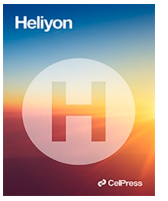
Heliyon 10 (2024) e30570

Contents lists available at ScienceDirect

Heliyon

journal homepage: www.cell.com/heliyon



Research article

Occupational well-being among health and social care educators: Structural equation modelling

Outi Kähkönen *, Anneli Vauhkonen, Miko Pasanen, Terhi Saaranen

Department of Nursing Science, University of Eastern Finland, Yliopistonranta, PL 1627, 70211 Kuopio, Finland

ARTICLE INFO

Keywords:
Educators
Occupational well-being
Structural equation modelling

ABSTRACT

This study tested whether empirical data about health and social care educators' occupational well-being would fit the proposed Content Model for the Promotion of the School Community Staff's Occupational Well-being. Descriptive, cross-sectional survey was conducted with 552 health and social care educators in 2020. Results confirmed that the four-aspect Content Model for the Promotion of School Community Staff's Occupational Well-being is suitable for promoting health and social care educators' occupational well-being, with some modifications. The results strengthen the view of occupational well-being as a wide-ranging phenomenon, the development of which should take into account four aspects of promoting occupational well-being.

1. Introduction

In Finland, social and health care educators face significant challenges due to psychosocially demanding work and heavy workloads [1], exacerbated by sectoral reforms [2]. They also face emotional stress and pressure to train more nursing students in the midst of a national [3], and global shortages [4,5]. Impending retirements put further strain on the system [6]. Labour shortages prompt solutions such as conversion training and international recruitment, adding to the burden on educators [5,7,8]. The global shortage of nursing faculty highlights the urgency of studying the well-being of social and health educators [9].

Empirical investigation into the occupational wellbeing of health and social care educators has shown that it is sub-optimal, from the perspectives of both the individual and the work community [1]. At a time when health and social care face numerous challenges, such as internationalisation and restructuring in the sector, and information overload and heavy workloads, research into occupational wellbeing is particularly needed [1,9].

In line with the wider working-age population in Western countries, the population of health and social care educators is ageing rapidly, making it important to consider how their occupational well-being can extend their working lives [10,11]. In most countries nurses make up the largest group of professionals, and they comprise about half of the global healthcare workforce [9]. There is particular pressure to educate more nurses both to address persistent labour shortages in nursing [12], which is not only related to ageing of the working-age population [5] and to support population health, universal health coverage, and equitable access to health care. It is therefore essential to develop health and social care educators' occupational well-being, building on theoretical knowledge to address such societal challenges [9].

* Corresponding author.
E-mail address: outi.kahkonen@uef.fi (O. Kähkönen).

https://doi.org/10.1016/j.heliyon.2024.e30570
Received 13 September 2023; Received in revised form 25 April 2024; Accepted 29 April 2024
Available online 4 May 2024

2. Background

Occupational well-being is a multidimensional concept that does not have a universally accepted definition and varies between scientific disciplines. It is associated with the working environment, the atmosphere at work and in the organisation, job satisfaction, and how workers feel about their work [13]. Occupational well-being can have profound impacts on both the individual and the whole work community [1,10,14–17], and is a key factor in determining the productivity and effectiveness of organisations [13].

Occupational well-being at the individual level relates to an educator's personal resources, health, fitness, and ability to manage the demands of their work [1,18]. It is important both for their own productivity at work and for the quality of education they deliver and their students' educational outcomes [19]. Positive educator-learner relationships have been found to improve educators' occupational well-being, by enhancing their passion for work and reducing emotional fatigue [20]. Overall, occupational well-being describes the quality of working life, including health and safety at work, and is in important determinant of productivity at the individual, organisational, and societal level [17].

Occupational well-being has been conceptualised in both positive and negative ways, i.e., focusing on the factors that promote or inhibit it [14,18]. Occupational well-being can be seen as an empowerment process, consisting of a balance of resources and load factors [14]. Based on this Saaranen et al. [21] have developed a Content Model for the Promotion of School Community Staff's Occupational Well-being (Content Model ProSchoolSOWE), consisting of four aspects (*worker and work*, *working community*, *professional competence*, *and working conditions*), which has been tested several times in the context of basic education [21,22].

The first aspect, *worker and work*, relates to the employee and their work, such as health, mental and physical workload, their individual resources, and the factors affecting these. The second aspect, *working community*, relates to management, leadership, social support, and information at work. The third aspect, *professional competence*, concerns training opportunities and professional growth, and the fourth aspect, *working conditions,* concerns physical, biological, and chemical working environments, and occupational safety (Fig. 1) [21].

The Content Model ProSchoolSOWE has been confirmed as an effective theoretical framework for evaluating the occupational well-being of staff in school contexts. However, it has not so far been applied in the context of health and social care education, a field in which there is a general lack of research-based evidence about occupational well-being. Therefore, this study sets out to do this.

