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Psychosocial work environment and subjective well being among healthcare professionals using structural equation modeling, mediation and scale development

Evija Nagle[1]✉, Iluta Skrūzkalne[1], Silva Seņkāne[1], Otto Andersen[2], Olga Rajevska[1], Maksims Zolovs[1,3], Ingūna Griskēviča[1], Andrejs Ivanovs[1] & Ieva Reine[1,4]

The psychosocial work environment factors are a key determinant of healthcare professionals' subjective well-being (SWB); however, the mechanisms through which these factors operate remain insufficiently understood. This study aimed to develop and validate a context-specific measurement instrument and to examine how psychosocial work-environment factors influence SWB, focusing on psychological mechanisms. A cross-sectional study was conducted among healthcare professionals (N = 333) in a Latvian inpatient healthcare institution. The sample was randomly split for exploratory (n = 140) and confirmatory (n = 193) factor analyses. Psychosocial work environment factors were assessed using an author-developed instrument grounded in the Job Demands–Resources (JD–R) model, while SWB was measured using the WHO-5 Well-Being Index. Structural equation modeling (SEM) with a robust estimator (WLSMV) was applied. The final measurement model demonstrated good fit (CFI = 0.979; TLI = 0.970; RMSEA = 0.059; SRMR = 0.055). Psychosocial work environment factors explained up to 40% of SWB variance. Organisational support and trust (β = 0.420, $p < 0.001$) and professional fulfilment (β = 0.311, $p < 0.001$) emerged as significant predictors. Job demands and other factors were not directly associated with SWB. Mediation analysis showed that professional fulfilment partially mediated the relationships between organisational support and trust (31.2%) and perceived professional value (42.3%) with SWB. Sociodemographic variables were not significant. These findings suggest that SWB among healthcare professionals is primarily shaped by psychosocial job resources. Professional fulfilment is a central mechanism linking work environment conditions to well-being. The validated instrument provides a robust tool for assessing psychosocial work environments.

Keywords Subjective well-being, Psychosocial work environment, Healthcare professionals, Organisational support, Professional fulfilment, Structural equation modeling

Relevance of the problem in the context of healthcare

The SWB of employees is increasingly recognized as a critical component in organizational effectiveness, public health, and long-term socio-economic sustainability. The OECD designates well-being as a fundamental driver of societal development, labor productivity, and stability of the essential public services[1]. These considerations are particularly salient in the healthcare sector, where daily work is characterized by high cognitive and emotional demands, complex clinical decision-making, and continuous responsibility for patient outcomes[2].

Healthcare professionals face numerous psychosocial challenges in their work environment, which directly impact their subjective well-being. The elements of the psychosocial work environment, such as high intensity of work, chronic shortages of staff, limited organizational resources, rotating and extended shifts, and perpetual psychological pressure related to patient treatment, result in an increased level of stress, emotional burnout, and stress-related health complaints[3–8]. All the aforementioned factors have far-reaching consequences beyond the individual level. Reduced well-being among healthcare professionals is associated with poorer quality of care, a

[1]Riga Stradiņš University, Dzirciema iela 16, Riga, Latvia. [2]Agde University, Gimlemoen 25, Kristiansand, Norway. [3]Daugavpils University, Vienības iela 13, Daugavpils 5401, Latvia. [4]Uppsala University, Husargatan 3, Uppsala, Sweden. ✉email: evija.nagle@rsu.lv

higher risk of medical errors, compromised patient safety, and increased mortality rates[9]. Findings in Latvia also suggest that psychosocial work environment factors and subjective well-being are indirectly related to system-level health outcomes, like sickness absence[9].

Subjective well-being is therefore relevant at both the individual and organisational levels. At the individual level, it has an impact on psychological functioning, motivation, and emotional stability. At the organisational and system levels, it relates to continuity of care, staff retention, service quality, and public trust in healthcare institutions[10–12]. As such, the SWB of healthcare professionals should not be treated as a strictly personal issue, but rather as a significant organisational outcome with a direct impact on the resilience and sustainability of healthcare systems.

In this study, subjective well-being (SWB) describes healthcare professionals' cognitive and emotional appraisal of their work experiences. These appraisals are shaped by the psychosocial conditions present in their work environment. SWB is considered the outcome of the interaction between job demands and job resources. The study examines psychosocial work environment factors relevant to the work environment, including organisational trust, work–life balance, autonomy, perceived professional value, work intensity, and workplace harassment. These factors align with the OECD and WHO well-being frameworks and the Job Demands–Resources (JD–R) model.

Psychosomatic symptoms are acknowledged as indicators of strain within the JD–R framework but are not included in the final empirical model.

The role of healthcare organisations in ensuring sustainable development

The United Nations' Sustainable Development Goals emphasize the importance of good health and well-being as a fundamental prerequisite for sustainable development in society, as outlined in Goal 3[13]. This is especially important in the healthcare sector, as the ability of a healthcare system to provide safe, effective, and high-quality care is directly related to the well-being and functional capacity of healthcare professionals[14,15]. High-quality healthcare systems require a workforce capable of maintaining physical, psychological, and emotional well-being even in a demanding work environment.

Healthcare organizations influence not only population health outcomes but also the psychosocial work environment in which healthcare professionals operate, thereby shaping their motivation, emotional resilience, and overall functioning[15,16].

Apart from their clinical function, health organisations are also involved in various social and economic processes, such as staff retention, patient satisfaction, and public confidence in the healthcare system. As such, the protection of the subjective well-being of healthcare professionals can be viewed as an essential ingredient of organisational sustainability and successful healthcare delivery[17].

With increasing prominence placed on sustainability in organisational governance, international frameworks have emerged that emphasize transparency, human resource resilience, and long-term sustainability in institutions[18]. Alongside this move is the growing relevance of the Environmental, Social, and Governance (ESG) framework, particularly its social pillar, in healthcare governance which includes working conditions, subjective well-being, equity, professional development, and organisational culture[19]. Although its framework was proposed in private organisations, its relevance in public healthcare in terms of adopting its guiding principles increases "organisational resilience," "service efficiency and improved healthcare service quality," and enables "public trust in healthcare institutions with strengthened dedication and focus on their subjective well-being, those of healthcare service providers"[20].

In this context, sustainability in healthcare extends beyond the provision of high-quality patient care and requires sustained investment in healthcare professionals' working conditions and psychosocial well-being.

Subjective well-being and theoretical framework

In this study, subjective well-being (SWB) refers to healthcare professionals' cognitive and emotional evaluation of their work-related functioning.[21]. Among healthcare professionals, this evaluation is significantly influenced by work-related characteristics, including emotional demands, clinical responsibilities, and exposure to complex and stressful situations.

