Developing the occupational well-being of health care educators in Estonia and Finland – community-based participatory action research

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Abstract

Purpose – The study aims to evaluate the occupational well-being outcomes of the Community-based Participatory Occupational Well-being Intervention for Educators among health care educators.

Design/methodology/approach – This study was a community-based participatory action research with pre-test–post-test design, including a year-lasting occupational well-being intervention in the work communities of two higher education institutions for health care in Estonia and one in Finland. Data were collected from Estonian ($N = 196$) and Finnish health care educators ($N = 42$) at the pre- and post-intervention by an electronical survey. The intervention included an online occupational well-being course and community-specific development plan, and actions carried out by the Occupational Well-being Development Teams formed in each work community. Data were analysed statistically.

Findings – Personal occupational well-being increased in each work community (post-test median 4, scale 0–5) although statistically significant differences were not found. Satisfaction with the occupational well-being development activities increased, especially in the Finnish work community (pre-test mean 2.5, SD 0.8; post-test mean 3.2, SD 1.2, $p = 0.005$). The study found some increase in certain aspects of occupational well-being in relation to the development actions.

Practical implications – This intervention can act as a facilitator in community-level occupational well-being development but requires a longer period to make the changes visible. Although the results of this study cannot be directly generalized, the intervention and good practices conducted can be utilised in the development of occupational well-being in education at national and international levels.

Originality/value – This study adds information to this understudied area of intervention research on promoting health care educators' occupational well-being.

Keywords Community-based intervention, Health care, Educator, Participatory action research, Occupational, Well-being

Paper type Research paper

1. Introduction

Recently, increased international research on the occupational well-being of educators working in health care education exposes the fact that educators often have high workloads, backlogs and a work–life imbalance (Boamah *et al.*, 2023; Farber *et al.*, 2023; Dugger, 2023; Rinne *et al.*, 2022). These factors relate to the mental strain experienced by the educators and reflect in their intention to remain in the profession (Boamah *et al.*, 2023; Dugger, 2023). In addition, long working hours with prolonged sitting times (Rinne *et al.*, 2023; Sturgeon *et al.*, 2017) may cause musculoskeletal disorders (Çelikkalp *et al.*, 2022; Howard *et al.*, 2022). Moreover, many organisational, managerial and interaction factors are related to the occupational well-being of health care educators (Arian *et al.*, 2018; Boamah, 2022; Singh *et al.*, 2020, 2021). Transformational leadership (Boamah, 2022) and a working culture that encourages educators' autonomy, open discussion, teamwork and mentoring (Arian *et al.*, 2018; Singh *et al.*, 2020) are closely associated with work-related well-being. In addition, the competence of educators to handle their own work management is important for experienced personal occupational well-being (Vauhkonen *et al.*, 2024a). Investing in occupational well-being is paramount to retaining the workforce and responding to the increased burden placed on the health care sector. It is important for management, administration and educators themselves to find ways to improve occupational well-being (Rinne *et al.*, 2022, 2023; Vauhkonen *et al.*, 2023; Watson, 2023) and to reduce the mental stressors on educators (Zangaro *et al.*, 2023).

The definition of occupational well-being varies depending on the context under consideration, that is, the discipline, and the focus of the research (Hascher and Waber, 2021). The focus of this study is on a resource-based perspective of occupational well-being (Kööp *et al.*, 2023) based on a Content Model for the Promotion of School Community Staff's Occupational Well-being (Content Model ProSchoolSOWE) (Saaranen *et al.*, 2015). According to the model, occupational well-being is formulated through four aspects: (1) Working conditions, such as physical and biological factors, occupational safety and equipment, (2) The work community, including management, social support and information, (3) Worker's resources and work, such as health, mental and physical workload and occupational health services and (4) Professional competence, meaning a sufficient education, continuing education opportunities and meeting the competence required at work (Saaranen *et al.*, 2015; Rinne *et al.*, 2022). These aspects can either be resources or workload factors: they

can promote or prevent occupational well-being depending on the situation in the workplace. When the resources and workload factors are balanced, employees and work communities can achieve occupational well-being (Kööp *et al.*, 2023).

Relatively few studies have focused on occupational well-being interventions for educators in the health care education. However, positive results have been achieved through community (Blake and Gartshore, 2016; Stegen and Wankier, 2018; Wiklund Gustin *et al.*, 2020) and individual level interventions (Bentley, 2013; Kavurmaci *et al.*, 2022; Rinne *et al.*, 2023). A cognitive relational group programme on recovery from work-related stress found strategies to manage stress, knowledge and understanding of psychological processes related to work stress (Wiklund Gustin *et al.*, 2020). In another year-long gratitude intervention in the work community, approaches such as a gratitude wall, gratitude moments and discussions increased job satisfaction (Stegen and Wankier, 2018). Interventions utilising online platforms and mobile applications are cost-effective and user-friendly methods (Blake and Gartshore, 2016; Rinne *et al.*, 2023; Thai *et al.*, 2023). Evidence exists of positive findings about the feasibility and acceptability of digital workplace wellness interventions (Thai *et al.*, 2023). However, digital intervention studies in the development of occupational well-being of teaching staff are still understudied, particularly among health care educators. In a study by Blake and Gartshore (2016), an online tool increased workplace wellness knowledge. Recently eight-week digital occupational well-being intervention containing self-conducted exercises increased general well-being, aid recovery experiences and self-regulation of health care educators (Rinne *et al.*, 2023). More broadly in the field of education, occupational well-being interventions have been implemented following the participatory research approach (Bakhuys Roozeboom *et al.*, 2020; Laine *et al.*, 2018), which can also be used in promoting occupational well-being in health care education (Kööp *et al.*, 2023).