3. Methods

3.1. Aims

The aim of the study was to test whether empirical data about the occupational well-being of health and social care educators would fit the proposed Content Model ProSchoolSOWE. The hypothesis was that the Content Model ProSchoolSOWE is suitable for assessing occupational well-being among health and social care educators. More specifically (Fig. 2), we hypothesised that the aspects that

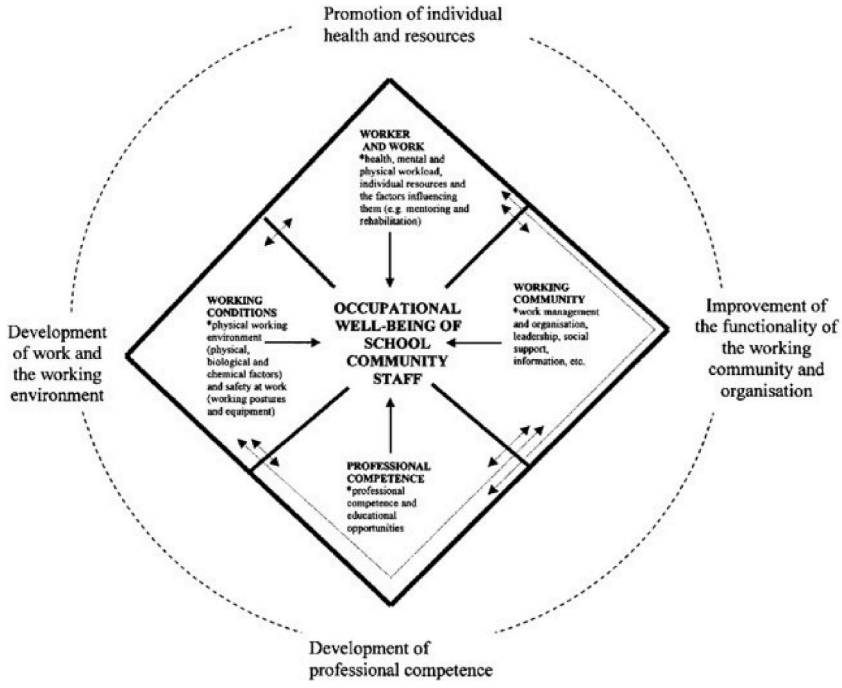


Fig. 1. Content Model for the Promotion of School Community Staff's Occupational Well-being (Saaranen et al., 2007.).

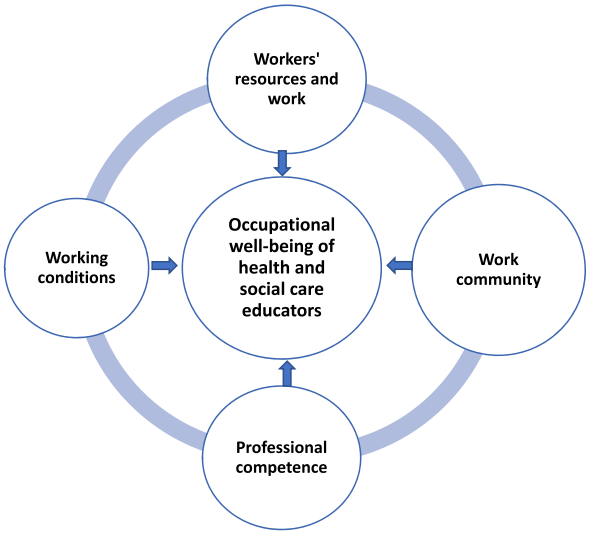


Fig. 2. The hypothetical model of the aspects promoting occupational well-being of health and social care educators.