Within workplace well-being research, SWB is commonly conceptualised as an outcome of the psychosocial work environment, influenced by the interplay between job demands and job resources[22]. Empirical evidence consistently demonstrates that SWB among healthcare professionals is closely associated with mental and physical health outcomes, including emotional exhaustion, work-related stress, and burnout risk[23]. Conversely, reduced SWB has been linked to impaired functioning, psychological distress, and diminished quality of patient care.

The present study is grounded in the Job Demands–Resources (JD–R) framework, which provides a widely used theoretical basis for examining how psychosocial work environment factors shape employee well-being. According to this framework, job resources such as organisational trust, autonomy, and opportunities for professional development support motivation, emotional balance, and well-being, whereas excessive job demands contribute to strain and health impairment[22]. Within this framework, SWB is conceptualised as the result of an interaction between job resources and job demands operating within the psychosocial work environment.

Accordingly, SWB is examined as an overarching outcome influenced by key psychosocial work environment factors related to the work environment relevant to healthcare settings, including organisational trust, work–life balance, autonomy, perceived professional value, work intensity, and workplace harassment. It should be noted that the final set of constructs included in the empirical model was determined based on psychometric validation using EFA and CFA and may therefore differ from the initially conceptualised variables.

In addition to these core factors, previous research has also identified other psychosocial aspects, such as training opportunities and psychosomatic symptoms, as potentially relevant to employee well-being in

healthcare settings. Psychosomatic symptoms are conceptualised as indicators of stress-related strain within the health-impairment process of the JD–R model[24].

This conceptual approach enables an integrated examination of motivational and health-related mechanisms that link psychosocial work conditions to the subjective well-being of healthcare professionals.

Theoretical background and hypotheses development

International research on healthcare professionals has extensively examined psychosocial work environment factors, predominantly through the lens of negative outcomes such as stress, burnout, and work-related strain[21,22]. While this body of research has substantially advanced understanding of occupational risks in healthcare, its strong focus on adverse indicators provides only a partial view of employees' functioning and overlooks the positive dimensions of work-related well-being. As a result, subjective well-being (SWB) is often implicitly treated as the absence of distress rather than as a distinct and multidimensional outcome reflecting emotional balance, motivation, and satisfaction with work.

This imbalance is also evident in the Latvian research context, where empirical studies have primarily concentrated on burnout and psychosocial strain among healthcare professionals[25]. Although such findings highlight significant occupational challenges, they do not capture broader aspects of SWB, including professional fulfilment, perceived meaning in work, supportive organisational climate, and motivational resources. Widely used instruments such as the Maslach Burnout Inventory are rooted in symptom-oriented assessment and therefore do not reflect positive dimensions of subjective well-being or contemporary organisational constructs related to autonomy, fairness, and trust[23,24]. Consequently, the existing evidence base offers limited guidance for organisational strategies aimed at promoting sustainable well-being rather than merely preventing ill-being[26,27]. Existing instruments typically assess isolated dimensions of the psychosocial work environment or focus predominantly on negative outcomes such as burnout, thereby lacking an integrated, context-specific approach to capturing the multidimensional nature of subjective well-being among healthcare professionals[23,24,28]. Therefore, the development of a context-specific, multidimensional instrument was necessary to comprehensively assess psychosocial work environment factors and their relationship with subjective well-being in healthcare settings[29,30].

To address this gap, the present study adopts the Job Demands–Resources (JD–R) framework as an integrative theoretical approach that incorporates both positive and negative determinants of subjective well-being. Within this framework, job resources such as organisational support and trust, work–life balance, autonomy, and perceived professional value are assumed to support motivation and enhance SWB, whereas excessive job demands, such as work intensity, contribute to strain and reduced well-being[30–33]. Importantly, the final set of constructs included in the empirical model was determined through psychometric validation using exploratory and confirmatory factor analyses and may therefore differ from the initially conceptualised variables.

Based on prior evidence, the following hypothesis is proposed:

H1 *Psychosocial work environment factors are significantly associated with subjective well-being among healthcare professionals.*

In addition to psychosocial work environment factors, subjective well-being may be influenced by individual sociodemographic characteristics. However, existing research indicates that the effects of variables such as age and work experience tend to diminish or become statistically non-significant once psychosocial and organisational factors are considered[34]. This suggests that SWB is primarily shaped by work-related conditions rather than by sociodemographic characteristics alone. Accordingly, the following hypothesis is formulated:

H2 *Sociodemographic variables are not significantly associated with subjective well-being when psychosocial work environment factors are controlled.*

Building on the Job Demands–Resources (JD–R) model, the present study further examines the psychological mechanisms underlying the relationships between psychosocial work environment factors and subjective well-being. The JD–R framework proposes that job resources influence well-being not only directly but also through motivational processes, enhancing employees' sense of meaning, engagement, and professional fulfilment[29,35]. This reflects the motivational pathway of the JD–R model, where job resources affect well-being through underlying psychological mechanisms.

Professional fulfilment, defined as a sense of meaning, competence, and accomplishment in one's professional role, is conceptualised as a key mediator in this process. Job resources, particularly organisational support and trust, are expected to foster professional fulfilment, which in turn contributes to higher levels of subjective well-being[28,36].

Accordingly, it is hypothesised that the relationship between organisational support, trust, and subjective well-being is partially mediated by professional fulfilment.

Perceived professional value, defined as the extent to which individuals feel recognised and appreciated in their professional role, is also closely linked to intrinsic motivation and professional fulfilment. It is therefore expected to influence subjective well-being both directly and indirectly through professional fulfilment.

Taken together, these theoretical considerations suggest that professional fulfilment serves as a central psychological mechanism linking key psychosocial work environment factors to subjective well-being among healthcare professionals. Accordingly, the following hypotheses are proposed:

H3 *Professional fulfilment mediates the relationships among organisational support, trust, and subjective well-being among healthcare professionals.*

H4 *Professional fulfilment mediates the relationship between perceived professional value and subjective well-being among healthcare professionals.*

Materials and methods

Data collection procedure

A non-probability convenience sampling approach was employed due to practical and organisational considerations. A cross-sectional study design was used to examine the relationships between the study variables within a defined time frame.

Prior to participation, all potential respondents were provided with detailed information regarding the study's objectives, procedures, expected completion time, data processing principles, and confidentiality safeguards. Participation was voluntary and anonymous, and respondents had the right to withdraw at any time without any negative consequences. Electronic informed consent was obtained from all participants prior to data submission.

Data collection was conducted using an online survey administered between July and September 2024. The survey link was distributed via the partner organisation's internal communication channels and via direct email invitations. To enhance response rates, reminder messages were sent at two-week intervals.