This research fulfils the three key principles; *participation of the community members*, *equal power and joint planning*, which are described by Eisinger and Senturia (2001) as the foundation of community-based participatory action research (CBPAR). The CBPAR research has a very local and practical focus and is community orientated and focuses on the needs of a particular group. Involvement, engagement and collaboration of the work community are facilitated at all stages of the action research process, and participants can almost be considered as co-researchers. Researcher and study participants work together to understand a problematic situation and develop it with the aim of obtaining a better outcome (Ivankova, 2015; Vivona and Wolfgram, 2021). In this way, the development and research processes are a form of cooperation between the researchers and participants (Ivankova, 2015; Cardiff *et al.*, 2018; Ryan and McAllister, 2020; Vivona and Wolfgram, 2021). In action research, the spiral-like cycle of the planning, action, observation and reflection phases occurs several times and can overlap (Ivankova, 2015).

When developing occupational well-being at the workplace level, it is important that development actions are based on the needs arising from the work community (Kööp *et al.*, 2023; Laine *et al.*, 2018). Thus, the goal is to encourage the work community to become committed to the development activities and ensure that the development activities continue after the actual intervention has been carried out (Kööp *et al.*, 2023). This emphasises organisational learning where members of the community interact through educational processes, team learning and shared experiences, leading to a sense of collectivity in each individual's learning. Through these processes the work community can engage in occupational well-being as a joint goal and value (Wang and Ahmed, 2003; Wiklund-Engblom *et al.*, 2023), leading to improved work practices (Donnelly and Morton, 2019).

The practical nature and local character of CBPAR does not indicate that the research is limited and only has a local impact (Ivankova, 2015). Good results have been obtained from participatory research approaches in school contexts and at national and international levels (Bakhuys Roozeboom *et al.*, 2020; Saaranen *et al.*, 2015; Laine *et al.*, 2018). CBPAR, with international cooperation and utilizing digital platforms, can provide cost-effective solutions for the development of occupational well-being in education, and shared good practices at local, regional and international levels (Blake and Gartshore, 2016). The objective of this study was to

evaluate the occupational well-being outcomes of the Community-based Participatory Occupational Well-being Intervention for Educators (CBP-OWE) among health care educators.

2. Material and methods

2.1 Study design

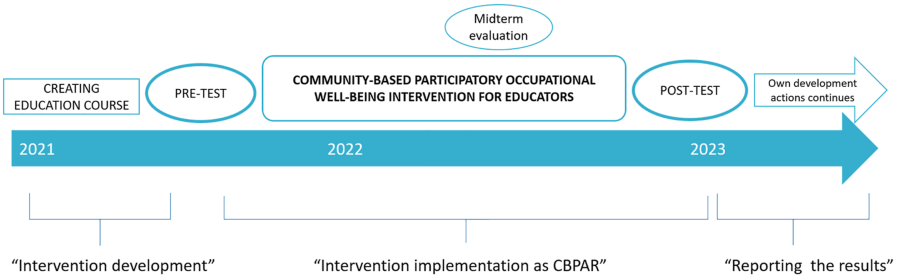
This study was a community-based participatory action research, with pre-test-post-test design, including a year-lasting occupational well-being intervention in the work communities of two higher education institutions for health care in Estonia and one in Finland (Figure 1). The study was a part of two research and development projects: *Social and health care teachers' occupational well-being in Finland -research and development project, 2020–2023*, and *Developing Occupational Well-being of Health Care Teachers in Estonia – participatory action research, 2021–2023*. Best Practices in the Reporting of Participatory Action Research (Smith *et al.*, 2010) and the STROBE Checklists (2023) were followed when reporting this study.

2.2 The instrument

The planned research used the Finnish and Estonian instrument *Occupational well-being of social and health care teachers -index questionnaire* (*OWESoHeT-instrument)*. The questionnaire consists of four items covering occupational well-being and activities promoting occupational well-being (continuous scale 0–5, 0 = very poor, 5 = very good), and 69 items covering the four aspects of occupational well-being; (1) working conditions, (2) work community, (3) worker's resources and work and (4) professional competence (1–5 Likert scale, 1 = totally disagree to 5 = totally agree). In addition, the instrument has nine open-ended questions and background variables related to work and education, which may be relevant to the implementation of the intervention. This validated instrument (Vauhkonen *et al.*, 2024b) was chosen because it is based on a strong tested theory (Content Model ProSchoolSOWE) in the context of education. In addition, the previous version of the instrument, Well-being at Your Work -index questionnaire, has been used in several action research projects to assess the state and development of occupational well-being in the work community (Saaranen *et al.*, 2015; Laine *et al.*, 2018).

The questionnaire data collection method was chosen because of the large quantity of participants. In this way, all participants would have a similar opportunity to participate in defining the state of the occupational well-being and development needs of their organisation population. The questionnaire contains both quantitative items and qualitative open-ended questions to obtain a wider understanding of the situation in the specific context (Vivona and Wolfgram, 2021). Qualitative results were utilized to define occupational well-being development needs, but these results are not reported in this paper (Kööp *et al.*, 2023).

The Finnish instrument was translated into Estonian, after which it was back translated to Finnish by a separate philologist and compared to the original instrument. Minor discrepancies were solved (Guillemin *et al.*, 1993). The Finnish instrument was tested by 33 Finnish health



Source(s): Authors' own work, CBPAR community-based participatory action research

Figure 1. The study design employed in the work communities of Estonian and Finnish health care education

and social care educators and the Estonian instrument by eight Estonian university teachers and master's students in Nursing Science; it was found to be comprehensible for usage.