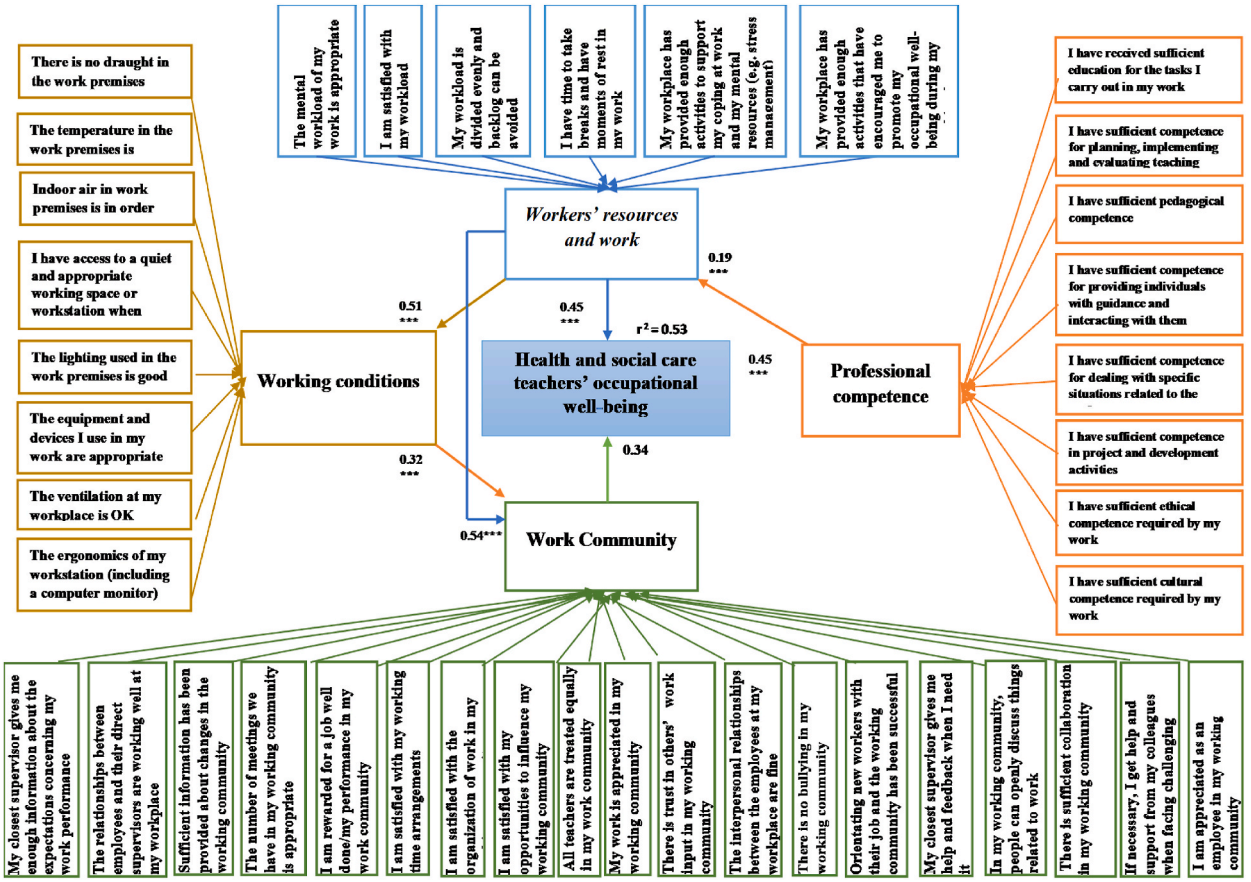


Fig. 3. The direct and indirect positive associations between the original Content Model for the Promotion of School Community Staff's Occupational Well-being and OW (Saaranen et al., 2007). The standardised regression weights were estimated as follows: a weak effect <0.10, a medium effect ~0.30, and a major effect >0.5 (Kline et al., 2016). (Note: *p < 00.05, **p 00.01, ***p ≤ 00.001). Standardizes Regression Weights were used.

promote the occupational well-being of school community staff (*workers' resources and work*, *work community*, *professional competence, and working conditions)* are also directly associated with health and social care educators' occupational well-being. Moreover, these aspects are indirectly connected to each other (see Fig. 3).

3.2. Study design

The study utilised a descriptive, cross-sectional survey and employed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies (Supplementary File 1).

3.3. Setting and participants

The study was conducted in February 2020, as part of the 2020-23 research and development project 'Social and health care teachers' occupational well-being in Finland', involving two Finnish universities. Participants were recruited invitation in collaboration with the Association of Vocational Educators and Trainers, of which about 70 % of all health and social care educators in Finland are members of this association representing a sufficient sample of the study population. In total, 1772 members of the Association received e-mail invitation to participate using convenience sampling. Of these, 552 (31 %) participated in the study. The e-mail invitation contained study information and a link to the questionnaire. The questionnaire and two reminders sent out three weeks later were sent by email through the register of the Association of Vocational Educators and Trainers.

3.4. Data collection

The data were collected using part of the Occupational Well-Being of Social and Health Care Teachers -Index Questionnaire (OWESoHeT-instrument), which is based on the Well-Being at Your Work Index Questionnaire (WYW-instrument) [21]. The original questionnaire was modified by a group of researchers in 2020 to measure the occupational well-being of social and health educators [1, 23].

The instrument includes 22 background questions and four continuous variables (scale 0 = very poor to 5 = very good) including individual and community occupational well-being and satisfaction with actions taken to maintain and promote occupational well-being. The actual OWESoHeT-instrument includes 64 four five-step Likert scale (1 = totally disagree, 2 = quite disagree, 3 = neither agree nor disagree, 4 = quite agree and 5 = totally agree) sum variables as follows: *workers' resources and work* (15 items), *work community* (21 items), *professional competence* (18 items), and *working conditions* (10 items). These sum variables were based on the results of a factor analysis originally conducted in 2007 [21], which was later confirmed by Vauhkonen et al., 2014 [23]. OWESoHeT-instrument has been found to be a valid and reliable instrument for measuring social and health care educators' occupational well-being, using the same study population as the previous study. The construct validity of the instrument has been tested using higher-order confirmatory factor analysis, which produced a factor solution with moderate model fit indices. The Alpha coefficient ranged from 0.78 to 0.89 indicating high consistency [24].

3.5. Data analysis

Data analysis was conducted using IBM SPSS (*Statistical* Package for Social Sciences) statistics version 27 and Analysis of Moment Structures (AMOS) version 27 with maximum likelihood estimation. In this study, SEM included one latent variable representing level of perceived subjective occupational well-being. SEM also included four exogenous, latent variables (*workers' resources and work*, *work community*, *professional competence, and working conditions)*.

The standardised regression weight *(β)* estimates and standardised total effect values were compared to assess the significance of the relationships between variables. With standardised regression weights, a weak effect is indicated by values < 0.10, a medium effect is indicated by values ~ 0.30, and a major effect is indicated by values > 0.5 [25,26].

3.6. Ethical consideration

Approval for the study was obtained from UEF Committee on Research Ethics (10/2020 June 12, 2020) and approval for the collection of research data was issued by the Association of Vocational Educators and Trainers in Finland. Participation in this study was based on informed consent [27]. In accordance with the Declaration of Helsinki, participants received information about the study which explained the purpose and procedures for the study, the voluntary nature of their participation, and the option to withdraw at any point. The general data protection regulation [28] (GDPR 2016/679) was followed in collecting, processing, and storing the data. The study followed responsible research conduct as recognised by the scientific community.

