychological workloads (de Araújo et al., 2022). Nursing as a productive profession is a relatively recent development and is becoming more widespread only with the increase in women's education levels and their participation in the workforce (Silva & Ferreira, 2021). However, the status of nursing is still fraught with contradictions, fuelled by societal expectations of the nurturing instinct and caregiving duties traditionally associated with women (Ehrenreich & English, 2010).

These factors tend to interact with the occurrence of PE in care work. Further, in the care sector, there has been widespread adoption of flexible work arrangements and the implementation of new public management practices, along with the increasing commercialization of healthcare (Wall, 2015). These changes result in temporary work arrangements, relatively low wages, limited influence over work, and poor career development opportunities (Fité-Serra et al., 2019; Hult & Ring, 2024; Hult et al., 2022, 2023; Kallio et al., 2022). In earlier research, PE has been related to detrimental effects on care workers' health and well-being (Hult et al., 2022, 2023), but it also has implications for patient safety, leading to increased patient mortality rates (Dall'ora et al., 2020). These developments underscore the importance of understanding and addressing PE within the care sector.

Work precarity framework of subjective psychological experiences

The subjective psychological experience, feelings of insecurity, powerlessness regarding influence over work-related matters, and a lack of choice are central to the work precarity framework (B. A. Allan et al., 2021). In the psychological framework of work precarity, job insecurity, underemployment, and the presence or absence of decent work interact to shape individuals' perceptions of their work environment and their overall psychological well-being. According to the framework, the perceived insecurity occurs at three levels: (1) *precarity of work, (2) precarity at work, and (3) precarity from work*. These three levels or dimensions of work precarity capture various aspects of the psychological challenges individuals may encounter within the context of PE.

Precarity of work refers to the uncertainty and insecurity individuals experience with regard to the continuity of their employment, income, and social relationships. It encompasses fears related to the stability of one's job and the potential consequences of job loss on various aspects of life. Uncertainty about the continuity of one's job can lead to stress, anxiety, and a sense of instability (B. A. Allan et al., 2021). The utilization of temporary agency and "gig" workforce in healthcare has increased significantly due to severe shortages worldwide (Lien, 2023). The engagement of a temporary workforce is not solely an organizational necessity; many nurses opt for temporary contracts and casual gig work to gain control over their working pace and workload, seeking better work-life balance and compensation (Palukka & Tiilikka, 2011). Indeed, when this choice is voluntary, temporary work does not appear to be a source of perceived insecurity and stress; rather, temporary nurses' well-being is shown to be better compared to permanent workers (Hult et al., 2022). Despite the increased burden on nurses during the COVID-19 pandemic (Llop-Gironés et al., 2021), their perceived job insecurity decreased (Bußmann & Pomorin, 2023). However, research on temporariness among nursing professionals presents somewhat contradictory findings, as temporary nurses' job satisfaction was found to be lower than that of permanent staff (Panchal et al., 2022). Moreover, emotional and cognitive job insecurity, negative affect, and mental disorders were more prevalent among temporarily employed nurses (Katsaouni

et al., 2024). Job insecurity is, nevertheless, one of the factors in nursing that contributes to psychological distress (Liu et al., 2021).

Precarity at work involves uncertainty and unpredictability in the work environment, particularly with respect to psychosocial or physical safety. This includes bullying-related fears, discrimination, harassment, social rejection, or unsafe working conditions that can all impact an individual's well-being and sense of security while on the job. One prominent condition of uncertainty in care work is moral uncertainty, or moral dilemma or conflict, which might lead to moral distress (Mänttäri van der Kuip, 2020). Moral distress is defined as the discomfort and mental turmoil experienced when care workers are confronted with challenging patient care situations (Wilson et al., 2013). The factors contributing to moral distress include individual characteristics, such as feeling powerless to intervene in treatment or decision-making processes; team dynamics, such as colleagues' unprofessional or unethical behaviours; and structural constraints, like the emphasis on improving productivity at the expense of focusing on patients' needs. Nurses working under precarious employment conditions, characterized by unhealthy power structures, powerlessness, and an inability to influence their work, may be unable to perform their duties in accordance with their ethical framework, leading to moral distress (Sillero Sillero et al., 2023). The lack of psychological safety, which is essential for addressing unethical behaviour, is a central contributor to precarity at work.

Moral distress arises from constraints on a nurse's moral identity, relationships, and responsibilities within a morally uninhabitable workplace characterized by incoherent understandings and unsustainable practices. Moreover, moral distress may occur when an individual, due to real or perceived constraints, acts in a way they believe to be morally wrong (Deschenes et al., 2020). Moral distress manifests as psychological suffering, resulting in an experience of personal powerlessness and an inability to preserve all competing moral commitments (Foster et al., 2022). The experience of moral distress adversely affects workers' health and well-being, eliciting feelings of guilt, self-doubt, loss of confidence, and anger (Watts et al., 2023). It is a prevalent issue among care workers, given that nursing and care work can be characterized as moral labour (McCarthy & Gastmans, 2015), and it has emerged as a significant topic in recent research (Alimoradi et al., 2023).

Precarity from work pertains to the uncertainty and instability individuals face as a result of holding a job that fails to adequately meet their needs. It extends beyond the workplace to encompass daily life challenges such as difficulties in maintaining essential social relationships due to inadequate income or job conditions. Care work and nursing entail shift work and unpredictable schedules, posing challenges to maintaining social relationships and achieving a balanced work/family life. During periods of severe care worker shortages, individuals may face voluntary or involuntary overtime and extended workdays. Additionally, other job demands contribute to emotional exhaustion, further aggravating work-family conflict (Rhéaume, 2022). This conflict leads to heightened burnout and, subsequently, intentions to leave the profession (Matsuo et al., 2023). An unsatisfactory balance between work and other aspects of life also manifests in lower levels of perceived meaningfulness at work, job satisfaction, and organizational commitment (B. A. Allan et al., 2021).

Objective situations and conditions of precarious employment might cause subjective psychological precarity in various forms. In this study, we introduce common care work-specific factors. By broadly applying the work precarity framework (B. A. Allan et al., 2021), the following hypotheses are set:

Hypothesis 1. Job insecurity mediates the negative effect of precarious employment to burnout and mental well-being.

Hypothesis 2. Moral distress mediates the negative effect of precarious employment to burnout and mental well-being.

Hypothesis 3. Work-life unbalance mediates the negative effect of precarious employment to burnout and mental well-being.

Access to personal resources

Understanding the distinction between "objective" conditions and relations of employment deemed "precarious" and the appraisal of these conditions and relations is crucial for addressing the multifaceted impact of work precarity on individuals' job attitudes, behaviours, mental health, and overall quality of life. However, other psychological resources as well may moderate the harmful consequences of the subjective experience of work precarity. It can be assumed that individual differences in access to personal resources play a crucial role in buffering or exacerbating the experience of work precarity. Having resources can help individuals cope with external stressors associated with PE.

Individual resources such as intrinsic motivation or a "calling" has the potential to mitigate the detrimental impacts of work precarity on well-being. The care professions, often regarded as a calling, significantly influence

career decisions and contribute to career longevity (Emerson, 2017). Within the care sector, a sense of calling has been linked to positive psychological health and work-related well-being (Hult et al., 2023), as well as factors like work motivation, job satisfaction, work engagement, and coping abilities in the face of job demands (Xu et al., 2020; Ziedelis, 2019). Based on the above-mentioned literature, we set the following hypothesis:

Hypothesis 4a. Calling moderates the relation of job insecurity to burnout and mental well-being.

Hypothesis 4b. Calling moderates the relation of moral distress to burnout and mental well-being.

Hypothesis 4c. Calling moderates the relation of work-life unbalance to burnout and mental well-being.