2.3 Study participants and data collection

This study used convenience sampling. The study sample comprised the work community members from two higher education institutions for health care in Estonia ($N = 196$; Estonia A: 105 educators, Estonia B: 91 educators) and one in Finland ($N = 42$); the number of educators reflect those at the time of the data collection in 2021–2023. In the post-test the number varied; Estonia ($N = 219$; Estonia A: 124 educators, Estonia B: 95 educators) and Finland ($N = 49$). All educators teaching in vocational and master programmes during the data collection periods were recruited to participate in the study. This study focused on the entire work community, and the results were intended to reflect the whole working community at both time points. Therefore, all the educators were invited to participate in the post-test, regardless of whether they had answered the pre-test survey. Furthermore, it was expected that when the semesters changed, some changes in the staff would occur in every work community. Within the work communities, the most engaged study participants were the Occupational well-being development teams (OWE-teams) (6–10 person/work community). The OWE-team members acted as key players and co-researchers during this action research.

The pre-test and post-test data were collected by an electronic OWESoHeT-instrument. The pre-test data were collected between October–November 2021 and the post-test data during a one-month period (October–November 2022 in Estonia, January–February 2023 in Finland). The contact persons from the Estonian education institutions sent the electronic survey link to the Estonian study sample. The researcher sent the survey link to the Finnish study sample. An information sheet and a privacy notice were sent together with the survey link. Three to four reminders were sent during pre-test and post-test periods.

Altogether 127 participated in the pre-test (participation rate 53.4%) and 129 in the post-test (participation rate 48.1%). The average age of the participants in different work communities varied from 44 to 49 years, and the average work experience was 8–14 years. Most educators had master's degree from university and worked as permanent contract. The participants in work communities in both timepoints were corresponding in relation to chosen backgrounds (Table 1).

Table 1. Demographics of the participants in the work communities

	Estonia A T0 $n = 46$ Mean (SD)	Estonia A T1 $n = 50$ Mean (SD)	Estonia B T0 $n = 51$ Mean (SD)	Estonia B T1 $n = 52$ Mean (SD)	Finland T0 $n = 30$ Mean (SD)	Finland T1 $n = 27$ Mean (SD)
Age in years	44.9 (11.9)[1]	43.6 (12.7)[3]	46.8 (10.1)[2]	45.2 (9.6)[1]	48,5 (9.1)	46.6 (8.3)[2]
Work experience as an educator	11.4 (9.6)[2]	10.5 (10.6)[2]	13.7 (9.1)[1]	12.6 (8.8)[2]	9.5 (9.3)	7.8 (8.1)
Highest degree	*%*	*%*[1]	*%*	*%*	*%*	*%*
Bachelor's degree/other	6.5	20.0	15.7	23.1	0	0
Master's degree	82.6	74.0	70.6	63.5	93.4	96.3
Doctor's degree	10.9	6.0	13.7	13.5	6.7	3.7
Employment contract	*%*	*%*[1]	*%*[2]	*%*	*%*	*%*[1]
Permanent	82.6	89.8	81.6	80.8	73.3	69.2
Temporary	17.3	10.2	18.4	19.2	26.7	30.8
Remote work at least partially	*%*[1]	*%*	*%*[2]	*%*	*%*	*%*
Yes	48.9	42.0	57.1	21.2	66.7	63.0
No	51.1	58.0	42.9	78.8	33.3	37.0

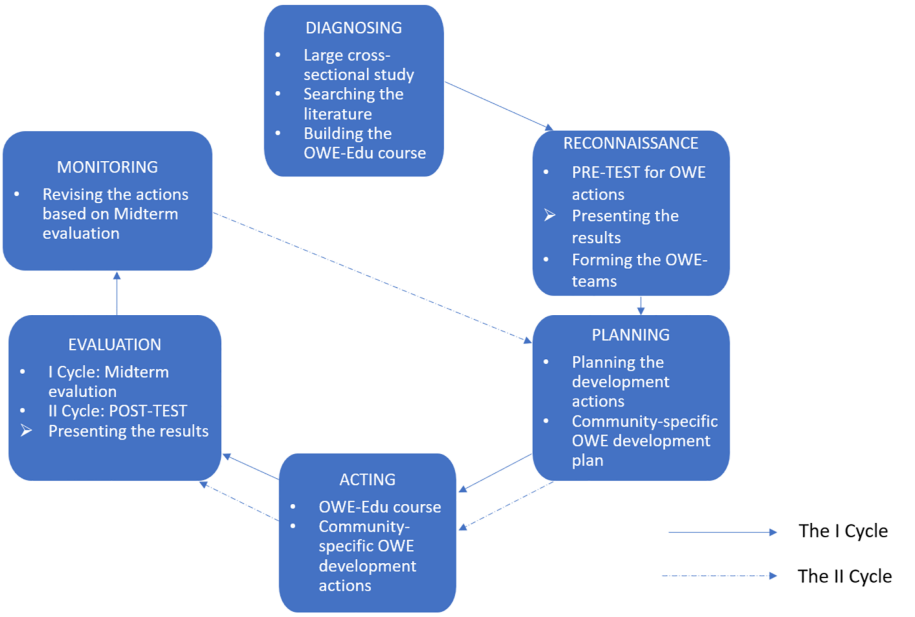
Source(s): Authors' own work, T0 pre-test, T1 post-test, [number]amount of the missing information

2.4 Community-based participatory occupational well-being intervention for educators

The CBP-OWE intervention consisted of components implemented similarly in all participating work communities, as well as community-specific plans and actions decided by the work communities. The main components of the CBP-OWE intervention were (1) OWE-teams, (2) Occupational WEll-being for Educators (OWE-Edu) course, community-specific (3) Occupational well-being development plan and (4) Occupational well-being development actions. CBP-OWE intervention implementation adapted the model of the steps in action research process by Ivankova (2015; Figure 2): *diagnosing*, *reconnaissance*, *planning*, *acting*, *evaluation* and *monitoring*. These steps were partly overlapping.