4. Results

4.1. Participant characteristics

Of the final sample of 552 participants, most (92 %) were women with a mean age of 51 years (SD 8.35). A majority (77 %) were married or in a close relationship. In terms of education level, most (76 %) had a master's degree, and participants had worked as

educators in the field of health and social education for on average 13.8 years (range 0–40, SD 8.8).

4.2. Structural equation modelling of occupational well-being among health and social care educators

The premise of the hypothetical model was based on the results in the Content Model ProSchoolSOWE [21]. In the first phase, direct positive associations between the original Content Model ProSchoolSOWE and occupational well-being were tested. The model included four aspects: *workers' resources and work*, *work community*, *professional competence, and* w*orking conditions* which were found to be statistically significant in previous studies by Saaranen et al. [14,21]. In the first phase, direct positive relationships were indicated between *workers' resources and work* ($\beta = 0.5$, $p < 0.001$) and occupational well-being, and *work community* and occupational well-being ($\beta = 0.4$, $p < 0.001$. Covariance between the variables were tested for each aspect, and several statistically significant covariances were detected (Table 1). However, the model was rejected because model fit was found to be insignificant. The estimates were as follows: $X^2 = 5647.0$, df = 1491, $p < 0.001$, $X^2/df = 3.8$, IFI = 0.8, CFI = 0.8, RMSEA = 0.07, indicating that the hypothetical model did not fit the empirical data.

In the second phase, direct and indirect associations between the Content Model ProSchoolSOWE and occupational well-being were tested. The strongest direct association was found between *workers' resources and work* and occupational well-being ($\beta = 0.45$, $p < 0.001$). There was also a direct positive association between *work community* and occupational well-being ($\beta = 0.34$, $p < 0.001$). Indirect but statistically significant associations with occupational well-being were found for *workers' resources and work* and *work community* ($\beta = 0.54$, $p < 0.001$), *workers' resources and work* and *working conditions* ($\beta = 0.51$, $p = < 0.001$), *working conditions* and *work community* ($\beta = 0.32$, $P = 0.001$), and between *professional competence* and *workers' resources and work* ($\beta = 0.19$, $p = < 0.001$).

Table 1
Covariances between factors related to health and social care educators' occupational well-being.

Covarying variables in the related factors	Est.	SE	CR	p
Development of work and the working environments				
The ventilation at my workplace is OK ↔ Indoor air in work premises is in order (no indoor air problems detected).	0.61	0.03	5.27	<0.001
The temperature in the work premises is comfortable ↔ The lighting used in the work premises is good	0.16	0.04	3.98	<0.001
Improvement of the functionality of the working community and organization				
My closest supervisor gives me enough information about the expectations concerning my work performance ↔ The relationships between employees and their direct supervisors are working well at my workplace	0.13	0.03	5.00	<0.001
My closest supervisor gives me help and feedback when I need it ↔ The relationships between employees and their direct supervisors are working well at my workplace	0.24	0.03	8.06	<0.001
The relationships between employees and their direct supervisors are working well at my workplace ↔ My work is appreciated in my working community	−0.30	0.01	−2.2	0.03
There is trust in others' work input in my working community ↔ The interpersonal relationships between the employees at my workplace are fine	0.16	0.03	5.25	<0.001
Sufficient information has been provided about changes in the working community ↔ The number of meetings we have in my working community is appropriate	0.2	0.04	5.62	<0.001
The number of meetings we have in my working community is appropriate ↔ My work is appreciated in my working community	−0.05	0.02	−2.52	0.01
The interpersonal relationships between the employees at my workplace are fine ↔ In my working community, people can openly discuss things related to work	0.17	0.03	6.01	<0.001
I am satisfied with the organization of work in my working ↔ community ↔ My work is appreciated in my working community	−0.89	0.024	−3.71	<0.001
I am satisfied with the organization of work in my working community ↔ I am appreciated as an employee in my working community	−0.91	0.02	−3.76	<0.001
All teachers are treated equally in my work community ↔ There is no bullying in my working community	0.21	0.04	5.74	<0.001
I am satisfied with the organization of work in my working community ↔ My work is appreciated in my working community	0.44	0.03	13.50	<0.001
There is trust in others' work input in my working community ↔ My work is appreciated in my working community	0.03	0.02	1.90	0.05
Development of professional competence				
I have sufficient competence for planning, implementing and evaluating teaching ↔ I have sufficient pedagogical competence	0.95	0.02	5.43	<0.001
I have sufficient competence for providing individuals with guidance and interacting with them ↔ I have sufficient competence in project and development activities	−0.07	0.02	−3.70	<0.001
I have sufficient competence for providing groups with guidance and interacting with them ↔ I have sufficient competence in project and development activities	−0.08	0.02	−3.63	<0.001
I have sufficient cultural competence required by my work ↔ I have sufficient competence for dealing with specific situations related to the student	0.15	0.03	4.93	<0.001
I have sufficient ethical competence required by my work ↔ I have sufficient cultural competence required by my work	0.08	0.02	4.35	<0.001
Promoting the individual health and resources				
The mental workload of my work is appropriate ↔ I am satisfied with my workload	0.12	0.04	3.30	<0.001
I am satisfied with my workload ↔ My workplace has provided enough activities that have encouraged me to promote my occupational well-being during my working hours (e.g. taking breaks to exercise, relaxation techniques).	−0.13	0.03	−3.91	<0.001
My workplace has provided enough activities that have encouraged me to promote my occupational well-being during my working hours (e.g. taking breaks to exercise, relaxation techniques). ↔ My workplace has provided enough activities to support my coping at work and my mental resources (e.g. stress management)	0.18	0.04	4.90	<0.001

Est. = regression weight; *SE* = standard error; CR = critical ratio; *p* = probability value. *$p \leq 00.05$. **$p < 00.01$. ***$p < 00.001$.