Objectives

We aim to investigate the relationship between PE, subjective experiences of work precarity, and their impact on subsequent mental well-being outcomes by following the framework proposed by B. A. Allan et al. (2021) in a large sample of Belgian and Finnish health care workers (Figure 1).

Materials and methods

Procedure

Belgian data collection and participants

The three main Belgian trade unions (ACV, ABVV and ACLVB) have facilitated access to the population through disseminating our survey among their members and sympathizers, using their targeted newsletters during the spring and summer of 2023 as well as social media accounts. The members of the trade union received information about the study, and participation was voluntary. Data were collected by a self-administrated online questionnaire and responding was regarded as providing informed consent. Two reminders were sent out during a total period of five months when the online survey was accessible to the respondents. The fieldwork underlying this study has been approved by the Ethical Committee of the Human Sciences of Vrije Universiteit Brussel (advice number ECHW_172.02). The participants in the Belgian sample were health and social care workers employed in four sub-sectors ($n = 4,619$): household and elderly care ($n = 189$), care for disabled people and youth with educational problems ($n = 599$), health care institutions ($n = 2,480$), and other (non-institutionalized) care providers ($n = 1,351$). Of the participants, 37.7% ($n = 2451$) had finished secondary education, 43.5% ($n = 2830$) had a Bachelor's degree, and 6,2% ($n = 407$) had a Master's degree or higher. About one third (31.4%, $n = 1426$) were Graduate or Bachelor level nurses and 16,3% ($n = 739$) were health care assistants. Other professions included social workers and personal care workers.

Finnish data collection and participants

The Finnish participants were health and social care workers approached by one of the biggest Finnish health and social care workers' trade unions. The trade union provided research permission (IRB) for the study and sent the invitation to participate in a survey in their newsletter in February 2023. The members of the trade union received information about the study, and participation was

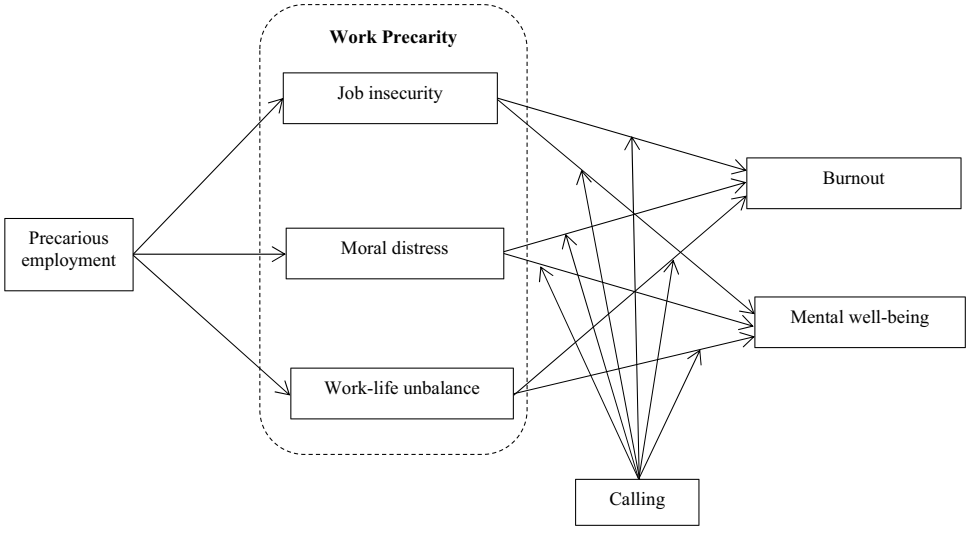

Figure 1. Hypothesized model adapted from the work precarity framework (B. A. Allan et al., 2021).

voluntary. Data were collected by a self-administrated online questionnaire and answering was regarded as providing informed consent. During a three-week period, two reminders were sent by the trade union. A total of 4,422 workers were included in this study, employed in the public sector ($n = 3,526$), such as hospitals, community health centres and kindergartens, private sector ($n = 793$), e.g., private clinics and nursing homes, and third sector (non-profit) ($n = 103$). Of the workers, 43,8 % ($n = 1936$) had a vocational degree, 45,9 % ($n = 2030$) had a Bachelor's degree and ($n = 436$) and 9,9 % had a Master's degree of higher. Most of the participants were registered nurses ($n = 2288$) and practical nurses ($n = 667$). Other professions included, e.g., physiotherapists, dental hygienists, and laboratory nurses.

Measures

Precarious employment

The Employment Precariousness Scale (EPRES-BE), further developed from the original EPRES (Vives et al., 2010), was used to measure PE (Vanroelen et al., 2024). The scale contains eight subscales: 1) temporariness (temporary employment contract, 1 item), 2) disempowerment (formal and informal empowerment, participation, 4 items), 3) vulnerability (authoritarianism, access to information and procedural justice, 11 items), 4) rights (lack of worker rights, 4 items), 5) enforceability of rights (not been able to exercise rights, 6 items), 6) working times (predictability of working times, unsocial and flexible hours, long hours/overwork, 10 items), 7) wages (low monthly net income, 1 item) and 8) training (lack of training by the employer, 1 item). All the items were coded from 0 (least precarious) to 1 (most precarious). A subscale score, including several items, was calculated as a mean of the item scores. Cronbach's alpha was 0.86 in this study.

Precarity of work

Precarity of work was approximated by job insecurity, evaluated with two items: fear of job loss ("There is a danger that I will soon lose my job") and uncertainty about the future ("I have no certainty about the future of my job"). Items were assessed from 1 (completely disagree) to 4 (completely agree), with a higher mean score indicating higher job insecurity.

Precarity at work

Precarity at work was approximated by *moral distress*. Five items from The Moral Distress Scale-Revised (Hamric et al., 2012) were used to measure moral distress. An item example is "I have to work with levels of nurse or other care provider staffing that I consider unsafe". The items were answered with a Likert scale ranging from 1 (never) to 5 (very frequently). The higher score indicated higher moral distress. Cronbach's alpha was $\alpha = 0.76$.

Precarity from Work

Precarity from work was approximated by *work-life unbalance* with one question: "To what extent can you currently combine your working hours with your social and family obligations outside of work?". Response options were reversed to capture negative work-life balance and scores ranged from 1 (very well) to 4 (poorly).

Outcome Variables

Mental well-being. Mental well-being was assessed using the WHO-5 Well-being Index (Topp et al., 2015), which comprises five Likert scale items with response options ranging from 1 (never) to 6 (all the time). A general question was, "How have you been feeling during the last two weeks?". Examples of the items were "I have felt cheerful and in good spirits" and "I have felt calm and relaxed". A total score was computed as a mean of all the items, with a higher score indicating better mental well-being. Cronbach's alpha was 0.88.

Burnout. Burnout was measured with the four-item Burnout Assessment Tool BAT-4 (Hakanen & Kaltiainen, 2022). It is a condensed version of the original 23-item BAT (Schaufeli et al., 2020), designed to gauge four fundamental dimensions of burnout: Exhaustion ("At work, I feel mentally exhausted"), Mental detachment from work ("I struggle to find any enthusiasm for my work"), Cognitive impairment ("At work, I have trouble staying focused"), and Emotional impairment ("At work, I am unable to control my emotion"). Participants provided responses on a five-point Likert scale ranging from 1 (never) to 5 (always), where a higher score indicated a greater degree of burnout. Cronbach's alpha was 0.72.

Moderating variable

Calling. Calling was measured with three statements derived from the Calling and Vocation Questionnaire Presence (CVQ) (Dik et al., 2012), each statement corresponds to one of the three subdimensions of calling; namely, transcendent summons, purposeful work, and prosocial orientation. The statements were answered from 1 (Not at all true of me) to 4 (Absolutely true of me), the higher score indicating a higher perceived calling. An example of such a statement is "I believe that I have been called to my current line of work". Cronbach's alpha was 0.77.