2.4.1 Intervention development. The *Diagnosing step* refers to the preparation phase and intervention development, which was essential for identifying the problem and phenomena on a larger scale. A large cross-sectional survey study using OWESoHeT-instrument was conducted in autumn 2020. This survey was used to describe and evaluate occupational well-being and related factors in the work community of social and health care educators, and to identify the needs for developing occupational well-being in Finland (Rinne *et al.*, 2022; Vauhkonen *et al.*, 2023). In addition, based on the development needs identified from the cross-sectional study and relevant research literature, occupational well-being experts from the research group created an online occupational well-being course (Occupational WEll-being for Educators, OWE-Edu) in a digital learning environment (Moodle). OWE-Edu course aimed to facilitate educators' knowledge, orientate and create tools to develop occupational well-being at an individual and work community level. The online course was tested by four university educators.

2.4.2 Intervention description and implementation as CBPAR. In the *reconnaissance step*, the needs and resources of each community were identified by the pre-test (T0) (Ivankova, 2015); because it is equally important to recognize the resources of the community



Source(s): Authors' own work, adapted from Ivankova (2015), OWE occupational well-being, OWE-Edu Occupational WEll-being for Educators course

Figure 2. The action research process

(Saaranen *et al*., 2015) to think how the resources can be used as a booster in development actions. Both qualitative and quantitative methods were used to gain a more complete understanding of the phenomena (Creswell and Plano Clark, 2018; Vivona and Wolfgram, 2021). Based on the pre-test, the educators considered their work to be important, experienced a sense of high professional competence and received good support from their colleagues.

At this step, the OWE-teams (1. component) were formed on a voluntarily basis in each work community (6–10 person/work community). Each work community received the analysed quantitative and qualitative results from the pre-test, and these were also presented to the whole work community and discussed with the OWE-teams. The occupational well-being development needs that arose from the occupational well-being aspects were: working conditions, work community and worker's resources and work.

In *the planning step***,** the community-specific development actions were planned together with the work communities (Ivankova, 2015). After the data collection and presentation of the results, OWE-teams started to prepare the community-specific Occupational well-being development plan together in close cooperation with the research group.

In the *action step*, the planned actions were implemented (Ivankova, 2015). These actions consisted of the OWE-Edu course together with the occupational well-being development plan and actions based on the community-specific development needs identified in the pre-test (Creswell and Plano Clark, 2018; Field, 2018.). The online *OWE-Edu course* (0,5 ECTS) (2. component) consisted of occupational well-being and related factors in education using methods such as short videos, written material and optional reflective thinking assignments including online interaction with other participants. In addition, a larger course content was created for the OWE-teams. The extended course (5 ECTS) also included the creation of the community-specific *Occupational well-being development plan* (3. component). Altogether 47 educators participated in the online OWE-Edu course.

The OWE-teams in each work community implemented the community-specific *Occupational well-being development actions* (4. component) with a focus on the priorities of the occupational well-being development plan. These actions varied in each work community due to the different development needs identified at the reconnaissance step (Kööp *et al*., 2023; Laine *et al*., 2018). The development actions focused on the work organisation, mentoring, open communication, work ergonomics and sport activities containing the following occupational well-being aspects: working conditions, work community and worker's resources and work (Table 2).

The *evaluation step* included the mid-term evaluation in the first cycle, which was followed by the *monitoring step*, where it was possible to revise and improve the intervention based on the evaluation results. This led to the second cycle, where the actions were re-planned, and those actions which were considered meaningful in developing occupational well-being were continued (Ivankova, 2015). These steps partly overlapped, and the process of reflection was continuous during the action research.

As the *action step* began, qualitative evaluation methods were used throughout the whole action research process, including discussions, online meetings and written feedback (not included in the research data). A qualitative midterm assessment survey was conducted to evaluate (*evaluation step*) the action, and if needed, to revise *(monitoring step)* the planned development activities (Ivankova, 2015). In this way, it was possible to focus on those actions that have proven to promote occupational well-being (Saaranen *et al*., 2015; Laine *et al*., 2018). After the one-year intervention, the post-test survey (T1) was carried out, and the results were presented and reflected on in all three work communities. Each work community received detailed written report. In addition to this, the intervention experiences of the Finnish work community were gathered through individual interviews, and intervention outcomes in a quasi-experimental setting as a pilot study. However, these results will be reported in another research article.

Table 2. Summary of the objectives and development actions in the work communities

Objectives/ actions	Estonia A	Estonia B	Finland
Objective A	Work community: Developing open communication and collaboration • Prevention and coping with bullying in order to increase well-being at work and develop the positive work environment • Facilitating communication between employees	Work community/ worker's resources and work • Promoting organisational culture and psychological well- being	Work community/worker's resources and work • Development of work organisation and work planning in terms of o Balance between project work/teaching o Class schedule process o Clear and open information and decision making o Opportunity for work supervision
Objective B	Working conditions/worker's resources and work: Developing work ergonomics • Provision of ergonomic equipment • Development of the employees' knowledge on ergonomics • Reduction of sitting time and increasing physical activity	Worker's resources and work • Promoting the physical activity of workers	Work community • Development of mentoring and orientation
Action A	• Seminar on bullying • Introduction of the college trustee and psychologist • Joint events outside working hours: e.g. a skating disco	• Renewal and development of the orientation programme and the mentorship programme • Survey among employees to identify bullying and unequal treatment • Instruction on how to improve mental well-being	Balance between project work/ teaching • Benchmarking other universities • More resources to project planning Class schedule process: Engagement to the process and planning • Calendar reminders of the planning process • Clear instructions (easy access and short videos) Information and decision making • Meeting schedules well in advance and agendas attached to invitations • Offering opportunity for work supervision
Action B	• Creating example classroom of ergonomic furniture • Provision of standing desks, footrests and other ergonomic aids • Seminar of work ergonomics • Movement breaks • Using more office rooms and auditoriums to reduce sitting time • Nutrition and exercise e-course	• Partial compensation of the expenses related to sport	• Mapping experiences of new employees • A mentor named for each employee • Resources for mentoring