Although the outlined structural equation model with standardised estimates was statistically significant, yielding the following estimates: $X^2 = 9245.1$, $df = 2011$, $p < 00.001$, $X^2/df = 4.7$, IFI = 0.6, CFI = 0.6 and RMSEA = 0.08, the model fit was not satisfactory. Therefore, the variables with low regression weights (<0.4) [29] were removed as follows: one variable from *working conditions,* eight variables from *workers' resources and work*, nine variables from *professional competence*, and two variables from *work community*. Following this, the outlined structural equation model indicated an acceptable model fit (Fig. 2), with the following indices: IFI = 0.90, CFI = 0.90 and RMSEA = 0.05. The chi-square test results were $X^2 = 32106.6$ $df = 825$, $p < 00.001$ and $X^2/df = 2.6$. The standardised path coefficients indicated a weak to strong effect (≂0.1–0.5) regarding the factors directly affecting occupational well-being, and medium to strong effect regarding the factors which were indirectly associated with occupational well-being (≂0.2–0.6). (Kline, 2016). The model explained 53 % of the variance in the factors associated with the Content Model ProSchoolSOWE.

5. Discussion

The development of theory-based knowledge requires practitioners to evaluate the effectiveness of theoretical models in serving practical purposes [30]. However, theory testing is only possible if, like the Content Model ProSchoolSOWE, those theories are sufficiently advanced to offer measurable models of reality [31]. It is also important to continue to critically investigate and further develop theoretically models as they stand [30]. Nursing theories should be philosophically reasoned, accurately representing the phenomenon of concern in order to direct practice [32,33]. Theory testing is therefore a systematic and dynamic process that starts with model development and continues through theory testing in the empirical context and on to further development [33,34].

This study presents a novel model for measuring and validating the occupational well-being of health and social care educators. The initial hypothetical Content Model ProSchoolSOWE was developed, tested, and further developed by Saaranen et al. [14,21]. The four aspects of this model are: w*orking conditions, work community, workers' resources and work, and professional competence.* The results of the present study confirmed that the four-aspect Content Model ProSchoolSOWE is suitable for evaluating health and social care educators' occupational well-being, although some modifications were needed. The model explained 53 % of the research subjects' occupational well-being, which can be considered relatively good.

On closer inspection of the results for the four aspects (*workers' resources and work*, *work community*, *professional competence, and working conditions*), this study confirmed that the strongest association exists between health and social care educators' occupational well-being and the aspect *workers' resources and work*. This aspect considers factors such as health, mental and physical workload, individual resources, and the other factors that influence these. Previous evidence shows that, although education is a very demanding and stressful profession, in general educators are satisfied with their jobs although they also report feeling stressed or exhausted [13, 35–37]. The literature on health and social care educators' occupational well-being confirms that health and social care educators often think that their work is psychologically burdensome, and that workloads are unevenly distributed [1,13,38]. This is why adequate resources have been identified as a key factor in promoting occupational well-being. These findings are worth highlighting because globally the field of education, including health and social education, is changing and confronting new challenges which tend to add to educators' workloads, thereby reducing their occupational well-being [13,20].

Another remarkable result that merits closer review is a direct, but statistically significant, association between health and social care educators' occupational well-being and *work community*. This aspect concerns factors such as work management, leadership, social support, and information. This result echoes that of a previous study which showed that meaningful social relationships in the working community [15,22], work atmosphere, trust in and valuing the work of others [38], good management, supervisor support and organisational support, good communication, and equal treatment [15,38] are the factors that promote health and social care educators' occupational well-being. This finding is particularly noteworthy because working community can not only have a profound impact on individuals [1,15] but is also a key factor in determining the productivity and effectiveness of organisations [13]. Community behaviours such as collaboration and dialogue have also been found to be protective of occupational well-being among educators. Emotional expression, interaction, and meaningfulness also play an important role in forging pedagogical fellowship. Involved educator educators take responsibility for the workplace culture and development of teaching. Positive attitudes, motivation, reflection, and dialogue seem to be associated with professional capability and the professionalism with which educators do their work [39]. From an individual point of view occupational well-being is an important value, which comprises not only educators' personal resources, health, and fitness but also the energy to manage workloads and support each other [1]. The occupational well-being of educators is also important to their learners because it relates to their productivity at work, the quality of education they provide, and students' educational outcomes [19]. In turn, positive relationships between educators and learners have been associated with educators having greater passion for their work and lower emotional fatigue, thus improving their occupational well-being [20].

The findings of this study highlight the importance of *professional competence,* which relates to educational opportunities and professional growth, echoing the findings of Chen et al. [40], who pointed out that the utilisation of one's own skills and continuous education promotes good work motivation and job satisfaction. Moreover, Derby-Davis et al. [41]. showed that occupational well-being contributes to educators staying in the field of education [13].

