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ORIGINAL ARTICLE

Actualization of evidence-based nursing in primary, specialized, and social care settings—A cross-sectional survey

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Abstract

Background: Basing practice on evidence is a widely acknowledged requirement for nursing, but shortcomings still exist. An increased understanding of the actualization of evidence-based nursing (EBN) across different nursing contexts is needed to develop better support for EBN and promote uniform high-quality nursing.

Aims: The aim of this study was to compare the actualization of EBN in different organizational contexts in Finland.

Methods: Data for this survey were collected in 2021. The actualization of EBN in primary, specialized, and social care organizations was evaluated with the Actualization of Evidence-Based Nursing instrument, nurses' version, which focuses on individual and organizational-level EBN support structures. Differences between (1) specialized and primary healthcare, and (2) different nursing practice settings were tested with Welch's two sample *t*-test, the Kruskal–Wallis rank sum test, and the Wilcoxon rank sum test.

Results: Based on nurse ($n = 1020$) evaluations, those working in specialized healthcare hold more positive attitudes toward EBN ($p = .021$) and evaluated their organization's methods for monitoring and evaluating nursing practices ($p = .004$) more positively than those working in primary healthcare. Regarding different nursing practice settings ($n = 1241$), the most positive results were observed within preventive healthcare where nurses evaluated their attitudes toward EBN, EBN competence, and personal evidence-based practices more positively compared to other nursing practice settings. The results were parallel regarding several organizational structures for EBN. Positive results were also observed within somatic units at university hospitals, and most negative results were within institutional care settings, health centers, and home care settings.

Linking Evidence to Action: There is a need for targeted support to strengthen EBN across different organizational contexts, with special attention to those contexts where nursing professionals with lower education levels work. Future research needs to focus on further analyzing the organizational differences and what can be learned, especially from preventive healthcare but also somatic units at university hospitals.

KEYWORDS
evidence-based practice, nursing, primary healthcare, social care, specialized healthcare

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BACKGROUND

Basing practice on evidence is a widely acknowledged requirement for nurses and other healthcare professionals. The aim of evidence-based practice (EBP) is to diminish unjustified variation in healthcare practices; promote patient safety; and promote the effectiveness, meaningfulness, feasibility, and appropriateness of practices (Jordan et al., 2019). EBP is also shown to be linked to higher nurse job satisfaction (Kim et al., 2016; Melnyk et al., 2021). Despite its significance, there is still variation and shortcomings in the implementation and actualization of EBP within the nursing context (Cleary-Holdforth et al., 2021; Holopainen et al., 2019; Perruchoud et al., 2021; Stokke et al., 2014).

The promotion of evidence-based nursing (EBN) requires consideration of individual and contextual factors. Individual skills (Perruchoud et al., 2021; Yoder et al., 2022; Yoo et al., 2019) and attitudes or beliefs in the value of EBN are linked to how EBN is perceived and implemented (Alqahtani et al., 2020; Cleary-Holdforth et al., 2021; Stokke et al., 2014; Yoo et al., 2019). Nurses have positive attitudes toward EBN (Alanen et al., 2009; Stokke et al., 2014), and they believe in its value, but they need more knowledge and skills to implement it (Alqahtani et al., 2020; Cleary-Holdforth et al., 2021; Perruchoud et al., 2021; Yoder et al., 2022). In addition, organizational culture and the supporting structures of the organization are associated with the implementation of EBN (Clarke et al., 2021; Cleary-Holdforth et al., 2021; Yoder et al., 2022). For example, it has been identified that nurses perceive lack of resources, educational support, and managerial and leadership support as barriers to EBN implementation (Yoder et al., 2022).

Nurses work in a wide range of nursing practice settings in social care (e.g., services targeted for elderly or disabled persons) and healthcare (e.g., preventive healthcare or specialized units within university hospitals), where the starting points for EBN actualization may differ. Previous research suggests that the implementation of EBN was more successful among nurses working in outpatient settings, for example, primary healthcare or municipality settings (Rudman et al., 2020; Skela-Savič & Lobe, 2021), and home care (Rudman et al., 2020). However, nursing practice settings and the prerequisites for EBN differ between countries. Also, research on the influence of the nursing practice setting is limited (Skela-Savič & Lobe, 2021).

In Finland, the legislation obliges healthcare, including nursing, to be evidence-based (FINLEX® 1326/2010). In addition, a nursing-specific research and development organization (the Nursing Research Foundation [NRF]) develops national support structures for EBN and produces evidence-based clinical guidelines for nursing. Still, the organizational support structures for EBN may vary between nursing practice settings. For example, in Finland, clinical nurse specialists working in healthcare organizations support the local implementation of EBN practices by providing education and consultation (Jokiniemi et al., 2015). However, most of the clinical nurse specialists work in specialized healthcare, which refers to services and treatment that are focused on specific medical conditions, diseases, or areas of expertise, e.g., cardiology, oncology, neurology, and orthopedics. Specialized healthcare is provided, especially in university hospitals that cooperate closely with universities (Finnish Nurses Association, 2016). In addition, the largest provider of specialized healthcare in Finland has prepared a health science research program and founded a nursing research center to support the implementation of EBN (Helsinki University Hospital, 2022). Thus, in primary healthcare, there may be more variation in what kind of supporting structures exist for EBN. Increasing understanding of individual and organizational EBN support structures, and thus EBN actualization across different nursing practice settings, can contribute to the realization of uniform high-quality nursing.