The study targeted clinical healthcare professionals employed in a Latvian inpatient healthcare institution.

Participants

A total of 333 healthcare professionals participated in this study. Participants were recruited using a non-probability convenience sampling approach from a Latvian inpatient healthcare institution. Inclusion criteria required participants to be directly involved in patient care, while administrative and non-clinical staff were excluded to ensure the sample's relevance.

To ensure proper validation of the measurement model and to avoid overfitting, the total sample was randomly split into two independent subsamples. The first subsample (n = 140) was used for exploratory factor analysis (EFA), while the second subsample (n = 193) was used for confirmatory factor analysis (CFA).

The sample size for the EFA subsample was considered adequate based on commonly recommended subject-to-item ratios, which suggest a minimum of five participants per item[34,37]. Given that the questionnaire included 22 psychosocial work environment items, the minimum required sample size was 110 participants. Therefore, the EFA subsample (n = 140) exceeded this threshold and was considered sufficient for stable factor extraction.

The CFA subsample (n = 193) was also considered adequate, as sample sizes of approximately 150–200 participants are generally recommended for stable parameter estimation and reliable model fit evaluation in confirmatory factor analysis[34,37].

Structural equation modeling (SEM) was conducted using the full sample (N = 333) to maximise statistical power and obtain more stable parameter estimates.

Of all participants, 86.8% were women and 13.2% were men. Participants' ages ranged from 21 to 73 years (M = 46.4, SD = 12.1). More than 10 years of work experience at the current healthcare institution was reported by 63.7% of respondents, while 22.1% reported between 6 and 10 years of experience. Professional roles included nurses (54.1%), physicians (17.1%), and other clinical staff (28.8%).

This sample structure reflects the typical composition of the healthcare workforce in Latvia and provides sufficient statistical power for structural equation modeling analyses[37,38].

Scale development and measurement strategy

In this study, two distinct constructs: subjective well-being (SWB) and psychosocial work environment factors related to the work environment were assessed using separate, methodologically appropriate measurement approaches.

Subjective well-being was measured using the World Health Organization Five Well-Being Index (WHO-5). This is a widely validated instrument that captures both emotional and cognitive aspects of well-being and is widely used in clinical and occupational research[39].

Psychosocial work environment factors related to the work environment were assessed using an author-developed set of items. These items were theoretically grounded in the Job Demands–Resources (JD–R) model[29,31] and in OECD and WHO frameworks on job quality and well-being[1,40].

Initially, the instrument was designed to capture a theoretically informed set of psychosocial constructs, including organisational trust, work–life balance, training opportunities, work intensity, perceived professional value, autonomy, workplace harassment, and psychosomatic symptoms. These constructs reflect both job resources and job demand, as well as broader psychosocial conditions relevant to healthcare work environments.

In line with the JD–R model, job resources included trust, work–life balance, autonomy, and self-related evaluations (later operationalised as perceived professional value), while work intensity was conceptualised as a core job demand. In addition, training opportunities and workplace harassment were included as contextual psychosocial work environment factors reflecting organisational conditions.

The final structure of psychosocial work environment factors was not imposed a priori but was determined empirically. Exploratory factor analysis (EFA) was first conducted to identify the underlying latent dimensions, followed by confirmatory factor analysis (CFA) to validate the measurement model.

During this process, several items were removed due to inadequate psychometric properties, including low factor loadings, low communalities, and cross-loadings. As a result, the initially specified factor structure was partially modified. Notably, the Trainings factor was excluded from the final model due to insufficient factor loadings and lack of convergent validity, and the construct of perceived professional value was conceptually refined and operationalised. Psychosomatic symptoms were also excluded from further analysis, as they did not align conceptually with psychosocial work environment factors and did not form a stable latent construct

in the factor analysis. Consequently, the final measurement model consisted of six latent factors represented by 14 items.

Internal consistency was assessed using Cronbach's alpha and McDonald's omega coefficients, while convergent and discriminant validity were evaluated using established psychometric criteria.

This stepwise approach (EFA → CFA → SEM) follows established recommendations for scale development and validation[37,41,42] and ensures that the final model reflects both theoretical grounding and empirical robustness.

Dependent variable: subjective well-being

Subjective well-being (SWB) refers to an individual's overall evaluation of their life, encompassing both affective experiences and cognitive judgments[43]. To assess SWB, the World Health Organization Five Well-Being Index (WHO-5), a widely validated instrument measuring emotional and psychological well-being, was used[39]. The WHO-5 contains five statements describing positive mood and vitality (e.g., "I have felt cheerful and in good spirits"), rated on a five-point Likert scale (1 = at no time, 5 = all the time). Higher total scores represent greater well-being. Although the WHO-5 is typically scored using a summed index transformed into percentage values, mean scores were used in the present study for interpretability, with higher values indicating higher subjective well-being.

Independent variables

Organisational support and trust This construct was initially conceptualised as trust; however, exploratory factor analysis (EFA) indicated that the corresponding items reflected a broader dimension encompassing both interpersonal trust and perceived organisational support. Therefore, the construct was redefined as organisational support and trust.

Organisational support and trust refer to an individual's belief that both colleagues and the organisation act reliably, fairly, and in good faith, even in situations involving vulnerability or limited control. Both cognitive and affective components are essential for social cohesion and subjective well-being[30]. Within the Job Demands–Resources (JD–R) framework, this construct is conceptualised as a job resource that facilitates psychological safety and effective organisational functioning[29].

This construct was measured using four items rated on a six-point Likert scale (1 = strongly disagree; 6 = strongly agree). A mean score was computed for analysis.

Professional fulfilment This construct was initially conceptualised as work–life balance; however, exploratory factor analysis (EFA) demonstrated that the corresponding items captured a broader dimension related to meaning, competence, and satisfaction in the professional role. Consequently, the construct was redefined as professional fulfilment.

Professional fulfilment refers to an individual's sense of meaning, accomplishment, and competence derived from their professional activities. It reflects a positive evaluation of one's work role and is closely associated with intrinsic motivation and well-being[36,44].

This construct was measured using three items rated on a six-point Likert scale (1 = at no time; 6 = all the time). A mean score was computed.

Trainings Access to training reflects the availability of opportunities for skill development and professional growth within the organisation, enabling employees to adapt to job demands and enhance their competencies[1].

The construct was assessed using three dichotomous items (1 = yes; 2 = no) capturing respondents' access to employer-provided training. Following OECD recommendations for composite indicators, items were combined into a composite index by calculating their mean, with higher values indicating greater access to training opportunities. The composite index was used in subsequent analyses.

Work intensity Work intensity refers to the degree to which employees are required to work at a high pace, under time pressure, and with sustained cognitive or emotional effort. High work intensity represents a core job demand associated with increased strain, fatigue, and adverse well-being outcomes[29,45].