Educational organisations worldwide are facing new difficulties and unexpected fluctuations in work various problems and adversities in the education process cause extra workload [20]. Meanwhile, as noted above, educators' occupational well-being can be enhanced where there is a supportive collective work environment [39].

Health and social care educators' occupational well-being was indirectly associated with *working conditions*. This aspect considers the physical, biological, and chemical working environment and safety at work. Globally, here is growing concern about deterioration in educators' health. Educators are seen to be at risk of numerous health problems. Respiratory and voice problems are very common among educators, and been seen to be associated with working conditions such as noisy classrooms, weekly class hours, work pressure,

habitual use of a loud speaking voice, and indoor air problems [42]. Musculoskeletal problems are also common, and strongly associated with physical working conditions and ergonomic limitation' which drive increased costs due to sick pay, absenteeism and retraining [43]. Mental health problems and burnout among educators are also a concern [44]. These are partly related to increasing problems with violence and bullying, which affect educators' working conditions. Violence against educators is a widespread problem that has detrimental negative effects on educators' emotional and physical well-being, job performance, and retention [45].

This study reinforces the understanding that theory changes over time [30]. Working life and its requirements have changed since the original Content Model ProSchoolSOWE was developed, so it is natural that factors related to occupational well-being have also changed. In the present study, SEM was used as a tool for statistical analysis to test the Content Model ProSchoolSOWE's suitability for assessing occupational well-being among health and social care educators. This statistical method is appropriate, because it allows a hypothesis-testing approach when investigating a complex phenomenon such as occupational well-being [25,26].

Based on the results of SEM, some variables in the original Content Model ProSchoolSOWE with low (<0.4) loadings were rejected step by step until an acceptable model fit was achieved (Whitley & Kite, 2018). There is no consensus as to the acceptable lower limit of factor loading in SEM. Many studies, e.g. Collier et al. (2020), have reported that factor loadings should be greater than 0.5 or even 0.6 while other researchers consider factor loadings of 0.4 to be sufficient [29].

The variables removed included items related to ergonomics, occupational health care services, and rehabilitation. It is difficult to explain why these variables were not statistically significant and were left out of the model. One possible explanation may be the statutory nature of occupational health care, making it self -evident to health and social care educators. Other variables removed related to IT skills, research expertise, and language skills. These are areas in which health and social care educators' competencies have been strengthened over recent decades, which may explain why they are no longer so relevant as constraints to occupational well-being.

5.1. Strengths and limitations of the survey

The strength of this study was the large number of participants. This was possible because recruitment was carried out through a national professional association. Another significant strength was the instrument (OWESoHeT-instrument), which was used for this study. This instrument has been tested and developed in several stages, and widely used in Finland and internationally [14,21,23]. The limitation of this study was the relatively low response rate, although the sample size was considered adequate. The questionnaire was distributed through the register of the Trade Union of Education in Finland, to 1772 social and health education teachers in Finland, which represents about 70 % of all such teachers. Of these, 31 % (n = 552) responded to the survey, indicating a possible selection bias. However, despite this limitation, the sample size was substantial, representing about 24 % of the total population of teachers in this field in Finland. In addition, the average age and gender distribution of the respondents was representative of the total population. It's important to recognise that the generalisability of the study to other countries may be limited by its focus on the Finnish population. Moreover, in using self-reported data collection methods there is always a risk of social desirability, whereby respondents provide the answers that they think are considered to be good, rather than what they actually do or feel. It is possible that those who experienced low occupational well-being and a high workload did not participate in the study. Moreover, a national cross-sectional study design might be a limitation. Thus, the generalisability of the results should be treated with caution.

6. Conclusion

The results of the present study strengthen the view of occupational well-being as a wide-ranging phenomenon, the development of which should take into account four aspects of promoting occupational well-being. In this study, the Content Model ProSchoolSOWE, which had previously only been tested in elementary schools, was tested in the health and social care context.

We hypothesised that *workers' resources and work*, *work community*, *professional competence, and* w*orking conditions* are associated directly and indirectly with the occupational well-being of health and social care educators. The hypothesis was partially proven: the strongest direct association with occupational well-being related to *workers' resources and work* and *work community*. *Workers' resources and work* were indirectly associated with occupational well-being through *working conditions* and *work community*. Moreover, professional competence was indirectly associated with occupational well-being through *workers' resources and work,* and with *working conditions* through *work community*. Strengthening health and social care educators' occupational well-being requires management, leadership, social support, and information. Working conditions, professional competence, and workers' resources, as defined in the model, also emerged as important factors. Thus, the follow-up challenge is to continue testing the Content Model ProSchoolSOWE, as developed further in this study, to strengthen the concreteness and applicability of the model as a basis for improving occupational well-being in educational organisations.

Funding statement

This work was funded by the Finnish OAJ's Occupational Wellbeing Fund.

CRediT authorship contribution statement

Outi Kähkönen: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Anneli Vauhkonen:** Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation,

Data curation, Conceptualization. **Miko Pasanen:** Writing – review & editing, Writing – original draft, Validation, Supervision, Methodology. **Terhi Saaranen:** Writing – review & editing, Writing – original draft, Validation, Supervision, Resources, Project administration, Investigation, Funding acquisition, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

The authors are grateful for the collaboration of the health and social care educators and members of Vocational Educators and Trainers association involved.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.heliyon.2024.e30570.