Source(s): Authors' own work

2.5 Data analysis

The data were analysed using IBM SPSS statistics 27. Descriptive and multivariate analysis methods were used in the data analysis. Descriptive analysis (F, %, mean, standard deviation, minimum, maximum) was used to describe the data. Individual items from the aspects of occupational well-being (Working conditions, Work community, Workers' resources and work and Professional competence) were formed as sum variables based on previous factor analyses (Rinne *et al.*, 2022; Vauhkonen *et al.*, 2023, 2024b). The internal consistency of the aspects of occupational well-being and the sum variables formed was confirmed by the Cronbach's Alpha reliability coefficient calculated for the whole data set from both timepoints. The normality of the data was tested by Kolmogorov–Smirnov test, Quantile-Quantile (QQ) plot and a visual examination of the histograms. Independent sample T-tests and Mann–Whitney U Tests were used depending on the distribution. Some individual items were also examined, as they were aligned with the planned development actions. Individual items were tested by the Chi-Square test, Fisher's exact test or Mann–Whitney U Test depending on the assumptions of the Chi-Square test: no more than 20% of the cells have expected values less than 5, no cell should have expected value (count) less than 0. A listwise deletion method was used for missing values when performing the analyses (Grove *et al.*, 2013; Field, 2018). The Likert scale (1–5) items were summarized as 1–2 = disagree, 3 = neither agree nor disagree, 4–5 = agree when reporting of the results.

2.6 Ethical considerations

The study followed the ethical principles of the Declaration of Helsinki (2013) and responsible research publication (Wager and Kleinert, 2011). Participation in the survey was based on voluntary and informed consent which was requested at the beginning of the questionnaire. The ethical statements were issued by the UEF Committee on Research Ethics (7/2021 15.4.2021), Finland, and the Research Ethics Committee of the University of Tartu (345/T-21), Estonia. Research approval was obtained from all the participating educational institutions. The general data protection regulation was adhered to at every stage of the study (GDPR, 2016/679).

3. Results

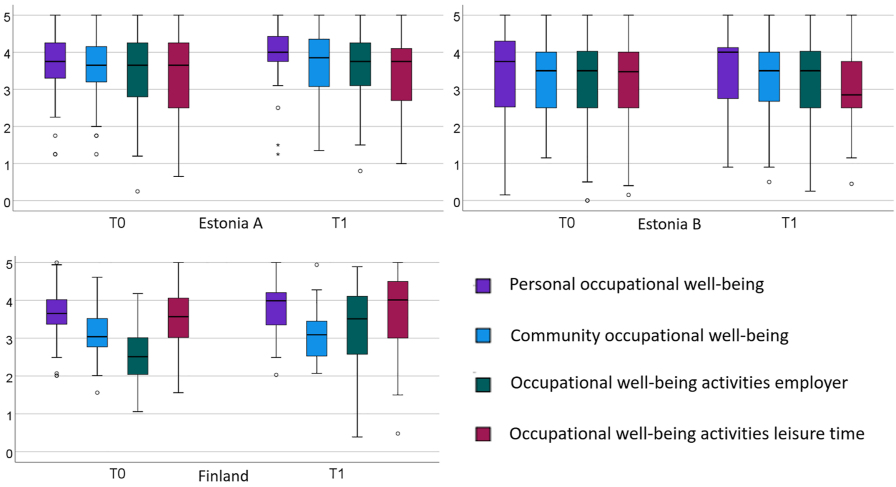
3.1 Occupational well-being and occupational well-being activities

Overall, occupational well-being was evaluated as moderate to good at both timepoints. The median values of experienced personal occupational well-being in all three work communities were higher in the T1. Half of the participants experienced personal occupational well-being of at least 4 in the T1 (scale 0–5, 5 = best possible, Figure 3). In the Finnish work community especially, the experience of the occupational well-being development activities supported by the employer were higher in the T1 (T0 mean 2.5, SD 0.8; T1 mean 3.2, SD 1.2, $p = 0.005$; Table 3), but also improvement was shown in the Estonian work communities.

3.2 Occupational well-being aspects

In the Estonian work communities, no significant changes were found in those occupational well-being aspects under community-specific development action (Table 4). In the Estonian A work community, the individual items showed no significant increase between the two timepoints in relation to community-specific development actions, one item even decreased (work resources supporting lifestyle) (Supplementary Table A). Hence, the overall results from both timepoints were quite high.

It is noteworthy that from the individual items, the Estonia B work community experiences from the open discussion, appreciation and avoidance of musculoskeletal symptoms were more positive in the T1. Fewer participants (8%) disagreed that people can openly discuss things related to work (T0 24%, $p = 0.045$). No one experienced that their work is not



Source(s): Authors' own work, T0 pre-test, T1 post-test. The boxes represent 50% of the values, and the lines spitting the boxes are the median values

Figure 3. Occupational well-being and occupational well-being activities (boxplot)

Table 3. Occupational well-being and occupational well-being activities. Mean, standard deviation (SD), scale 0–5, 5 = best possible