Control variables

Age, gender and country were added as control variables. Controlling for age and gender is justified by the

fact that younger workers and women are more often at risk of ending up with more precarious jobs and positions (e.g., Hult et al., 2023; Jonsson et al., 2019).

Data analysis

Cases with more than 50% missing values in EPRES-BE were removed ($n = 290$). The dependent and independent variables were obtained from the online surveys discussed above; therefore, the common method bias was detected with Harman's one-factor test (HSF) (Kock et al., 2021) and unmeasured latent variable technique (UMLV) (Podsakoff et al., 2024). The HSF showed that one factor explained 17.1% of the variance. The UMLV produced the following fit indices: the baseline model (without controls and interaction) had a $\chi^2 = 88.73$, RMSEA of 0.068, CFI of 0.992. The model with the method factor showed a reduced fit: $\chi^2 = 282.39$, RMSEA of 0.077, CFI of 0.975, indicating that accounting for method bias reduced model fit. The tests suggested that the risk of bias was low.

Correlations between the study scales were calculated as Pearson's correlation coefficients, and the internal consistencies of the scales were indicated with Cronbach's alphas. The differences in the study variables between the countries were tested with *t*-tests and Cohen's *d*. Confirmatory factor analysis was run to test the structure of EPRES-BE scale, and additionally, with Work precarity factors job insecurity, moral distress and work-life unbalance. Finally, structural equation models were defined to test the hypothesized and moderation models. The models were calculated using the maximum likelihood method and the model fit was acceptable with the following fit indices: Comparative Fit Index (CFI) ≥ 0.90, Root Mean Square Error of Approximation (RMSEA) < 0.06 (Hu & Bentler, 2009). All the analyses were performed with Stata version 18.

Results

The combined dataset included 9,041 participants. They were predominantly women (88.5%) with an average age of 46.7 years (SD = 11.0), ranging from 18 to 67. The most common educational level was a bachelor's degree (43.7%), and half of the participants were registered nurses and assistant nurses. The Finnish workers were slightly younger (46.4 years) compared to Belgian workers (46.9 years). Moreover, the Belgian sample included more men (15.3%) compared to the Finnish sample (6.6%).

The study variables were compared between the two countries, and burnout was the only measure that indicated no difference (Table 1). The perceived precarious employment (PE) and work precarity indicators were significantly at a higher level among the Belgian care workers except for the temporariness and wages dimension. The Finnish care workers had more frequently temporary employment contracts and lower wages. Moreover, Belgian care workers perceived higher levels of "calling" in their work. Mental well-being was better among the Finnish workers. However, all the effect sizes of the differences were small, as shown by the Cohen's *d* estimates (Table 1).

PE correlated positively with job insecurity ($r = 0.334$), moral distress ($r = 0.371$), work-life unbalance ($r = 0.255$), and burnout ($r = 0.238$), and negatively with mental well-being ($r = -0.286$) (Table 2). Job insecurity, moral distress and work-life unbalance had from weak to moderate

Table 1. Study variables compared between the countries (all transformed to scale 0–1).

	Belgium ($n = 4619$)		Finland ($n = 4422$)			
	M	Sd	M	Sd	*p*	Cohen's *d*
Precarious employment	0.32	0.14	0.27	0.14	<0.001	−0.36
Temporariness	0.04	0.21	0.11	0.31	<0.001	0.26
Disempowerment	0.40	0.30	0.30	0.23	<0.001	−0.35
Vulnerability	0.34	0.20	0.25	0.18	<0.001	−0.48
Rights	0.25	0.24	0.18	0.26	<0.001	−0.28
Enforceability of rights	0.26	0.26	0.20	0.22	<0.001	−0.25
Working times	0.35	0.19	0.29	0.17	<0.001	−0.46
Wages	0.38	0.42	0.41	0.41	<0.001	−0.13
Training	0.52	0.50	0.43	0.50	<0.001	−0.17
Job insecurity	0.24	0.28	0.21	0.25	<0.001	−0.16
Fear of losing job	0.19	0.24	0.15	0.27	<0.001	−0.12
Uncertain future	0.33	0.35	0.27	0.32	<0.001	−0.18
Moral distress	0.49	0.20	0.40	0.21	<0.001	−0.41
Work-life unbalance	0.42	0.27	0.45	0.26	<0.001	0.11
Calling	0.62	0.24	0.60	0.25	<0.001	−0.08
Mental well-being	0.53	0.20	0.57	0.18	<0.001	0.23
Burnout	0.39	0.17	0.40	0.16	0.138	0.03

Table 2. Correlations between the EPRES dimensions and outcomes.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 EPRES Total	1													
2 EPRES Temporariness	0.389**	1												
3 EPRES Disempowerment	0.334**	0.036**	1											
4 EPRES Vulnerability	0.541**	0.040**	0.393**	1										
5 EPRES Rights	0.511**	0.178**	0.180**	0.223**	1									
6 EPRES Enforceability of rights	0.561**	0.071**	0.291**	0.477**	0.277**	1								
7 EPRES Working times	0.275**	–0.018^{ns}	0.140**	0.195**	0.076**	0.261**	1							
8 EPRES Wages	0.488**	0.110**	0.154**	0.114**	0.125**	0.094**	–0.108**	1						
9 EPRES Training	0.640**	0.054**	0.115**	0.195**	0.106**	0.134**	0.038**	0.096**	1					
10 Job insecurity	0.334**	0.229**	0.159**	0.469**	0.150**	0.222**	0.020*	0.101**	0.113**	1				
11 Moral distress	0.371**	–0.008^{ns}	0.236**	0.528**	0.142**	0.387**	0.309**	0.056**	0.142**	0.232**	1			
12 Work-life unbalance	0.255**	0.009^{ns}	0.172**	0.325**	0.109**	0.291**	0.331**	–0.039**	0.099*	0.151**	0.319**	1		
13 Mental well-being	–0.286**	–0.007^{ns}	–0.204**	–0.416**	–0.126**	–0.251**	–0.096**	–0.095**	–0.128**	–0.283**	–0.333**	–0.391**	1	
14 Burnout	0.238**	–0.019^{ns}	0.159**	0.413**	0.087**	0.228**	0.074**	0.049**	0.117**	0.269**	0.397**	0.352**	–0.558**	1

*$p < 0.05$, **$p < 0.001$, ^{ns}Non-significant.

Table 3. Confirmatory factor analyses of the EPRES-BE structure and the work precarity factors.

	χ^2	df	CFI	RMSEA
EPRES-BE	428.74	15	0.942	0.054
EPRES-BE + Job insecurity	1703.46	23	0.833	0.089
EPRES-BE + Moral distress	1160.59	24	0.897	0.071
EPRES-BE + Work-life unbalance	1237.89	25	0.868	0.072

Table 4. Model fit indices for alternative models.

	χ^2	df	CFI	TLI	RMSEA
Model 0[1]	5439.11	265	0.93	0.91	0.046
Model 1[2]	5442.15	269	0.93	0.91	0.046
Model 2[3]	5439.31	268	0.93	0.91	0.046
Model 3[4]	6465.58	311	0.92	0.90	0.046

[a]Measurement model, [2]Hypothesized model without interactions, [3]Model 1 + direct paths to mental well-being and burnout, [4]Model 2 + interactions.