References

[1] J. Rinne, H. Leino-Kilpi, T. Saaranen, M. Pasanen, L. Salminen, Educators' occupational well-being in health and social care education, Occup. Med. (Lond.) 72 (5) (2022) 289–297, https://doi.org/10.1093/occmed/kqac024.
[2] OAJ, The trade union of education in Finland. OAJ Member Survey. The Barometer of Professional Education, 2022. https://www.oaj.fi/globalassets/julkaisut/2022/oaj_ammatillisen_koulutusken_kysely_final.pdf.
[3] KEVA, Forecast of Retirement by Occupational Group, 2021. Available from: Microsoft Power BI.
[4] M. Haryanto, Nursing shortage: Myth or fact? Orthop. Nurs. 38 (1) (2019) 1–2, https://doi.org/10.1097/NOR.0000000000000535.
[5] M. Marć, A. Bartosiewicz, J. Burzyńska, Z. Chmiel, P.A. Januszewicz, Nursing shortage - a prospect of global and local policies, Int. Nurs. Rev. 66 (1) (2019) 9–16, https://doi.org/10.1111/inr.12473.
[6] D. Fang, K. Kesten, Retirements and succession of nursing faculty in 2016-2025, Nurs. Outlook 65 (5) (2017) 633–642, https://doi.org/10.1016/j.outlook.2017.03.003.
[7] T.-M. Kirkonpelto, T. Mäntyranta, Roadmap 2022–2027: Securing the Adequacy and Availability of Personnel in the Social and Health Sector, vol. 2023, Publications of the Ministry of Social Affairs and Health, 2023, p. 8.
[8] V. Lauttamäki, O. Hietanen, Labor and training needs of the social and health sector 2015. Final Report of the Social and Health Care Foresight Project, University of Turku. Turku University of Economics, 2019.
[9] World Health Organization, Global strategy on human resources for health: workforce 2030. https://www.who.int/hrh/resources/pub_globstrathrh-2030/en/. (Accessed 12 December 2018).
[10] EU–OSHA. Management of psychosocial risks in European workplaces - evidence from the second European survey of enterprises on new and emerging risks (ESENER-2), European Agency for Safety and Health at Work, 2018, pp. 10–12.
[11] Ministry of Social Affairs and Health, Safe and healthy working conditions and work ability for everyone. In *Policy for the work environment and wellbeing at work until*. Implementation plan 2022–2023, Ministry of Social Affairs and Health Publications (2022) 2022. https://urn.fi/URN:ISBN:978-952-00-8484-4.
[12] V.M. Drennan, F. Ross, Global nurse shortages-the facts, the impact and action for change, Br. Med. Bull. 130 (1) (2019) 25–37, https://doi.org/10.1093/bmb/ldz014.
[13] A. Howard, R. Antczak, K. Albertsen. Education – evidence from the European survey of enterprises on new and emerging risks (ESENER), The European Agency for Safety and Health at Work (EU-OSHA, 2022, pp. 13–14.
[14] T. Saaranen, T. Pertel, K. Streimann, S. Laine, K. Tossavainen, The occupational well -being of school staff: experiences and results from an action research project realized in Finland and Estonia in 2009 –2014, in: Reports and Studies in Health Sciences, University of Eastern Finland, 2015. Number 16.
[15] M. Arian, M. Soleimani, M.B. Oghazian, Job satisfaction and the factors affecting satisfaction in nurse educators: a systematic review, J. Prof. Nurs. 34 (5) (2018) 389–399, https://doi.org/10.1016/j.profnurs.2018.07.004.
[16] A.N. de Wijn, M. Fokkema, M.P. van der Doef, The prevalence of stress-related outcomes and occupational well-being among emergency nurses in The Netherlands and the role of job factors: a regression tree analysis, J. Nurs. Manag. 30 (1) (2022) 187–197, https://doi.org/10.1111/jonm.13457.
[17] Guillemin M., Nicholas R., Core values at work-essential elements of a healthy workplace 2022 Int. J. Environ. Res. Publ. Health 30;19(19) (2022):12505. doi: 10.3390/ijerph191912505.
[18] T. Dicke, F. Stebner, C. Linninger, M. Kunter, D. Leutner, A longitudinal study of teachers' occupational well-being: applying the job demands-resources model, J. Occup. Health Psychol. 23 (2) (2018) 262–277, https://doi.org/10.1037/ocp0000070.
[19] D.J. Madigan, L.E. Kim, Does educator burnout affect students? A systematic review of its association with academic achievement and student-reported outcomes, Int. J. Educ. Res. 105 (2021) 101714.
[20] L. Cui, The role of educator-student relationships in predicting educators' occupational wellbeing, emotional exhaustion, and enthusiasm, Front. Psychol. 13 (2022) 896813, https://doi.org/10.3389/fpsyg.2022.896813.
[21] T. Saaranen, K. Tossavainen, H. Turunen, V. Kiviniemi, H. Vertio, Occupational well-being of school staff members: a structural equation model, Health Educ. Res. 22 (2) (2007) 248–260, https://doi.org/10.1093/her/cyl073.
[22] S. Laine, K. Tossavainen, T. Pertel, K. Lepp, H. Isoaho, T. Saaranen, Occupational well-being: a structural equation model of Finnish and Estonian school, Global J. Health Sci. 10 (8) (2018) 79–90.
[23] A. Vauhkonen, K. Honkalampi, M. Hult, M. Hujo, T. Saaranen, Occupational well-being of the work community in social and health care education during the COVID-19 pandemic-A cross-sectional study, Nurs open 10 (6) (2023) 3992–4003, https://doi.org/10.1002/nop2.1658.
[24] D.F. Polit, C.T. Beck, Essentials of Nursing Research, eleventh ed., Lippincott Williams and Wilkins, 2020.
[25] R.B. Kline, Principles and Practice of Structural Equation Modeling, fourth ed., The Guilford Press, 2016.
[26] J. Collier, Applied structural equation modeling using AMOS. Basic to Advanced Techniques, first ed., Routledge, 2020.
[27] Finnish National Board on Research Integrity TENK, The ethical principles of research with human participants and ethical review in the human sciences in Finland. Finnish National Board on Research Integrity TENK Guidelines 2019 (2019). https://www.tenk.fi/sites/tenk.fi/files/Ihmistieteiden_eettisen_ennakkoarvioinnin_ohje_2019.pdf.