Item	Estonia A mean (SD)		Estonia B mean (SD)		Finland mean (SD)	
	T0 $n = 46$	T1 $n = 50$	T0 $n = 51$	T1 $n = 52$	T0 $n = 30$	T1 $n = 27$
Personal OW	[1]3.7 (0.9)	[3]3.9 (0.7)	3.4 (1.2)	[1]3.4 (1.0)	3.6 (0.8)	3.8 (0.8)
Community OW	[1]3.6 (0.9)	[3]3.6 (0.9)	3.4 (1.0)[a]	[1]3.2 (1.0)[a]	[1]3.2 (0.7)	3.1 (0.7)
OW activities work community	[1]3.4 (1.2)	[2]3.6 (1.0)	3.2 (1.2)	[1]3.3 (1.1)	*[1]2.5 (0.8)* **	*3.2 (1.2)* **
OW activities leisure time	[3]3.4 (1.1)	[1]3.5 (1.1)	[1]3.1 (1.2)	[2]3.0 (1.1)	[1]3.5 (0.9)	3.6 (1.2)

Source(s): Authors' own work, scale 0–5, continuous item. ** significant at the $p < 0.01$ level, Mann–Whitney U test, [a]Independent samples t-test. T0 pre-test, T1 post-test, OW occupational well-being, [number]amount of the missing information

appreciated in the working community (T0 16%, $p = 0.009$). In addition, 10% considered that their working posture and movements caused musculoskeletal symptoms in the T1, while in the T0 it was 28% ($p = 0.016$). However, fewer participants in the T1 considered that their lifestyle support their resources at work (T0 69%, T1 51%, $p = 0.027$; Supplementary Table B). In addition, professional competence was experienced as being at a lower level in the T1 (T0 mean 4.22, SD 0.44; T1 3.96, SD 0.49, scale 1–5, $p = 0.004$; Table 4).

In the Finnish work community, experiences of working conditions were more positive in the T1 timepoint (T0 mean 3.23, SD 0.67; T1 mean 3.53 SD 0.67, $p = 0.01$); of which workspace and equipment (T0 mean 3.36, SD 0.86; T1 mean 3.96, SD 0.65, $p = 0.006$). In addition, experiences of workplace support were higher in the T1 (T0 mean 2.74, SD 0.67; T1 mean 3.20, SD 0.73, $p = 0.002$; Table 4). From the individual items in relation to community-specific development actions; an increase was especially in sufficient workplace support for promoting occupational well-being during working hours (T0 agreed 10%; T1 agreed 26%,

Table 4. Occupational well-being aspects. Mean, standard deviation (SD), scale 1–5

Aspects/sum variables	Estonia A Mean (SD) T0 $n = 46$	Estonia A Mean (SD) T1 $n = 50$	Estonia B Mean (SD) T0 $n = 51$	Estonia B Mean (SD) T1 $n = 52$	Finland Mean (SD) T0 $n = 30$	Finland Mean (SD) T1 $n = 27$
1. Working conditions ($\alpha = 0.848, 0.852$)	[2]3.84 (0.75)[a]	[2]3.77 (0.65)[a]	[1]3.77 (0.78)	3.71 (0.54)	*3.23 (0.67)**	*[1]3.53 (0.67)**
Air and temperature ($\alpha = 0.769, 0.807$)	[2]3.89 (0.80)	[1]3.81 (0.67)	[1]3.70 (0.88)	3.52 (0.71)	3.45 (0.81)[a]	[1]3.76 (0.98)[a]
Workspaces and equipment ($\alpha = 0.750, 0.744$)	3.99 (0.70)	[1]3.98 (0.70)	4.17 (0.75)	4.10 (0.59)	*3.36 (0.86)***	*[1]3.96 (0.65)**
Workspace ergonomics ($\alpha = 0.691, 0.620$)	3.59 (1.10)	3.57 (0.97)	3.46 (1.20)	3.51 (0.97)	2.88 (1.16)	[1]2.88 (0.95)
2. Work community ($\alpha = 0.942, 0.931$)	3.94 (0.62)[a]	[4]3.78 (0.58)[a]	[2]3.67 (0.72)	[3]3.68 (0.63)	3.41 (0.57)[a]	3.32 (0.65)[a]
Management and information ($\alpha = 0.871, 0.861$)	3.98 (0.72)	[2]3.82 (0.69)	3.59 (0.87)	[1]3.59 (0.78)	3.02 (0.75)	2.93 (1.01)
Working arrangements ($\alpha = 0.808, 0.775$)	3.90 (0.67)[a]	[1]3.76 (0.67)[a]	[1]3.56 (0.83)	[1]3.58 (0.69)	3.25 (0.68)[a]	3.29 (0.80)[a]
Collegiality and work atmosphere ($\alpha = 0.895, 0.893$)	3.78 (0.84)[a]	[1]3.68 (0.82)[a]	[1]3.58 (0.90)	3.71 (0.79)	3.54 (0.68)[a]	3.22 (0.78)[a]
Appreciation ($\alpha = 0.865, 0.794$)	4.10 (0.62)	3.91 (0.67)	3.80 (0.81)	[1]3.89 (0.59)	3.82 (0.73)	3.85 (0.80)
Worker's resources and work ($\alpha = 0.887, 0.854$)	[2]3.66 (0.73)[a]	[3]3.68 (0.63)[a]	[1]3.41 (0.77)[a]	[2]3.44 (0.60)[a]	3.08 (0.62)[a]	3.21 (0.65)[a]
Resources and mental workload ($\alpha = 0.842, 0.863$)	3.60 (0.94)	[2]3.71 (0.89)	3.19 (0.98)[a]	[2]3.17 (0.88)[a]	2.55 (0.92)	2.80 (1.08)
Occupational health care services ($\alpha = 0.752, 0.822$)	[1]3.67 (0.88)	[1]3.64 (0.84)	[1]3.64 (0.88)	[2]3.73 (0.85)	3.29 (1.11)[a]	3.02 (1.12)[a]
Workplace support ($\alpha = 0.763, 0.683$)	3.71 (0.78)[a]	[1]3.56 (0.64)[a]	3.11 (0.99)[a]	[1]3.22 (0.87)[a]	*2.74 (0.67)***	*3.20 (0.73)**
Resources and physical workload ($\alpha = 0.712, 0.596$)	[1]3.75 (0.85)	3.81 (0.84)	3.63 (1.01)	[2]3.67 (0.71)	3.73 (0.81)[a]	3.84 (0.87)[a]
Professional competence ($\alpha = 0.924, 0.881$)	[1]4.21 (0.45)[a]	[5]4.16 (0.45)[a]	*[1]4.22 (0.44)***	*[3]3.96 (0.49)**	3.78 (0.85)[a]	3.95 (0.56)[a]
Teaching competence ($\alpha = 0.889, 0.864$)	[1]4.25 (0.52)[a]	[1]4.16 (0.59)[a]	*4.30 (0.59)**	*[1]3.98 (0.69) **	4.10 (0.92)[a]	4.12 (0.72)[a]
Research and project expertise ($\alpha = 0.879, 0.846$)	4.13 (0.73)	[2]4.17 (0.64)	4.09 (0.55)	[2]3.91 (0.74)	3.68 (0.99)	3.83 (0.69)
Language and teaching technology competence ($\alpha = 0.831, 0.673$)	4.24 (0.59)	[1]4.15 (0.62)	*4.23 (0.64)**	*3.96 (0.62)**	3.42 (1.06)	3.89 (0.87)
Professional competence and training ($\alpha = 0.651, 0.650$)	4.25 (0.52)	[1]4.22 (0.60)	*[1]4.22 (0.64)**	*[1]4.00 (0.65) **	3.93 (0.79)	3.94 (0.61)