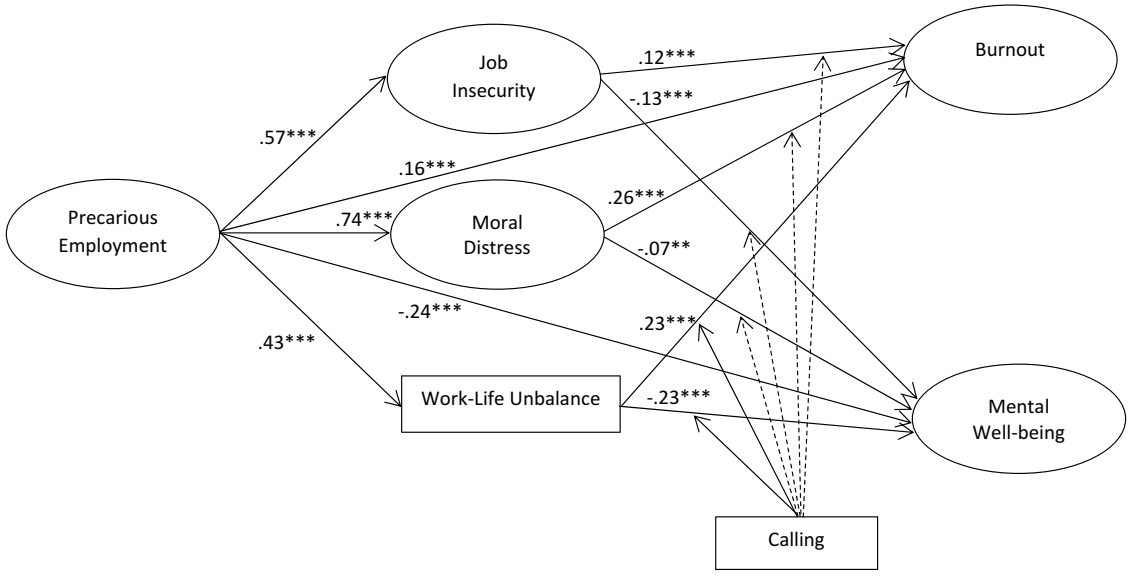

Figure 2. Hypothesized model with moderation. Calling*Work-life unbalance > burnout (β = 0.03, $p < 0.001$), calling*Work-life unbalance > mental well-being (β = −0.02, $p = 0.017$). Standardized coefficients. ***$p < 0.001$, **$p < 0.01$. Dashed lines non-significant. Controlled for age and gender.

positive intercorrelations. They correlated negatively with mental health and positively to burnout (from weak to moderate correlations).

A confirmatory factor analysis (CFA) of the EPRES-BE structure demonstrated an acceptable model fit (Table 3). The standardized factors loadings ranged from 0.07 (temporariness) to 0.85 (enforceability of rights). Additional CFA models showed that adding job insecurity, moral distress and work-life unbalance to the EPRES-BE structure did not result in acceptable model fit, indicating that these factors are not part of the EPRES structure.

The standardized factor loadings for measurement model ranged from 0.11 to 0.96 (Table 4).

The hypothesized model without the interactions had an acceptable fit. Adding the direct effects from PE to mental well-being and burnout did not change the model fit ($\chi2(286) = 5439.37$, $p < 0.05$, CFI = 0.93, TLI = 0.91, RMSEA = 0.046), and they were included in the final interaction model (Figure 2).

The final interaction model, with a calling as a moderator, had an acceptable model fit, although it could have been better: $\chi2(311) = 6465.58$, $p < 0.05$, CFI = 0.92, TLI = 0.90, RMSEA = 0.046 (Figure 2). Calling moderated significantly the relation of work-life unbalance (β = −0.02, $p = 0.017$) to mental well-being and to burnout (β = 0.03, $p < 0.001$). These results indicate that the higher the level of perceived calling, the smaller the negative effect of work-life unbalance on mental health (Figure 3). Correspondingly, the higher the calling, the smaller the positive effect of work-life unbalance on burnout. All the other interactions were non-significant. The model

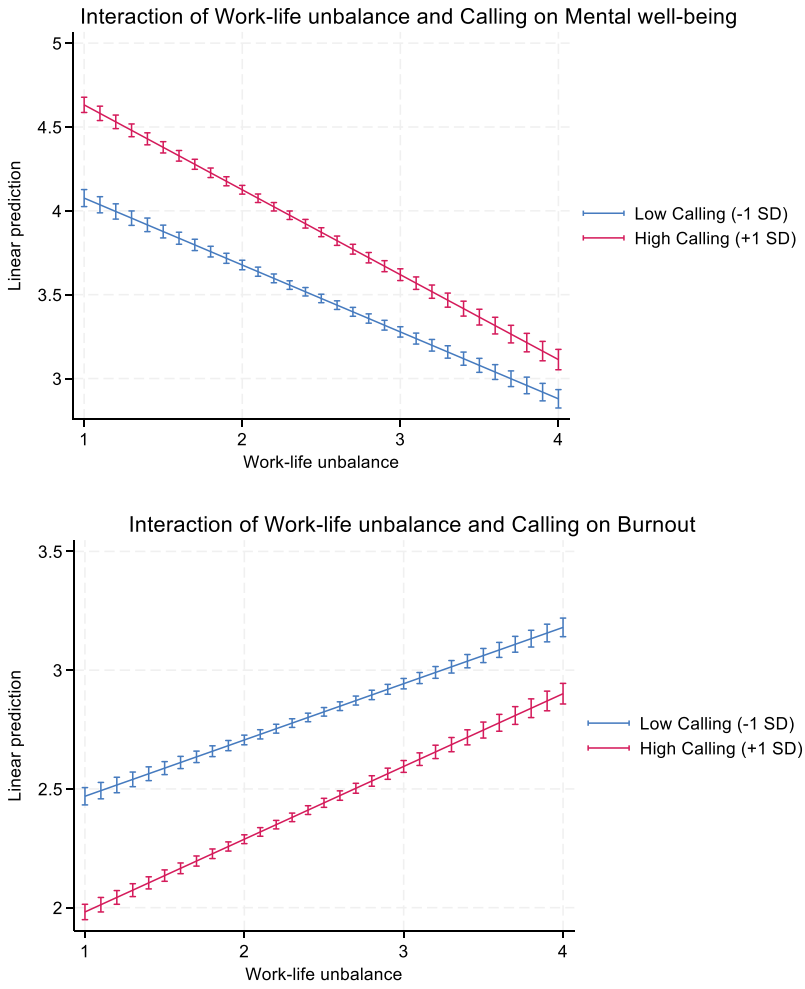

Figure 3. Interactions of work-life unbalance and calling on mental well-being and burnout.

explained 67.5 % of the variance of job insecurity, 44.2 % of moral distress, 80.5 % of work-life unbalance, 53.7 % of burnout and 66.4 % of the variance of mental well-being.

Discussion

In this study, we empirically tested the work precarity framework (B. A. Allan et al., 2021) and successfully showed how the subjective dimensions of work precarity mediated the detrimental effects of precarious employment on mental health outcomes. We show, in a large sample of care workers and with care work specific indicators of work precarity, that insecurities proposed by the framework mediated the detrimental impact of PE, increased burnout and reduced mental well-being. While the harmful direct effects of PE on mental health have been evidenced (Julià et al., 2017; Rönnblad et al., 2019; Valero et al., 2021) also among care workers (Hult et al., 2023), the mechanisms and mediators are less known (see e.g., Vanroelen et al., 2024; for qualitative insights; Perri et al., 2024). The effects of precarious employment on mental well-being and burnout were mediated by care work specific factors job insecurity, moral distress and work-life unbalance as hypothesized. Moreover, precarious employment also had direct effects on the outcomes by decreasing mental well-being and increasing burnout.

Theoretical and practical implications

The results show that precarious employment increased perceived job insecurity. It is notable that the EPRES includes the subdimension of temporariness, which "objectively" describes the employment contract as either permanent or temporary. Even though care sector faces staff shortages, care workers may experience insecurity due to reorganization or future of their workplaces which are under constant demands of savings and rationalizing (Orupabo, 2021). For instance, in Finland, the frequency of temporary contracts in the care sector is rather high, 27 % in a sample of care workers with vocational degree (Hult et al., 2023). However, in this

study with the workers with higher levels of education, 4.4 % of Belgian and 12 % of the Finnish workers had temporary contracts. Perceived job insecurity and lack of control over future (Boese et al., 2013; Wall, 2015; Orupabo, 2022) are critical factors contributing to psychological distress in care work (Liu et al., 2021), and this insecurity not only affects the mental health of workers but also impacts their job performance and satisfaction. Current developments in the healthcare sector are driving the increased use of artificial intelligence and robotics to enhance efficiency. However, these advancements have also led to negative psychological outcomes, such as fears of losing autonomy and increased job insecurity by job replacements, with concerns that robots might replace nurses and other human workers (El-Gazar et al., 2024).