[28] GDPR 2016/679. General data protection regulation. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32016R0679.
[29] Jr.B.E. Whitley, M.E. Kite, Principles of Research in Behavioral Science, fourth ed. (fourth ed., Routledge, 2018 https://doi.org/10.4324/9781315450087.
[30] C. Roy, Key issues in nursing theory: developments, challenges, and future directions, Nurs research 67 (2) (2018) 81–92, https://doi.org/10.1097/NNR.0000000000000266.
[31] L.O. Walker, K.C. Avant, Strategies for Theory Construction in Nursing, sixth ed., Pearson, 2018.
[32] P.J. Grace, D.G. Willis, C. Roy, D.A. Jones, Profession at the crossroads: a dialog concerning the preparation of nursing scholars and leaders, Nurs. Outlook 64 (1) (2016) 61–70, https://doi.org/10.1016/j.outlook.2015.10.002.
[33] H. Kyngäs, K. Mikkonen, M. Kääriäinen, The Application of Content Analysis in Nursing Science Research, Springer International Publishing, 2019.
[34] A.I. Meleis, Theoretical Nursing: Development and Progress, fifth ed., Lippincott Williams & Wilkins, Philadelphia, 2012.
[35] J.H. Bottiani, C.A.K. Duran, E.T. Pas, C.P. Bradshaw, Educator stress and burnout in urban middle schools: associations with job demands, resources, and effective classroom practices, J. Sch. Psychol. 77 (2019) 36–51, https://doi.org/10.1016/j.jsp.2019.10.002.
[36] C. Singh, W. Cross, I. Munro, D. Jackson, Occupational stress facing nurse academics-A mixed-methods systematic review, J. Clin. Nurs. 29 (5–6) (2020) 720–735, https://doi.org/10.1111/jocn.15150.
[37] J. Liao, X.Q. Wang, X. Wang, The effect of work stress on the well-being of primary and secondary school educators in China, Int. J. Environ. Res. Publ. Health 20 (2) (2023) 1154, https://doi.org/10.3390/ijerph20021154.
[38] T. Saaranen, P. Kankkunen, A. Juntunen, The status and promotion of the occupational well-being of health care educators – the perspective of workers and their work, Nurs. Sci. 32 (3) (2020) 154–165.
[39] S. Nissilä, A. Karjalainen, M. Koukkari, It is the shared aims, trust and compassion that allow people to prosper: educator educators' lifelong learning in competence-based education, Eur. J. Educ. Res. 11 (2) (2022) 965–980, https://doi.org/10.12973/eu-jer.11.2.965.
[40] B. Chen, G. Ren, Y. Liu, Assessing the determinants of educators' job happiness in the private universities, Front. Psychol. 13 (2022) 1018517, https://doi.org/10.3389/fpsyg.2022.1018517.
[41] M.J. Derby-Davis, Predictors of nursing faculty's job satisfaction and intent to stay in academe, J. Prof. Nurs. 30 (1) (2014) 19–25, https://doi.org/10.1016/j.profnurs.2013.04.001.
[42] Y.R. Lee, H.R. Kim, S. Lee, Effect of educator's working conditions on voice disorder in Korea: a nationwide, Ann Occup Environ Med 30 (2018) 43, https://doi.org/10.1186/s40557-018-0254-8.
[43] A.A. Abdul Rahim, M.S. Jeffree, D.M. Ag Daud, N. Pang, M.F. Sazali, Factors associated with musculoskeletal disorders among regular and special education educators: a narrative review, Int. J. Environ. Res. Publ. Health 19 (18) (2022) 11704, https://doi.org/10.3390/ijerph191811704.
[44] M. Saïd, S. Temam, S. Alexander, N. Billaudeau, M. Zins, S. Kab, M.N. Vercambre, Educators' health: how general, mental and functional health indicators compare to other employees? A large French population-based study, Int. J. Environ. Res. Publ. Health 19 (18) (2022) 11724, https://doi.org/10.3390/ijerph191811724.
[45] B. Moon, M. Morash, J. McCluskey, Student violence directed against educators: victimized educators' reports to school officials and satisfaction with school responses, J. Interpers Violence 36 (13–14) (2021), https://doi.org/10.1177/0886260519825883. NP7264–NP7283.