This construct was assessed using three items measuring frequency of high workload and sustained effort on a six-point Likert scale (1 = at no time; 6 = all the time). Item scores were averaged to obtain a composite score.

Perceived professional value Perceived professional value reflects an individual's evaluation of their competence, contribution, and significance within the work environment. It captures the extent to which employees perceive their work as meaningful and their role as valued within the organisation, which is associated with motivation and well-being[46].

This construct was measured using two items rated on a six-point Likert scale (1 = never; 6 = all the time). A mean score was computed.

Autonomy Autonomy refers to the degree of control employees have over their work tasks, including decision-making, task sequencing, and work methods. Within the JD–R framework, autonomy is considered a key job resource that enhances motivation and psychological functioning[29].

It was measured using two items rated on a six-point Likert scale (1 = never; 6 = always). A mean score was computed.

Workplace harassment Workplace harassment refers to repeated inappropriate behaviour that creates a hostile or unsafe work environment and may involve psychological, physical, or verbal aggression[47,48].

This construct was assessed using two dichotomous items (1 = yes; 2 = no), which were reverse coded so that higher values indicated lower exposure to harassment. A composite index was calculated and used in further analyses.

Psychosomatic symptoms Psychosomatic symptoms refer to physical manifestations associated with psychological strain and work-related stress, such as fatigue, tension, or other stress-related physical complaints[49].

This construct was assessed using two dichotomous items (1 = yes; 2 = no), which were reverse coded and combined into a composite index. This variable was included in the preliminary analysis.

All initially measured psychosocial variables were included in the preliminary analysis; however, only constructs demonstrating adequate psychometric properties and structural relevance were retained in the final measurement and structural models.

Covariates

In the SEM analysis, age and length of service (both in years) were treated as control variables, ensuring that potential confounding effects were addressed.

Furthermore, gender was not included as a covariate due to its substantial imbalance in the sample (86.8% women), which could lead to unstable parameter estimates. This decision aligns with previous research indicating that differences in subjective well-being among healthcare professionals are primarily explained by psychosocial work environment factors rather than gender itself[29,50].

Consequently, both covariates were modelled as predictors of subjective well-being in the structural model.

Data processing and statistics

Data processing and statistical analyses were conducted using Jamovi software. Prior to analysis, the dataset was screened for missing values, coding accuracy, and distributional properties. Descriptive statistics, including means (M), standard deviations (SD), skewness, and kurtosis, were calculated for all study variables.

To ensure methodological rigor and reduce the risk of overfitting, the total sample (N = 333) was randomly split into two independent subsamples for exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), respectively.

The factorial structure and construct validity of the psychosocial work environment items were initially examined using EFA. Given the mixed measurement levels of the data (ordinal Likert-type and dichotomous items), a heterogeneous correlation matrix was computed, including polychoric, tetrachoric, and polyserial correlations, which provide more accurate estimates for categorical data than Pearson correlations.

The suitability of the data for factor analysis was assessed using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. The number of factors was determined using Parallel Analysis (PA). Factor extraction was performed using Principal Axis Factoring (PAF), and an oblique rotation (direct oblimin) was applied to allow for correlations between latent factors.

An iterative item-reduction procedure was implemented to achieve a stable and interpretable factor structure. Items were removed if they met one or more of the following criteria: low communality ($h^2 < 0.20$), low primary factor loading (< 0.40), or substantial cross-loading (difference between primary and secondary loadings < 0.15). The analysis was repeated at each step until a simple, theoretically interpretable structure was achieved.

The internal consistency of the resulting factors was evaluated using Cronbach's alpha (α) and McDonald's omega (ω). For two-item scales, alpha values above 0.60 were considered acceptable given the limited number of indicators.

Confirmatory factor analysis (CFA) was conducted on the second subsample to validate the measurement model. The final measurement model consisted of 6 factors and 14 items. The factor structure and item loadings are presented in Supplementary material. The full list of items included in the final instrument is provided in Appendix A. Given the ordinal nature of the data, the model was estimated to be using a robust estimator appropriate for categorical indicators (e.g., diagonally weighted least squares, WLSMV). Model fit was evaluated using standard indices, including the Comparative Fit Index (CFI), the Tucker–Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA), and the Standardised Root Mean Square Residual (SRMR). Model fit was interpreted using recommended thresholds (CFI/TLI ≥ 0.90, RMSEA ≤ 0.08, SRMR ≤ 0.08).

Following validation of the measurement model, structural equation modeling (SEM) was performed to examine the relationships between psychosocial work environment factors and subjective well-being. In the structural model, subjective well-being (SWB) was specified as the endogenous variable, while psychosocial work environment factors were included as exogenous predictors.

The structural model was estimated to be using a robust estimator suitable for ordinal data (WLSMV). Standardised path coefficients (β) were reported to facilitate the interpretation of the magnitude and direction of associations. Statistical significance was evaluated using z-values and corresponding p-values.

The model's explanatory power was assessed using the coefficient of determination (R^2) for the endogenous variable. To ensure robustness and parsimony, multiple structural models were estimated: (1) a baseline model including psychosocial work environment factors, (2) an adjusted model including sociodemographic covariates (age and work experience), and (3) a refined model including only statistically significant predictors.

In addition, mediation analyses were conducted to examine the indirect effects of selected psychosocial work environment factors on subjective well-being through professional fulfilment. Indirect, direct, and total effects were estimated using non-parametric bootstrapping procedures with 5000 resamples, which provide robust estimates of standard errors and confidence intervals without relying on normality assumptions.

An indirect effect was considered statistically significant if the 95% bootstrap confidence interval did not include zero. The proportion of the total effect mediated (% mediation) was also calculated to assess the indirect pathway's relative contribution.

Variable	N	M	SD	Skewness	Kurtosis
Trainings	326	1.22	0.32	1.35	0.71
Professional fulfilment	333	4.90	0.63	− 0.26	− 0.29
Workplace harassment	321	1.73	0.40	− 1.00	0.73
Organisational support and trust	332	4.46	0.96	− 0.28	− 0.47
Autonomy	320	3.47	1.20	− 0.03	− 0.56
Work intensity	330	4.10	1.04	− 0.37	− 0.16
Perceived professional value	333	4.98	0.60	− 0.52	0.40
Subjective well-being (SWB)	332	19.29	5.07	− 0.23	0.25

Table 1. Descriptive statistics of study variables, including outcome variable (SWB), prior to factor validation. M, mean; SD, standard deviation. Composite scores were calculated as the mean of the items loading on each factor.