The other care work-specific mediator between precarious employment and detrimental mental health outcomes was moral distress which defined precarity at work in the Work precarity framework (B. A. Allan et al., 2021). Moral distress arises when nurses are unable to act according to their ethical beliefs due to institutional constraints, leading to feelings of guilt, self-doubt, loss of confidence, and anger (Watts et al., 2023). Our findings thus contribute the evidence of the harmful effects of moral distress on increased burnout in the care sector (Matsuo et al., 2023). The experience of moral distress is particularly pronounced in precarious environments, where nurses often face moral dilemmas and conflicts (Duijs et al., 2021). Precarious work environments, specifically evidenced in long-term care, increase also the other negative work-related psychological states such as sense of alienation (Duijs et al., 2023), disengagement and depersonalized work, covert resistance, and bending the rules (Orupabo, 2021), as well as organizational conflicts (Gil, 2022). Therefore, precarious employment increasing moral distress is not harmful only to the workers well-being (Hult et al., 2022, 2023), but might lead to missed nursing care (Hackman et al., 2024) and finally, a decline in the quality of care (Gil, 2022). Work-life unbalance was the third factor that mediated the negative effect of precarious employment impairing the well-being of care workers (also Goździak & Main, 2022). Our results and earlier findings suggest that precarious employment conditions, characterized by irregular and unpredictable hours, disrupt the balance between professional and personal life among care workers (Sarıtaş, 2019; Strandell & Stranz, 2022). This unbalance leads to increased stress and burnout at work and in free time (Gil, 2022).

Our results indicate that the higher the level of perceived calling, the smaller are the negative effects of work-life unbalance on mental well-being. Correspondingly, the higher the calling, the smaller the positive effect of work-life unbalance on burnout. These results suggest that calling, or intrinsic motivation towards a career in care work, is an important individual resource moderating the relationship between work-life unbalance caused by precarious employment conditions and mental health. Our finding adds to the current literature on care professions as calling-based careers where the choice of choosing and staying in the profession is still marked by a desire to help others (Emerson, 2017). However, this desire is not without problems: nurses interviewed in the Kallio et al. (2022) study assumed that their calling makes nurses submissive and unwilling to demand better working conditions. On the other hand, the common idea that a care work imbeds calling had led to exploitation on the care workers by the employers, which makes them specifically vulnerable because exploitation harms their vocational but also moral commitment (Koltonski, 2018). Societies might no longer afford to rely on care workers' callings but must consider care work like any other profession, with decent working conditions and pay (Hult et al., 2024). Lately, the idea of decent work has gained particular attention in the context of care work (ILO, 2018), because care workers globally face growing psychosocial risks, such as burnout (Palvimo et al., 2023).

Some practical implications for avoiding precariousness and increasing empowerment in nursing can be identified. As discussed above, decent and fair pay and recognition of the nursing profession are among the most important issues to solve; however, they are also among the most difficult. The negotiation power of nursing and care workers is low, and, for example, in Finland, it has been decided that wage increases will follow export sectors, which means that nursing and care work cannot escape the wage gap. Therefore, showing appreciation in ways other than monetary is desirable, and organizations and leadership are at the forefront. Leaders must deconstruct unhealthy power structures and flatten hierarchies in healthcare organizations to ensure that nurses have a real opportunity to participate in discussions and decision-making related to their work. Leadership training can ensure that leaders know how to apply supportive and inclusive leadership styles instead of authoritarian or otherwise harmful management.

Limitations, strengths and future directions

The study has several limitations which need to be discussed. Our data collection in both countries was mainly carried out among healthcare workers who were

members of the trade unions. The results could have been different if data included non-organized workers as well. On the other hand, it may be justified to collect data through trade unions because Belgium's trade union membership rate is well above 50% of the workforce, and 96% of employees are covered by collective agreements (etui, 2024), and in Finland, the healthcare workers' unionization rate is about 90% (Tehy, 2019). Moreover, Belgium is one of the countries adopting the so-called "Ghent System" (Van Rie et al., 2011), which means that trade unions play a role in administering unemployment benefits. For that reason, there is a higher likelihood that workers in more unstable or precarious employment situations are also unionized. The demographic background of our samples corresponds well with the national nurse populations in terms of gender distribution. In Belgium, 15% of nurses are men, which is the same prevalence as in our study. In Finland, 8% of the nurse population are men, whereas 7% of this study sample were men. However, the age distribution in both samples showed that participants were older in this study compared to the situation in Belgium in 2020 and Finland in 2022 (Finnish Nurses Association, 2024; Statbel, 2020). There are two possible explanations: first, it is known that unionization rates are decreasing among younger generations and we did not reach equal number of younger workers (Van Rie et al., 2011). Second, the nursing workforce is globally ageing, and this shift is already evident in this study sample.

Another limitation of this study lies in the operationalization of the work precarity framework. Since the data collection tools were not specifically designed to test this framework, certain key aspects could not be fully addressed. In fact, we rather chose a "representative" of each of the three dimensions rather than trying to be exhaustive; mainly to avoid overloading the model. However, we believe that the main merit of this study is that we are taking a step forward in opening the "black box" of psychosocial mechanisms linking the state of precarious employment (accurately measured by scales like EPRES) to mental health-related outcomes. We believe that the framework offers a comprehensive understanding of how precarious employment conditions create uncertainty across multiple domains, both within and beyond the workplace. As such, the indicators used to test it can and should be adapted to each professional reality to fully grasp how precarious employment affects workers' health. In this regard, the indicators used in this study align with the nursing sector's specific characteristics while fitting within the framework's theoretical constraints. This approach thus contributes valuable insights into the mechanisms linking precarious employment and health outcomes among nurses. Moreover, our successful empirical operationalization of the framework demonstrates its applicability and potential for use in understanding similar dynamics in other professional contexts.

Even though precarious employment in the care sector is in the rise (e.g., Duijs et al., 2023; Gil, 2022), our sample has not traditionally been included in precarious jobs, as it does not necessarily include all the dimensions of precarious employment. Nevertheless, it is exactly the multidimensional nature of PE that underscores the fact that the degree of precariousness of occupations need to be assessed beyond the traditional contractual dimension (temporary or not). From that perspective, care occupations are characterized by high levels of unpredictable and unsocial working hours, lack of voice and low wages. However, an important methodological limitation of this study concerns the variability in standardized factor loadings among the indicators used to assess PE within the sample. While certain dimensions, such as enforceability of rights, exhibited strong loadings (0.85), others – most notably temporariness – demonstrated minimal association with the latent construct (0.07). This discrepancy suggests that this indicator may not uniformly capture the construct of PE across healthcare contexts. Future research should consider context-sensitive adaptations or the development of alternative indicators that more accurately reflect the structural and experiential dimensions of PE in healthcare settings, as well as in other diverse sectors.

Moreover, only self-reported data allow us to relate objective indicators of PE with perceived work precarity, something which cannot be done using objective register-based datasets or general-purpose representative worker samples (like EWCS) lacking the specific questionnaire items needed. In addition, the cross-sectional design is a limitation, as it prevents us from predicting the long-term impact of precarious employment on mental health outcomes. Research increasingly highlights the reciprocal relationship between health and work status. The "drift hypothesis" (Guthier et al., 2020) suggests a downward selection process in which workers with declining health are more likely to end up in poor-quality jobs or unemployed. In the healthcare sector, the plausible reverse effect could lead to ending up with involuntary temporary or very short-term "gig" jobs due to poor health conditions.