Source(s): Authors' own work, * significant at $p < 0.05$, level ** significant at $p < 0.01$ level, α Cronbach's Alpha in T0 and T1, Mann–Whitney U Test, [a]Independent samples t-test. T0 pre-test, T1 post-test, [number]amount of the missing information

$p = 0.047$) and leisure time (T0 agreed 60%; T1 agreed 82%, $p = 0.023$), and opportunities for work supervision (T0 agreed 10%; T1 agreed 41%, $p = 0.027$). However, possibilities for open discussion had decreased in the T1 (T0 agreed 53%; T1 agreed 37%, $p = 0.001$; Supplementary Table C).

In general, professional competence was evaluated as the highest aspects and worker's resources and work the lowest, as regards occupational well-being. Educators evaluated their professional competence as high in every work community. In addition, educators experienced having adequate workspaces and equipment, being appreciated as an employee and that their

work was appreciated, as well as high collegiality regarding help and support, and cooperation among colleagues. Work was considered more mentally than physically demanding.

4. Discussion

This study evaluated the occupational well-being outcomes of the CBP-OWE intervention among health care educators in Estonia and Finland. Although the overall personal occupational well-being of educators did not show any statistically significant changes between the two timepoints, the direction in post-test was positive. The core purpose of participatory research is that the development process does not end with the closure of the project but continues as through the organisation's own actions (Kööp *et al.*, 2023; Vivona and Wolfgram, 2021). A community approach and organisational learning can facilitate a long-lasting developmental process (Wiklund-Engblom *et al.*, 2023).

The outcomes varied between work communities. The Finnish work community showed the most positive changes in the post-test. These changes included the employer supported occupational well-being activities, workspaces and equipment and workplace support such as occupational well-being support during working hours and leisure time and work supervision. In the Estonian B work community, the improvement was focused mainly on individual items in relation to community-specific development actions such as open communication, appreciation and avoidance of musculoskeletal symptoms. In particular, the percentage of negatively perceived responses had decreased. When considering the state of occupational well-being at a work community level, we can consider whether it is more important to have a set of higher results, or less dissatisfied or negatively perceived responses. The latter may lead to better occupational well-being (Singh *et al.*, 2021) and lower sick absences (Howard *et al.*, 2022) to those with occupational health risks.

No significant changes occurred in the Estonian A work community between timepoints. However, it is noteworthy that in the work community in question, occupational well-being and its aspects had already been assessed as being at a high level in the pre-test. This might stem from occupational well-being activities conducted quite actively already before this project. It can cause a ceiling effect in which making statistically significant changes between the timepoints more difficult to achieve for those who score high in the pre-test compared to those with lower scores (Goedendorp and Steverink, 2017). The ceiling effect may have caused non-significant changes in experiences of overall personal occupational well-being in all work communities. Interestingly, satisfaction concerning occupational well-being development action during leisure time slightly decreased in the Estonian B work community, even though one community-specific development action was to compensate for sport expenses. This could stem from the fact that the compensation for sport expenses did not begin until the same autumn as the post-test was carried out. Employees may not have taken advantage of this benefit at the time of the post-test data collection.

Due to geographical issues and the COVID-19 pandemic, interaction with work communities was slightly different, and this also may have played a role in the results. The interaction between the research group and the work community, especially the OWE-team, and the amount of support provided by the research group were based on the needs arising from the work community (Saaranen *et al.*, 2015; Laine *et al.*, 2018). Furthermore, in the CBP-OWE intervention, not all members of the work community participated in the development actions in the same way (Ivankova, 2015). It would be more useful to assess the intervention if the work communities would have participated with same amount of effort, and if the exact same amount of support from the research group had been given to the work communities. A typical feature of this type of research is that the level of participation between researchers and participants varies (Smith *et al.*, 2010). In addition, in accordance with the nature of participatory action research, the researchers are not objectively separated from the research participants and outsiders in the work community. Moreover, vice versa, the participants are

not separated from the planning, progress and reflections of actions as the research, and actions are planned and carried out together with the work communities (Vivona and Wolfgram, 2021).