Item	Reason for removal	Psychometric criterion
A3	Weak primary loading	Loading < 0.40
A5	Weak primary loading	Loading < 0.40
A11	Low communality	$h^2 < 0.20$
A21	Cross-loading	Δ loading < 0.15
A22	Weak primary loading	Loading < 0.40

Table 2. Item reduction during exploratory factor analysis. Items were removed based on predefined psychometric criteria: low primary factor loading (< 0.40), low communality ($h^2 < 0.20$), or substantial cross-loading (difference between primary and secondary loadings < 0.15), following recommended practices in exploratory factor analysis[34].

Results

Descriptive statistics

As shown in Table 1, all variables demonstrated acceptable distributional properties, with skewness ranging from − 1.00 to 1.35 and kurtosis from − 0.56 to 0.73, indicating no substantial deviations from normality.

Overall, most psychosocial work environment factors showed relatively high mean values. Professional fulfilment and perceived professional value showed relatively high levels, indicating high levels of perceived meaning, competence, and recognition at work. Similarly, organisational support and trust were rated positively, indicating a relatively supportive work environment.

In contrast, work intensity remained relatively high, indicating relatively high workload and time pressure.

among healthcare professionals. Autonomy was assessed at a moderate level, which may indicate limited opportunities for independent decision-making and control over work tasks. Training opportunities were descriptively assessed as part of the initial measurement set; however, this construct was not retained in the final factor structure following psychometric validation.

Meanwhile, workplace harassment was reported less frequently; however, a notable proportion of respondents indicated exposure to such experiences. In addition, 62 respondents (20.1%) reported having experienced bullying, harassment, or violence at work in the past year, while 105 respondents (34.1%) reported experiencing verbal aggression or threats.

Subjective well-being was moderately high, reflecting an overall positive emotional and psychological state among respondents.

These results indicate that the data meets the assumptions for subsequent multivariate and structural analyses.

It should be noted that these descriptive statistics are based on the initial set of constructs prior to factor validation; the final factor structure was determined through EFA and subsequently refined using CFA.

Exploratory factor analysis

The suitability of the data for factor analysis was confirmed by the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy (KMO = 0.71) and Bartlett's test of sphericity, which was statistically significant ($p < 0.001$). Parallel analysis indicated a seven-factor solution.

An iterative item reduction procedure was applied to achieve a stable and interpretable factor structure. In total, five items were removed due to inadequate psychometric properties. Specifically, three items were excluded due to low primary factor loadings (< 0.40), one item due to low communality ($h^2 < 0.20$), and one item due to substantial cross-loading (Δ loading < 0.15). The item reduction process is presented in Table 2.

Following item removal, the final EFA model consisted of 17 items. The analysis revealed a seven-factor solution with a simple structure. All retained items loaded adequately on their respective factors, with factor loadings ranging from 0.69 to 0.84.

Communality values were within acceptable ranges, indicating that the extracted factors adequately explained the variance of the observed variables. The pattern matrix and communalities are presented in Table 3.

Item	Trainings	Professional fulfilment	Workplace harassment	Organisational support and trust	Work intensity	Autonomy	Perceived professional value	h^2
A16	0.84							0.58
A17	0.82							0.61
A18	0.79							0.55
A4		0.81						0.62
A6		0.77						0.54
A7		0.74						0.51
A19			0.83					0.59
A20			0.79					0.56
A8				0.76				0.48
A9				0.72				0.45
A10				0.69				0.42
A14					0.81			0.6
A15					0.78			0.57
A12						0.75		0.49
A13						0.72		0.46
A1							0.73	0.44
A2							0.70	0.41

Table 3. Final exploratory factor analysis: Pattern matrix and communalities (n = 140). Only primary factor loadings are presented. Extraction method: Principal Axis Factoring; rotation: direct oblimin.

Factor	Items	Cronbach's α	McDonald's ω
Trainings	A16, A17, A18	0.65	0.87
Professional fulfilment	A4, A6, A7	0.84	0.85
Workplace harassment	A19, A20	0.77	–
Organisational support and trust	A8, A9, A10	0.78	0.8
Work intensity	A14, A15	0.81	–
Autonomy	A12, A13	0.78	–
Perceived professional value	A1, A2	0.64	–

Table 4. Internal consistency of the final subscales. McDonald's omega was not estimated for two-item factors.

The internal consistency of the identified subscales ranged from acceptable to good. Cronbach's alpha coefficients varied between 0.64 and 0.84, while McDonald's omega coefficients ranged from 0.80 to 0.87 for multi-item scales. For two-item constructs, reliability was interpreted with caution due to the limited number of items. Reliability estimates are presented in Table 4.

Confirmatory factor analysis and measurement model validation

Although a seven-factor solution emerged in EFA, the Trainings factor was not retained in the final CFA model and was therefore excluded from subsequent analyses.

During the CFA, an iterative model refinement procedure was applied. Items were removed sequentially, one at a time, based on predefined psychometric criteria, and the model was re-estimated after each step to evaluate changes in model fit and measurement quality[37].

Items A16, A17, and A18, which initially formed the *Trainings* factor identified in the EFA solution, were sequentially removed from the model because their standardized factor loadings were below the recommended threshold (< 0.40). In addition, their inclusion negatively affected convergent validity and overall model fit. Following the stepwise removal of these items, none of the indicators for this factor met the required psychometric criteria; therefore, the *Trainings* factor was excluded from the final measurement model. This finding suggests that training did not represent a stable latent construct in this sample and was therefore excluded from further analysis.

The final model demonstrated good fit indices: $\chi^2(62) = 102.884$, $p < 0.001$, CFI = 0.979, TLI = 0.970, RMSEA = 0.059 (95% CI: 0.038–0.078), and SRMR = 0.055, indicating a good fit of the measurement model to the data. These results indicate acceptable model fit justify its use in subsequent structural analyses.

The standardized factor loadings are presented in Table 5. All retained items loaded significantly on their respective factors, with loadings ranging from 0.653 to 0.987, indicating strong relationships between observed indicators and their latent constructs.

Factor	Item	Loading	SE	z	*p*
Professional fulfilment	A4	0.653	0.053	12.246	< 0.001
	A6	0.741	0.037	19.983	< 0.001
	A7	0.798	0.044	18.041	< 0.001
Workplace harassment	A19	0.929	0.061	15.107	< 0.001
	A20	0.987	0.059	16.606	< 0.001
Organisational support and trust	A8	0.785	0.038	20.878	< 0.001
	A9	0.778	0.043	18.165	< 0.001
	A10	0.818	0.038	21.491	< 0.001
Work intensity	A14	0.784	0.056	14.070	< 0.001
	A15	0.887	0.055	16.134	< 0.001
Autonomy	A12	0.882	0.107	8.260	< 0.001
	A13	0.788	0.097	8.139	< 0.001
Perceived professional value	A1	0.707	0.096	7.365	< 0.001
	A2	0.794	0.095	8.328	< 0.001

Table 5. Standardized factor loadings from CFA. All factor loadings are standardized. SE = standard error. All loadings are statistically significant at $p < 0.001$.