Future research should analyse the long-term exposure of PE on health outcomes as well as the potential effects of shifts between precarious and less precarious employment. Additionally, it should examine the reciprocal relationships between PE and health. The cross-sectional design also involves a risk of common methods bias, as the data comes from the same self-reported

source collected at the same time in each of the countries. When constructing the questionnaire, we aimed to lower the bias by applying short scales (the longest scale, EPRES-BE, included 38 items) that used variable scale formats, answer option styles, and non-repetitive items. We detected the possible bias with Harman's single-factor test (Kock et al., 2021) and the unmeasured latent variable technique (Podsakoff et al., 2024), and both tests suggested that the risk of bias was low.

Notwithstanding these limitations, the study also exhibits certain strengths. It provides an advancement in precarious work and employment research by integrating a work psychology perspective in this field, which is mainly dominated by epidemiological studies adopting a purely objective/materialist approach. Moreover, we have tested the Work precarity framework in a large quantitative dataset, which is likely the first attempt to operationalize the framework. Also, concerning the measurement of PE, our results closely align with previous research exploring how various aspects of PE relate to mental well-being (Hult et al., 2023; Julià et al., 2017; Vanroelen et al., 2024; Vives et al., 2010).

The Work precarity framework could be further tested in other occupational groups to obtain more evidence of its validity and ability to produce meaningful results. In this case, work precarity indicators should probably be occupation-specific, concerning the measures of precarity at work. We applied the framework by including care work-specific indicators, such as moral distress, because it is commonly experienced in the care sector. However, future studies could test the framework with more items of work precarity, for example, related to career development and advancement possibilities. Moreover, more variability in assessing job and employment insecurity in terms of the length and nature of employment types, such as part-time employment, should be taken into account. It would also be interesting to test the framework in other welfare contexts by including contextual factors in the analyses to explain the differences in PE, as outlined by Pförtner (2023).

Conclusion

The study confirmed the relevance of the new interdisciplinary research approach by combining subjective individual experiences with established operationalized dimensions of precarious employment. The Work precarity framework, which highlights the individual subjective experiences caused by insecurities and powerlessness, provides a useful tool for understanding the psychological processes mediating the link between precarious employment and mental health. The study findings show that an interdisciplinary approach is needed to fully understand the well-being related effects of precarious employment on mental health.

By applying this framework, the pervasive threads of precarious employment that extend across multiple job and life domains are understood. Addressing precarious employment from a political perspective has the potential to generate a cascade of positive outcomes within the nursing community. It can reduce nurses' exposure to features of work precarity and ultimately enhance their overall health and well-being. This is critical not only for the well-being of nurses themselves, the labour shortages and retainment of personnel in the sector but also for the quality of care they provide. Therefore, tackling precarious employment within the nursing workforce should be prioritized as a key issue on the public health agenda.

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Data availability statement

The data supporting this study's findings are available from the corresponding author, upon reasonable request.

Consent

The participants gave their informed consent.

References

Alimoradi, Z., Jafari, E., Lin, C. Y., Rajabi, R., Marznaki, Z. H., Soodmand, M., Potenza, M. N., & Pakpour, A. H. (2023). Estimation of moral distress among nurses: A systematic review and meta-analysis. *Nursing Ethics*, *30*(3), 334–357. https://doi.org/10.1177/09697330221135212

Allan, B. A., Autin, K. L., & Wilkins-Yel, K. G. (2021). Precarious work in the 21st century: A psychological perspective. *Journal of Vocational Behavior*, *126*, 126. https://doi.org/10.1016/J.JVB.2020.103491

Allan, H., Tschudin, V., & Horton, K. (2008). The devaluation of nursing: A position statement. *Nursing Ethics*, *15*(4), 549–556. https://doi.org/10.1177/0969733008090526

Benach, J., Vives, A., Amable, M., Vanroelen, C., Tarafa, G., & Muntaner, C. (2014). Precarious employment: Understanding an emerging social determinant of health. *Annual Review of*

Public Health, *35*(1), 229–253. https://doi.org/10.1146/annurev-publhealth-032013-182500

Blustein, D. L., Allan, B. A., Davila, A., Smith, C. M., Gordon, M., Wu, X. Y., Milo, L., & Whitson, N. (2022). Profiles of decent work and precarious work: Exploring macro-level predictors and mental health outcomes. *Journal of Career Assessment*, *31*(3), 423–441. https://doi.org/10.1177/10690727221119473

Boese, M., Campbell, I., Roberts, W., & Tham, J. C. (2013). Temporary migrant nurses in Australia: Sites and sources of precariousness. *The Economic & Labour Relations Review*, *24* (3), 316–339. https://doi.org/10.1177/1035304613496500

Bußmann, A., & Pomorin, N. (2023). Psychosocial burdens in palliative care - a longitudinal cohort study in nursing homes and impacts of the COVID-19 pandemic. *BMC Palliative Care*, *22*(1). https://doi.org/10.1186/S12904-023-01292-4

Dall'ora, C., Maruotti, A., & Griffiths, P. (2020). Temporary staffing and patient death in acute care hospitals: A retrospective longitudinal study. *Journal of Nursing Scholarship*, *52*(2), 210–216. https://doi.org/10.1111/jnu.12537

de Araújo, C. N. V., Pereira, À., Ramos, F. R. S., & Santos, A. C. P. D. O. (2022). Discourse and manipulation: Nursing in question. *Nursing Inquiry*, *29*(3). https://doi.org/10.1111/NIN.12424

Deschenes, S., Gagnon, M., Park, T., & Kunyk, D. (2020). Moral distress: A concept clarification. *Nursing Ethics*, *27*(4), 1127–1146. https://doi.org/10.1177/0969733020909523

Dik, B. J., Eldridge, B. M., Steger, M. F., & Duffy, R. D. (2012). Development and validation of the calling and vocation questionnaire (CVQ) and brief calling scale (BCS). *Journal of Career Assessment*, *20*(3), 242–263. https://doi.org/10.1177/1069072711434410

Duijs, S. E., Abma, T., Plak, O., Jhingoeri, U., Abena-Jaspers, Y., Senoussi, N., Mazurel, C., Bourik, Z., & Verdonk, P. (2023). Squeezed out: Experienced precariousness of self-employed care workers in residential long-term care, from an intersectional perspective. *Journal of Advanced Nursing*, *79*(5), 1799–1814. https://doi.org/10.1111/JAN.15470

Duijs, S. E., Haremaker, A., Bourik, Z., Abma, T. A., & Verdonk, P. (2021). Pushed to the margins and stretched to the limit: Experiences of freelance eldercare workers during the COVID-19 pandemic in the Netherlands. *Feminist Economics*, *27*(1–2), 217–235. https://doi.org/10.1080/13545701.2020.1845389

Ehrenreich, B., & English, D. (2010). Witches, midwives & nurses: A history of women healers. *Witches, Midwives & Nurses: A History of Women Healers*, 1–108.