In this CBP-OWE intervention the interaction between the researchers and the work community were more intense in the Finnish work community. It could be argued whether this affected the significant results in Finnish work community. Bakhuys Roozeboom *et al.* (2020) found positive improvement in an intervention for multiple-case participatory organisational level work stress prevention regarding job demands and job satisfaction. They also measured the implementation process such as the level of employee participation, and communication and dialogues leading to the capture of important factors contributing the effectiveness of the intervention. This CBP-OWE intervention implemented as CBPAR requires high engagement from the whole work community to participate in the surveys, the online course and development actions and special commitment from the OWE-team together with resources, support and authorisation from the management (Vivona and Wolfgram, 2021). In this study, only one-third of the educators participated in the online course on occupational well-being. Although the high workload of health care educators that has emerged in previous studies (Boamah *et al.*, 2023; Dugger, 2023; Rinne *et al.*, 2022) may have been the obstacle to taking part in the course, it would have been useful to clarify the reasons for not participating, as they may aid course development and future interventions. A digital online course is a cost-effective method (Blake and Gartshore, 2016; Thai *et al.*, 2023), but it requires diverse teaching methods and accurate background analysis of the users to achieve engagement, positive outcomes and user experiences. Blake and Gartshore (2016) pilot tested the digital workplace wellness tool for end-users and used images, interactions, quizzes and activities to engage users with positive outcomes. Similarly, in this study, the course was tested, and a variety of methods used to engage the participants.

Organisational contexts are complex (Bakhuys Roozeboom *et al.*, 2020); therefore, distinguishing the effects of this type of long-lasting intervention from those of other development actions within the organisation is difficult. For example, during the study, Finnish work community workspace reforms were implemented, potentially affecting the results. The decreased self-reported professional competence might stem from hiring new employees in the Estonian B work community during the intervention. In Finnish work community, experiences of open discussion decreased, even though this was highly related to objective A (clear and open information and decision making). This might stem from various other development objectives in this work community and the lack of time to address this specific objective. In addition, we must consider the impact of COVID-19 on the nature of work, the working environment and social interaction in the workplace merits consideration (Farber *et al.*, 2023). During the pre-test, workers had only some opportunity to decide for themselves on the amount of remote or face-to-face work as higher management level imposed constraints (Kööp *et al.*, 2023). Noteworthily, compared to those in previous research (Vauhkonen *et al.*, 2023), in general, the resources experienced in the work communities such as collegiality, meaningfulness of the work and appreciation, were similar. In addition, compared to the level of occupational well-being in the large cross-sectional study in Finland during COVID-19 (Vauhkonen *et al.*, 2023), the level here appeared to be higher. When responsibly developing the well-being of a work community, these work community resources are important to utilize.

The intervention lasted for about a year, a fairly long-lasting one; however, changes at the work community level occur slowly (Bakhuys Roozeboom *et al.*, 2020). Based on the results of this study, for a work community-level intervention, one year would seem too short. In addition, the scope and progress of development actions in the work communities differed and could require longer to implement. A similar discussion exists in Bakhuys Roozeboom *et al.* (2020), wherein the implemented actions in their organisation-level stress-prevention programme started at different times in participating organisations. The result was a follow-

up measurement too early to detect significant improvement. In the current study, a further follow-up study could have revealed positive changes in occupational well-being experiences. Therefore, examining how the state of occupational well-being develops in these work communities is important.

Although this CBP-OWE intervention only slightly improved occupational well-being, that this type of participatory long-lasting development process can lead to other meaningful changes in the work community is noteworthy. The mere fact that the management and the work community want to commit to long-term occupational well-being development sends a message to employees that their well-being is supported and viewed as important (Vivona and Wolfgram, 2021; Wiklund-Engblom *et al.*, 2023). This message can strengthen consideration for and the valuing of occupational well-being issues in daily work and decision-making (Wang and Ahmed, 2003; Wiklund-Engblom *et al*., 2023) and therefore, the improvement of work practices (Donnelly and Morton, 2019), with far-reaching effects on employee health and well-being.

4.1 Strengths and limitations

The strength of this study was in the international cooperation, the participatory nature, the validated instrument and a longitudinal study. However, the study contains several limitations. The sample size of the study remained relatively small, although the response rate can be considered adequate (Grove *et al.*, 2013). Nevertheless, a higher proportion of participants might have been expected considering the nature of the participatory action research. The CBPAR approach in implementing the CBP-OWE intervention may have affected participant engagement; educators working with limited time resources may have had challenges to engage the amount this approach requires. The intervention lasted for a long time, and therefore it is difficult to verify which changes in the work communities were caused by the development actions defined in this action research and which were the organisation's own longer-term development actions. This study focused on the entire work community, and therefore analyses were carried out using tests of independent samples, not dependent samples which would have brought reliability to the results. In addition, a stronger research design using a control group and more sensitive measurements in relation to community-specific actions would have provided more reliable results on the effectiveness of the intervention. Without a control group, cause-and-effect relationships are difficult to distinguish. In addition, especially statistically significant results about individual items must be treated with caution. Although the results of this study cannot be directly generalized, the action research process, the CBP-OWE intervention and good practices can be utilised in the development of occupational well-being in education at a national and international levels.

5. Conclusions

The CBP-OWE intervention demonstrated positive improvement in occupational well-being particularly in those experiences concerning employer supported occupational well-being development actions. Community-based development action based on the specific needs of work communities utilizing an online learning environment appears to be a good approach to developing occupational well-being in education work communities. Participatory action research produces evidence-based information on the effectiveness of community-specific occupational well-being development actions. A longer period is needed to make visible the changes in occupational well-being in this type of work community intervention and therefore an important topic for future research. More research is needed that employs occupational well-being interventions for health care educators. Future research should also explore the usability, utility and acceptability of community-based occupational well-being interventions.

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Supplementary material
The supplementary material for this article can be found online.

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