Factor	n_items	Items	Cronbach's α	McDonald's ω
Professional Fulfilment	3	A4, A6, A7	0.716	0.799
Workplace Harassment	2	A19, A20	0.781	–
Organisational Support and Trust	3	A8, A9, A10	0.805	0.836
Work Intensity	2	A14, A15	0.780	–
Autonomy	2	A12, A13	0.794	–
Perceived Professional Value	2	A1, A2	0.606	–

Table 6. Internal consistency of constructs. Cronbach's α and McDonald's ω were used to assess internal consistency. Omega was not calculated for two-item constructs.

Reliability

The internal consistency of the identified constructs is presented in Table 6. As shown, most factors demonstrated acceptable to good reliability. Cronbach's alpha values ranged from 0.606 to 0.805, while McDonald's omega coefficients ranged from 0.799 to 0.836 for multi-item constructs.

Specifically, Organisational Support and Trust showed the highest internal consistency, followed by Workplace Harassment and Autonomy. Professional Fulfilment also demonstrated acceptable reliability. Although Perceived Professional Value showed a lower alpha value, it remained within an acceptable range, considering the limited number of items.

Overall, the results indicate that the measurement model demonstrates satisfactory internal consistency across the retained factors.

Convergent validity

Convergent validity was assessed using composite reliability (CR) and average variance extracted (AVE), as presented in Table 7. Overall, most constructs demonstrated acceptable levels of convergent validity.

Specifically, Workplace Harassment showed acceptable convergent validity, with both CR and AVE exceeding recommended thresholds. Work Intensity and Autonomy also demonstrated satisfactory values, indicating adequate internal consistency and variance explanation.

Professional Fulfilment showed acceptable but slightly lower values, remaining within tolerable limits. In contrast, Perceived Professional Value and Organisational Support and Trust exhibited lower CR and AVE values, suggesting comparatively lower convergent validity for these constructs.

Overall, the results indicate that convergent validity is generally supported, although certain constructs should be interpreted with caution.

Discriminant validity

Discriminant validity was assessed using the heterotrait–monotrait ratio (HTMT), as presented in Table 8. All HTMT values were below the recommended threshold of 0.85, indicating adequate discriminant validity among the constructs.

The highest HTMT value was observed between Professional Fulfilment and Organisational Support and Trust (0.751), which remain within acceptable limits. All other construct pairs showed lower HTMT values, suggesting that the latent constructs are empirically distinct.

Overall, the results confirm that the measurement model demonstrates satisfactory discriminant validity.

Factor	n_items	CR	AVE
Autonomy	2	0.699	0.699
Workplace harassment	2	0.919	0.919
Professional fulfilment	3	0.630	0.630
Perceived professional value	2	0.565	0.565
Organisational support and trust	3	0.537	0.537
Work intensity	2	0.701	0.701

Table 7. Convergent validity of constructs (CR and AVE). CR, composite reliability; AVE, average variance extracted. Values ≥ 0.50 are generally considered acceptable indicators of convergent validity.

Factor	F1	F2	F3	F4	F5	F6
F1	–					
F2	0.581	–				
F3	0.751	0.221	–			
F4	0.347	0.568	0.273	–		
F5	0.221	0.340	0.055	0.219	–	
F6	0.496	0.096	0.487	0.109	0.075	–

Table 8. Discriminant validity (HTMT matrix). HTMT, heterotrait–monotrait ratio. Values below 0.85 indicate adequate discriminant validity (Henseler et al. 2015). F1 = Professional Fulfilment; F2 = Workplace Harassment; F3 = Organisational Support and Trust; F4 = Work Intensity; F5 = Autonomy; F6 = Perceived Professional Value.

Predictor	Model 1 β	SE	*p*	95% CI	Model 2 β	SE	*p*	95% CI	Model 3 β	SE	*p*	95% CI
Professional fulfilment	0.299	0.088	< 0.001	[0.187, 0.412]	0.294	0.087	< 0.001	[0.181, 0.407]	0.311	0.056	< 0.001	[0.214, 0.407]
Organisational support and trust	0.355	0.069	< 0.001	[0.225, 0.485]	0.332	0.073	< 0.001	[0.190, 0.474]	0.420	0.061	< 0.001	[0.325, 0.514]
Workplace harassment	0.048	0.145	0.475	[− 0.083, 0.180]	0.051	0.146	0.454	[− 0.081, 0.183]	–	–	–	–
Autonomy	0.056	0.030	0.173	[− 0.024, 0.136]	0.056	0.030	0.180	[− 0.025, 0.137]	–	–	–	–
Work intensity	− 0.026	0.042	0.599	[− 0.124, 0.072]	− 0.036	0.048	0.481	[− 0.137, 0.064]	–	–	–	–
Perceived professional value	0.082	0.085	0.162	[− 0.032, 0.197]	0.089	0.086	0.135	[− 0.027, 0.204]	–	–	–	–
Age	–	–	–	–	0.102	0.095	0.282	[− 0.083, 0.287]	–	–	–	–
Work experience	–	–	–	–	− 0.087	0.093	0.351	[− 0.269, 0.095]	–	–	–	–

Table 9. Comparison of structural models predicting subjective well-being (SWB). B, standardised regression coefficient; SE, standard error; CI, confidence interval. SWB, subjective well-being. Model 1 includes only psychosocial work environment factors. Model 2 additionally includes sociodemographic covariates (age and work experience). Model 3 represents the refined model including only statistically significant predictors. Estimates are based on structural equation modeling using a robust estimator suitable for ordinal data (WLSMV). Confidence intervals are reported at the 95% level. Statistically significant effects ($p < 0.05$) are presented in bold. Dashes (-) indicate that the variable was not included in the corresponding model.

These results confirm that the constructs are empirically distinct and support the structural validity of the measurement model.

Structural model

The structural equation modelling (SEM) analysis was conducted to examine the associations between psychosocial work environment factors and subjective well-being (SWB). To ensure robustness and parsimony, three models were estimated: (1) a baseline model including psychosocial work environment factors (Model 1), (2) an adjusted model including sociodemographic covariates (Model 2), and (3) a refined model including only statistically significant predictors (Model 3). The detailed results are presented in Table 9.

Model 1: Psychosocial work environment factors (H1)

Model 1 tested H1, which proposed that psychosocial work environment factors are significantly associated with subjective well-being.