El-Gazar, H. E., Abdelhafez, S., Ali, A. M., Shawer, M., Alharbi, T. A. F., & Zoromba, M. A. (2024). Are nurses and patients willing to work with service robots in healthcare? A mixed-methods study. *BMC Nursing*, *23*(1), 718. https://doi.org/10.1186/s12912-024-02336-7

Emerson, C. (2017). Calling to nursing: Concept analysis. *Advances in Nursing Science*, *40*(4), 384–394. https://doi.org/10.1097/ANS.0000000000000185

etui. (2024). *Belgium. Worker participation*. https://worker-participation.eu/national-industrial-relations/countries/belgium

Finnish Nurses Association. (2024). *Facts and figures about nurses in Finland*. https://sairaanhoitajat.fi/en/profession-and-skills/facts-and-figures-about-nurses-in-finland/

Fité-Serra, A. M., Gea-Sánchez, M., Alconada-Romero, Á., Mateos, J. T., Blanco-Blanco, J., Barallat-Gimeno, E., Roca-Llobet, J., & Muntaner, C. (2019). Occupational precariousness of nursing staff in Catalonia's public and private nursing homes. *International Journal of Environmental Research and Public Health*, *16*(24), 4921. https://doi.org/10.3390/ijerph16244921

Foster, W., McKellar, L., Fleet, J., & Sweet, L. (2022). Moral distress in midwifery practice: A concept analysis. *Nursing Ethics*, *29*(2), 364–383. https://doi.org/10.1177/09697330211023983

Gil, A. P. (2022). (In)Decent work conditions and quality care: An issue for long-term care policy. *Ageing & Society*, *42*(9), 2154–2179. https://doi.org/10.1017/S0144686X20002032

Goździak, E. M., & Main, I. (2022). "I am making good money, but . . . ": The precarious situation of Polish nurses in Norway. *International Migration*, *60*(2), 238–251. https://doi.org/10.1111/IMIG.12874

Guthier, C., Dormann, C., & Voelkle, M. C. (2020). Reciprocal effects between job stressors and burnout: A continuous time meta-analysis of longitudinal studies. *Psychological Bulletin*, *146*(12), 1146–1173. https://doi.org/10.1037/BUL0000304

Hackman, P., Häggman-Laitila, A., & Hult, M. (2024). Prioritization decision-making of care in nursing homes: A qualitative study. *Nursing Ethics*, *32*(1), 42–55. https://doi.org/10.1177/09697330241230513

Hakanen, J., & Kaltiainen, J. (2022). *Työuupumuksen arviointi Burnout Assessment Tool (BAT) -menetelmällä*. Työterveyslaitos. https://www.julkari.fi/handle/10024/145527

Hamric, A. B., Borchers, C. T., & Epstein, E. G. (2012). Development and testing of an instrument to measure moral distress in healthcare professionals. *AJOB Primary Research*, *3*(2), 1–9. https://doi.org/10.1080/21507716.2011.652337

Hu, L. T., & Bentler, P. M. (2009). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Hult, M., Halminen, O., Mattila-Holappa, P., & Kangasniemi, M. (2022). Health and work well-being associated with employment precariousness among permanent and temporary nurses: A cross-sectional survey. *Nordic Journal of Nursing Research*, *42*(3), 140–146. https://doi.org/10.1177/20571585211070376

Hult, M., Kallio, H., Kangasniemi, M., Pesonen, T., & Kopra, J. (2023). The effects of precarious employment and calling on the psychosocial health and work well-being of young and older workers in the care sector: A longitudinal study. *International Archives of Occupational and Environmental Health*, *96*(10), 1383–1392. https://doi.org/10.1007/S00420-023-02017-Z

Hult, M., & Ring, M. (2024). The impact of precarious employment on the commitment of registered nurses. *International Nursing Review*, *71*(4), 942–948. https://doi.org/10.1111/INR.12945

Hult, M., Ring, M., Siranko, H., & Kangasniemi, M. (2024). Decent and precarious work among nursing and care workers: A mixed-method systematic review. *Journal of Advanced Nursing*, *81*(6), 2913–2928. https://doi.org/10.1111/JAN.16572

ILO. (2018). *Care work and care jobs for the future of decent work*. International Labour Office.

ILO. (2023). *Nurses and midwives: Overworked, underpaid, undervalued?*. *ILOSTAT*. https://ilostat.ilo.org/nurses-and-midwives-overworked-underpaid-undervalued/

Jonsson, J., Vives, A., Benach, J., Kjellberg, K., Selander, J., Johansson, G., & Bodin, T. (2019). Measuring precarious employment in Sweden: Translation, adaptation and psychometric properties of the employment precariousness scale (EPRES). *BMJ Open*, *9*(9), e029577. https://doi.org/10.1136/bmjopen-2019-029577

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: Planning, administration, Evaluation*, *47*(3), 389–409. https://doi.org/10.1177/0020731417707491

Kallio, H., Kangasniemi, M., & Hult, M. (2022). Registered nurses' perceptions of having a calling to nursing: A mixed-method study. *Journal of Advanced Nursing*, *78*(5), 1473–1482. https://doi.org/10.1111/JAN.15157

Katsaouni, M., Tripsianis, G., Constantinidis, T., Vadikolias, K., Kontogiorgis, C., Serdari, A., Arvaniti, A., Theodorou, E., & Nena, E. (2024). Assessment of quality of life, job insecurity and work ability among nurses, working either under temporary or permanent terms. *International Journal of Occupational Medicine and Environmental Health*, *37*(1), 98–109. https://doi.org/10.13075/IJOMEH.1896.02245

Kock, F., Berbekova, A., & Assaf, A. G. (2021). Understanding and managing the threat of common method bias: Detection, prevention and control. *Tourism Management*, *86*, 104330. https://doi.org/10.1016/J.TOURMAN.2021.104330

Koltonski, D. (2018). Vocations, exploitation, and professions in a market economy. *Social Theory and Practice*, *44*(3), 323–347. https://doi.org/10.5840/SOCTHEORPRACT201862141

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://doi.org/10.5271/sjweh.3875

Lien, C. Y. (2023). Temp nurses go digital: Examining gig care in US nursing homes. *Sociology of Health & Illness*, *45*(3), 542–559. https://doi.org/10.1111/1467-9566.13600

Liu, Y., Yang, C., & Zou, G. (2021). Self-esteem, job insecurity, and psychological distress among Chinese nurses. *BMC Nursing*, *20*(1). https://doi.org/10.1186/S12912-021-00665-5

Llop-Gironés, A., Vračar, A., Llop-Gironés, G., Benach, J., Angeli-Silva, L., Jaimez, L., Thapa, P., Bhatta, R., Mahindrakar, S., Bontempo Scavo, S., Nar Devi, S., Barria, S., Marcos Alonso, S., & Julià, M. (2021). Employment and working conditions of nurses: Where and how health inequalities have increased during the COVID-19 pandemic? *Human Resources for Health*, *19*(1). https://doi.org/10.1186/S12960-021-00651-7

Lyon, D. (2021). A bevy of black swan events: Existential threats to the future of nursing. *Oncology Nursing Forum*, *48*(6), 587–588. https://doi.org/10.1188/21.ONF.587-588

Mänttäri van der Kuip, M. (2020). Conceptualising work-related moral suffering-exploring and refining the concept of moral distress in the context of social work. *The British Journal of Social Work*, *50*(3), 741–757. https://doi.org/10.1093/bjsw/bcz034

Matsuo, M., Takayama, Y., Kinouchi, C., & Suzuki, E. (2023). The mediating role of sense of coherence and striving for work-life balance on intention to leave from nurses' burnout. *Inquiry: A Journal of Medical Care organization, Provision and Financing*, *60*. https://doi.org/10.1177/00469580221146839

McCarthy, J., & Gastmans, C. (2015). Moral distress: A review of the argument-based nursing ethics literature. *Nursing Ethics*, *22*(1), 131–152. https://doi.org/10.1177/0969733014557139

OECD. (2024). OECD Statistics. https://stats.oecd.org/

Orupabo, J. (2021). Enacting efficient care within a context of rationalisation. *The Sociological Review*, *70*(1), 57–73. https://doi.org/10.1177/00380261211052390

Palukka, H., & Tiilikka, T. (2011). Temporary agency work in the Finnish health care sector: Greater flexibility and freedom in the workplace? *Work organisation, Labour and Globalisation*, *5*(1). https://doi.org/10.13169/WORKORGALABOGLOB.5.1.0112