As shown in Table 9, psychosocial work environment factors explained 39.3% of the variance in SWB ($R^2 = 0.393$). Professional fulfilment (β = 0.299, $p < 0.001$, 95% CI [0.187, 0.412]) and organisational support and

Predictor	Effect	Estimate	SE	95% CI	*p*	% Mediation
Organisational support and trust	Indirect (OST → PF → SWB)	0.711	0.123	[0.467, 0.948]	< 0.001	31.2
	Direct (OST → SWB)	1.566	0.302	[0.989, 2.193]	< 0.001	68.8
	Total	2.277	0.291	[1.702, 2.856]	< 0.001	100.0
Perceived professional value	Indirect (PPV → PF → SWB)	1.29	0.260	[0.808, 1.84]	< 0.001	42.3
	Direct (PPV → SWB)	1.76	0.479	[0.827, 2.72]	< 0.001	57.7
	Total	3.05	0.433	[2.203, 3.94]	< 0.001	100.0

Table 10. Mediation analysis results. SE, standard error; CI, confidence interval; PF, professional fulfilment; SWB, subjective well-being; OST, organisational support and trust; PPV, perceived professional value. Indirect, direct, and total effects were estimated using bootstrapping with 5000 resamples. Mediation effects were considered statistically significant when the 95% confidence interval did not include zero.

trust ($\beta = 0.355$, $p < 0.001$, 95% CI [0.225, 0.485]) were positively and significantly associated with SWB, with organisational support showing the largest standardized coefficient.

In contrast, workplace harassment ($\beta = 0.048$, $p = 0.475$), autonomy ($\beta = 0.056$, $p = 0.173$), work intensity ($\beta = -0.026$, $p = 0.599$), and perceived professional value ($\beta = 0.082$, $p = 0.162$) were not statistically significant predictors of SWB.

Overall, these results indicate partial support for H1, indicating that only selected psychosocial work environment factors specifically professional fulfilment and organisational support and trust are significantly associated with subjective well-being.

Model 2: Adjusted model (H2)

Model 2 tested H2, which proposed that sociodemographic variables do not have a significant effect on subjective well-being when psychosocial work environment factors are controlled.

As presented in Table 9, Model 2 explained 40.0% of the variance in SWB ($R^2 = 0.400$). The pattern of results remained stable, with professional fulfilment ($\beta = 0.294$, $p < 0.001$, 95% CI [0.181, 0.407]) and organisational support and trust ($\beta = 0.332$, $p < 0.001$, 95% CI [0.190, 0.474]) continuing to demonstrate significant positive associations with SWB.

Importantly, age ($\beta = 0.102$, $p = 0.282$) and work experience ($\beta = -0.087$, $p = 0.351$) were not statistically significant predictors of SWB.

These results indicate support for H2, indicating that sociodemographic variables do not significantly influence subjective well-being when psychosocial work environment factors are considered.

Model 3: Refined model

The refined model was estimated to achieve a more parsimonious representation of the relationships by including only statistically significant predictors identified in Model 2.

As shown in Table 9, Model 3 explained 38.0% of the variance in SWB ($R^2 = 0.380$). Professional fulfilment ($\beta = 0.311$, $p < 0.001$, 95% CI [0.214, 0.407]) and organisational support and trust ($\beta = 0.420$, $p < 0.001$, 95% CI [0.325, 0.514]) remained significant predictors of SWB, with organisational support and trust emerging as the strongest predictor.

Model comparison and interpretation of hypotheses

The comparison of models indicates that including sociodemographic variables did not substantially improve the model's explanatory power, whereas the refined model achieved greater parsimony with only a minimal reduction in explained variance.

Taken together, the findings suggest that subjective well-being among healthcare professionals is primarily determined by psychosocial work environment factors in the work environment rather than by sociodemographic characteristics. Organisational support, trust, and professional fulfilment emerge as the key determinants of subjective well-being.

In summary, H1 was partially supported, as only selected psychosocial work environment factors were significantly associated with SWB, whereas H2 was fully supported, as sociodemographic variables did not demonstrate significant effects.

Mediation analysis

Mediation analyses were conducted to examine whether professional fulfilment mediates the relationships between psychosocial work environment factors and subjective well-being (SWB). The detailed results of the mediation models are presented in Table 10.

H3: Organisational support and trust → professional fulfilment → SWB

As shown in Table 10, the results indicated a statistically significant indirect effect of organisational support and trust on SWB through professional fulfilment (indirect effect = 0.711, SE = 0.123, 95% CI [0.467, 0.948], $p < 0.001$), indicating a mediation effect.

The direct effect of organisational support and trust on SWB remained statistically significant (direct effect = 1.566, SE = 0.302, 95% CI [0.989, 2.193], $p < 0.001$), indicating partial mediation.

The total effect was also statistically significant (total effect = 2.277, SE = 0.291, 95% CI [1.702, 2.856], $p < 0.001$). Approximately 31.2% of the total effect was mediated through professional fulfilment.

These findings support H3, suggesting that professional fulfilment partially mediates the relationships between organisational support and trust, and subjective well-being.

H4: Perceived professional value → professional fulfilment → SWB

As presented in Table 10, a statistically significant indirect effect was observed for perceived professional value on SWB through professional fulfilment (indirect effect = 1.29, SE = 0.260, 95% CI [0.808, 1.84], $p < 0.001$), indicating mediation.

The direct effect remained statistically significant (direct effect = 1.76, SE = 0.479, 95% CI [0.827, 2.72], $p < 0.001$), again indicating partial mediation.

The total effect was also significant (total effect = 3.05, SE = 0.433, 95% CI [2.203, 3.94], $p < 0.001$). Approximately 42.3% of the total effect was mediated through professional fulfilment.

These results support H4, indicating that professional fulfilment partially mediates the relationship between perceived professional value and subjective well-being.

Discussion

The aim of this study was to develop a work-context-specific instrument to assess psychosocial subjective well-being among healthcare professionals, and to empirically examine psychosocial work environment factors and identify which factors significantly influence subjective well-being and through which psychological mechanisms. The study was grounded in an integrated theoretical framework combining the Job Demands–Resources (JD–R) model with internationally recognised well-being frameworks, thereby providing a multidimensional perspective on the work environment and its impact on healthcare professionals' well-being[29,30].

The findings of this study provide several contributions. First, a novel measurement instrument was developed and psychometrically validated, providing a context-sensitive tool for assessing psychosocial work-environment factors among healthcare professionals. Second, key determinants of subjective well-being were identified. Third, professional fulfilment emerged as an important mediating mechanism linking psychosocial work environment factors to subjective well-being. Together, these findings extend existing research on occupational well-being in healthcare settings[28,36].

Instrument development and factor structure

This study's instrument reflects specific characteristics of healthcare settings, where high job demands coexist with strong professional identity and a pronounced sense of meaning in work[35,40].

The resulting factor structure is consistent with established psychosocial assessment instruments. Like the Copenhagen Psychosocial Questionnaire (COPSOQ), the dimensions capture both job demands (e.g., work intensity) and job resources (e.g., organisational support and autonomy). This aligns with the theoretical assumptions of the JD–R model[29,51,52].

At the same time, the findings reveal important context-specific features. Notably, professional fulfilment emerged as a central construct, reflecting the significance of meaning, competence, and professional identity in healthcare work. This is consistent with prior research highlighting the role of meaningful work and engagement in healthcare professionals' well-being[36,46].

Not all initially conceptualised constructs were retained in the final model. For example, the training dimension lacked psychometric stability. This may reflect contextual factors or differences in how training is perceived in specific professional environments[1,52]. This finding suggests that the psychosocial work environment structure may be partly context dependent.

Overall, the developed instrument maintains conceptual alignment with international frameworks while offering a contextually adapted, empirically grounded approach to assessing psychosocial subjective well-being among healthcare professionals.

Psychosocial work environment factors and subjective well-being

The structural model results indicate that psychosocial work environment factors account for approximately 39–40% of the variance in subjective well-being. This highlights the central role of work environment characteristics in shaping well-being among healthcare professionals and is consistent with previous research[28].

In line with the JD–R model, only selected job resources—namely organisational support and trust, and professional fulfilment—emerged as significant predictors of subjective well-being. These findings are consistent with the literature, which emphasises the importance of supportive organisational environments and positive work-related experiences in promoting employee well-being[29].

In contrast, job demands and other psychosocial work environment factors did not show significant direct associations with subjective well-being. These findings should also be interpreted considering the observed prevalence of workplace harassment, indicating that a considerable proportion of healthcare professionals are exposed to adverse work experiences, which may influence well-being through indirect psychological mechanisms. This may indicate that, in healthcare settings, job resources may play a more proximal role in shaping subjective well-being, whereas job demands are more likely to operate through indirect health-impairment pathways, such as strain and emotional exhaustion. This aligns with the JD–R framework, which posits that job resources play a more immediate role in enhancing well-being, whereas job demands are more strongly related to health impairment processes[29,36].

Furthermore, sociodemographic variables did not have a significant effect on subjective well-being, indicating that well-being in this context is primarily shaped by psychosocial work environment factors rather than individual demographic characteristics. This finding is consistent with prior occupational health research[28].

The mediating role of professional fulfilment

The results show that professional fulfilment is the main psychological link between psychosocial work environment factors and subjective well-being. This suggests that a substantial part of the work environment's effect on well-being operates through employees' sense of role fulfillment.

Organisational support and trust are central job resources that create a supportive, safe, and reliable environment. When healthcare professionals perceive fairness, support, and trust, psychological safety grows, and work experiences improve[53]. These conditions then support professional fulfilment, reflecting meaning, competence, and a strong professional identity[46].

Job resources affect subjective well-being directly and indirectly through professional fulfilment. This fits the JD–R model's motivational path, where job resources enhance engagement, meaning, and well-being[29,36].

These findings suggest that healthcare professionals' well-being is shaped by both objective work conditions and individuals' experiences of their professional roles.

Practical implications and recommendations

The findings highlight actionable ways for healthcare organisations to enhance psychosocial job resources. Prioritising organisational support, fostering trust, and recognising professional value can improve staff well-being and, ultimately, care about outcomes.

In practice, organisations should create supportive environments, foster effective communication, and actively involve employees in decision-making. Investing in professional fulfilment—via more development opportunities, balanced feedback, and recognition of meaningful contributions may increase staff satisfaction and retention.

Strengths and limitations

A key strength of this study lies in its theoretically grounded approach, the development of a novel measurement instrument, and the application of structural modelling techniques. The integration of the Job Demands–Resources framework with empirical validation strengthens both the conceptual and methodological rigor of the study.

However, several limitations should be acknowledged. First, the cross-sectional design does not allow for causal inference, and the observed associations should be interpreted with caution. Second, the use of self-reported data may introduce common-method bias, potentially inflating the relationships between variables.

Furthermore, the generalisability of the findings may be limited due to the specific professional and organisational context. The study was conducted within a single healthcare institution, which may restrict the applicability of the results to other healthcare settings or organisational environments. Differences in organisational culture, management practices, and working conditions across institutions may influence the observed relationships.

In addition, workplace harassment was assessed using a limited number of dichotomous items, which may not fully capture the complexity, frequency, and severity of such experiences. This simplified measurement approach may reduce reliability and limit the interpretability of the findings related to workplace harassment.

Future research should aim to replicate the findings in diverse healthcare settings and employ longitudinal designs to better capture causal relationships and temporal dynamics.

Therefore, the findings should be interpreted with caution, particularly regarding causal relationships and generalisability beyond the studied context.

Conclusions

These results show that psychosocial work environment factors, especially organisational support and professional fulfilment, are the main contributors to subjective well-being among healthcare professionals. The study identifies professional fulfilment as the central mechanism that explains how psychosocial work environment factors shape well-being. The developed instrument equips researchers and practitioners with a validated method for assessing subjective psychosocial well-being. For practice, the results suggest that targeted strategies, such as enhancing organisational support and fostering professional fulfilment, can have the greatest positive impact.

Data availability

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

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Author contributions

E.N. led the study, developed the conceptualisation and methodology, performed the data analysis, and prepared the initial manuscript draft. E.N. also coordinated the overall research process and contributed to data visualisation. I.S. was responsible for data collection and contributed to conceptualisation, methodology, data analysis, and project supervision. S.S. and M.Z. conducted data curation and contributed to data analysis. O.R. conducted the investigation and assisted with data visualisation. A.I., I.R., and I.G. provided supervision and methodological support. O.A., A.I., and E.N. reviewed and edited the manuscript. All authors reviewed and approved the final version of the manuscript.

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Declarations

Competing interests

The authors declare no conflict of interest related to the content, results, or publication of this study.

Ethical approval and consent to participate

The data collection and storage procedures were conducted in compliance with the General Data Protection Regulation (GDPR; Regulation (EU) 2016/679), ensuring confidentiality and the protection of personal data. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki. The study protocol was approved by the Research Ethics Committee of Riga Stradiņš University (Approval No. 2-PĒK-4/495/2024). All participants provided written informed consent prior to participation. Large language models (e.g., ChatGPT) were used solely for language refinement and stylistic editing. The authors take full responsibility for the content, interpretation, and conclusions of the manuscript.

Additional information

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Correspondence and requests for materials should be addressed to E.N.

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