Palvimo, T., Vauhkonen, A., Hult, M., & Berdida, D. J. (2023). The associations among destructive leadership, job demands and resources, and burnout among nurses: A cross-sectional survey study. *Journal of Nursing Management*, *2023*(1), 4289450. https://doi.org/10.1155/2023/4289450

Panchal, N., Sharma, S., Sharma, R., & Rani, R. (2022). Job satisfaction and organizational commitment among nurses working on temporary versus permanent jobs at a tertiary care teaching hospital, Uttarakhand, India. *Journal of Integrative Nursing*, *4*(4), 224–230. https://doi.org/10.4103/JIN.JIN_23_22

Perri, M., O'Campo, P., Gill, P., Gunn, V., Ma, R. W., Buhariwala, P., Rasoulian, E., Lewchuk, W., Baron, S., Bodin, T., & Muntaner, C. (2024). Precarious work on the rise. *BMC Public*, *24*(1). https://doi.org/10.1186/S12889-024-19363-3

Pförtner, T. K. (2023). The emergence of precarious employment as a determinant of health in Europe and the relevance of contextual factors: A critical research synthesis. *International Journal of Social Determinants of Health and Health Services*, *53*(3), 266–281. https://doi.org/10.1177/00207314221139797

Podsakoff, P. M., Podsakoff, N. P., Williams, L. J., Huang, C., & Yang, J. (2024). Common method bias: It's bad, it's complex, it's widespread, and it's not easy to fix. *Annual Review of Organizational Psychology & Organizational Behavior*, *11*(11), 17–61. https://doi.org/10.1146/annurev-orgpsych-110721-040030

Rhéaume, A. (2022). Job characteristics, emotional exhaustion, and work-family conflict in nurses. *Western Journal of Nursing Research*, *44*(6), 548–556. https://doi.org/10.1177/01939459211005712

Rönnblad, T., Grönholm, E., Jonsson, J., Koranyi, I., Orellana, C., Kreshpaj, B., Chen, L., Stockfelt, L., & Bodin, T. (2019). Precarious employment and mental health: A systematic review and meta-analysis of longitudinal studies. *Scandinavian Journal of Work, Environment & Health*, *45*(5), 429–443. https://doi.org/10.5271/sjweh.3797

Sarıtaş, C. T. (2019). Precarious contours of work-family conflict: The case of nurses in Turkey. *The Economic & Labour Relations Review*, *31*(1), 59–75. https://doi.org/10.1177/1035304619879327

Schaufeli, W. B., Desart, S., & De Witte, H. (2020). Burnout Assessment tool (BAT)-development, validity, and reliability. *International Journal of Environmental Research and Public Health*, *17*(24), 1–21. https://doi.org/10.3390/IJERPH17249495

Seubert, C., & Seubert, L. (2023). Defining work-related precariousness and how to measure it to secure health and well-being. In S. Carr, V. Hopner, J. Darrin, & M. Y. Hodgetts (Eds.), *Tackling precarious work* (pp. 325–348). Routledge. https://doi.org/10.4324/9781003440444

Sillero Sillero, A., Ayuso Margañon, R., Gil Poisa, M., Buil, N., Padrosa, E., Insa Calderón, E., Marques-Sule, E., & Alcover Van de Walle, C. (2023). Moral breakdowns and ethical dilemmas of perioperative nurses during COVID-19: COREQ-Compliant study. *9 the Global Problem of Insufficient Sleep and Its Serious Public Health Implications Healthcare*, *11*(13), 1937. https://doi.org/10.3390/healthcare11131937

Silva, R. N. D., & Ferreira, M. A. (2021). Nursing and society: Evolution of nursing and of capitalism in the 200 years of Florence Nightingale. *Revista latino-americana de enfermagem*, *29*, e3425. https://doi.org/10.1590/1518-8345.4482.3425

Standing, G. (2011). The precariat. In *The precariat* (pp. 43–45). Bloomsbury Academic. https://doi.org/10.5040/9781849664554

Statbel. (2020). *Professionals in health care*. https://statbel.fgov.be/en/themes/datalab/professionals-health-care

Strandell, R., & Stranz, A. (2022). Dimensions of job precariousness and associations with workers' health and well-being in Swedish homecare. *International Journal of Care and Caring*, *6*(3), 335–354. https://doi.org/10.1332/239788221X16349200319640

Tehy. (2019). The union of health and social care professionals in Finland.

Topp, C. W., Østergaard, S. D., Søndergaard, S., & Bech, P. (2015). The WHO-5 well-being index: A systematic review of the literature. *Psychotherapy and Psychosomatics*, *84*(3), 167–176. https://doi.org/10.1159/000376585

Valero, E., Martin, U., Bacigalupe, A., & Utzet, M. (2021). The impact of precarious jobs on mental health: A gender-sensitive literature review. *International Archives of Occupational and Environmental Health*, *94*(4), 577–589. https://doi.org/10.1007/S00420-020-01605-7

Vallas, S. (2015). Accounting for precarity: Recent studies of labor market uncertainty. *Contemporary Sociology: A Journal of Reviews*, *44*(4), 463–469. https://doi.org/10.1177/0094306115588484A

Van Rie, T., Marx, I., & Horemans, J. (2011). Ghent revisited: Unemployment insurance and union membership in Belgium and the Nordic countries. *European Journal of Industrial Relations*, *17*(2), 125–139. https://doi.org/10.1177/0959680111400895

Vanroelen, C., Julià, M., & Van Aerden, K. (2021). Precarious employment: An overlooked determinant of workers' health and well-being? In C. Korunka (Ed.), *Flexible working practices and approaches*. Springer. https://doi.org/10.1007/978-3-030-74128-0_12

Vanroelen, C., Padrosa Sayeras, E., Gevaert, J., Huegaerts, K., Vos, M., & Bosmans, K. (2024). Precarious employment and mental health in the Belgian service voucher system: The role of working conditions and perceived financial strain. *International Archives of Occupational and Environmental Health*, *2024*(4), 1–16. https://doi.org/10.1007/S00420-024-02057-Z

Vives, A., Amable, M., Ferrer, M., Moncada, S., Llorens, C., Muntaner, C., Benavides, F. G., & Benach, J. (2010). The employment precariousness scale (EPRES): Psychometric properties of a new tool for epidemiological studies among waged and salaried workers. *Occupational and Environmental Medicine*, *67*(8), 548–555. https://doi.org/10.1136/oem.2009.048967

Wall, S. (2015). Dimensions of precariousness in an emerging sector of self-employment: A study of self-employed nurses. *Gender, Work and Organization*, *22*(3), 221–236. https://doi.org/10.1111/gwao.12071

Watts, T., Sydor, A., Whybrow, D., Temeng, E., Hewitt, R., Pattinson, R., Bundy, C., Kyle, R. G., & Jones, B. (2023). Registered nurses' and nursing students' perspectives on moral distress and its effects: A mixed-methods systematic review and thematic synthesis. *Nursing Open*, *10*(9), 6014–6032. https://doi.org/10.1002/nop2.1913

Wilson, M. A., Goettemoeller, D. M., Bevan, N. A., & Mccord, J. M. (2013). Moral distress: Levels, coping and preferred interventions in critical care and transitional care nurses. *Journal of Clinical Nursing*, *22*(9–10), 1455–1466. https://doi.org/10.1111/jocn.12128

Xu, S., Tao, L., Huang, H., Little, J., & Huang, L. (2020). Pediatric nurses' turnover intention and its association with calling in China's tertiary hospitals. *Journal of Pediatric Nursing*, *52*, e51–e56. https://doi.org/10.1016/j.pedn.2020.01.005

Ziedelis, A. (2019). Perceived calling and work engagement among nurses. *Western Journal of Nursing Research*, *41*(6), 816–833. https://doi.org/10.1177/0193945918767631