Purpose

The purpose of this study is to compare the actualization of EBN evaluated by nurses between different organizational contexts in Finland. Two study questions were established to address the purpose:

1. Are there differences in individual and organizational-level EBN support structures between primary and specialized healthcare?
2. Are there differences in individual and organizational-level EBN support structures between different nursing practice settings (within primary and specialized healthcare and social care contexts)?

METHODS

Design and target population

This sub-study is part of a larger nationwide survey that was conducted with a cross-sectional design. The target population consisted of nursing professionals working in different social care and healthcare organizations (both public and private) in Finland including (1) nurses working in clinical practice (i.e., practical nurses with vocational upper secondary qualification, and registered nurses, public health nurses, midwives, and paramedics with a bachelor's degree), (2) clinical nurse specialists, and (3) nurse leaders and managers. In this sub-study, the focus is on the evaluation of nurses working in clinical practice.

Data collection

The data were collected from September through October 2021 using an electronic questionnaire available both in Finnish and Swedish, which are the official languages in Finland. An invitation

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to participate in the study was shared with the target population via email using registers of nursing unions and associations. The contact information was not shared with the researchers, and the invitations were distributed via a contact person of the unions and associations. The invitation included information about the survey and a link to the questionnaire. An informed consent form was included on the first page of the questionnaire. The questionnaire included questions relating to the background of the participants and structured items from the Actualization of Evidence-Based Nursing instrument, nurses' version (ActEBN-nurses). All structured questions in the electronic questionnaire were compulsory. In addition, the questionnaire included open-ended questions about EBN development needs and feedback questions regarding national clinical guidelines and evidence tips published by the NRF (not reported in this article).

The ActEBN-nurses is an instrument developed by the NRF in cooperation with the University of Turku. The instrument is meant for evaluating the actualization of EBN in social and healthcare organizations, with a focus on EBN support structures. ActEBN-nurses was developed for this study as no prior instruments fit with this theoretical understanding of EBN. The development of the ActEBN-nurses instrument followed a strict development process; it was piloted prior to data collection. Several items from a previously developed instrument, the Evidence-Based Practice Process Assessment Scale (EBPPAS; Rubin & Parrish, 2010), were included in the ActEBN-nurses with the permission of the EBPPAS copyright holders. The EBPPAS instrument has been proven to have excellent internal consistency (Cronbach's alpha 0.94; Rubin & Parrish, 2010). The ActEBN-nurses consists of two scales: (1) individual-level support structures for EBN (includes three subscales) and (2) organizational-level support structures for EBN (includes seven subscales, Table 1). The subscales include various Likert-scaled items where the respondents are asked to evaluate the actualization of different EBN support structures within their organization on a scale between 1, *strongly disagree*, and 5, *strongly agree*.

Ethical issues and approval

Study approvals were obtained from the nursing unions and associations who distributed the questionnaire link to the study participants. The research group did not receive any personal information from the participants, and the questionnaire was answered anonymously. The study was conducted according to the Declaration of Helsinki (World Medical Association Declaration of Helsinki). Participation was voluntary. Participants were informed about the study and gave informed consent before filling out the questionnaire. It was carefully considered that in the reporting of the study no individual participants nor specific organizations could be recognized from the results. According to the Ethics Committee, a separate ethical procedure was not needed (Finnish National Board on Research Integrity, 2019).

Statistical analyses

Descriptive statistics and Pearson's Chi-squared test were used to describe the characteristics of the participants between different organizational contexts. The analyses were performed with IBM SPSS Statistics for Windows, Version 27.0 (Cronbach alpha's) or with R software (all other analyses).

The comparative analyses of the actualization of EBN were done in two phases to answer the two research questions: (1) actualization of EBN between primary and specialized healthcare and (2) actualization of EBN between different nursing practice settings. Those participants that reported working either in primary or specialized healthcare were included in the first analysis. Differences between these contexts were tested using a Welch two sample *t*-test, which is an adaptation of Student's *t*-test. The Welch two sample *t*-test was chosen since the variances of the populations are not assumed to be equal in the Welch test. The second analysis focused on a more finely divided exploration, comparing the different nursing practice settings. In this analysis, only those participants that reported one setting as their working environment were included. Participants could choose multiple settings as their working environment, and this alignment was done to diminish overlap. Differences between different nursing practice settings were done using a Kruskal–Wallis rank sum test. Pairwise comparisons were conducted with a Wilcoxon rank sum test with correction for multiple testing.

RESULTS

Participants

In total, 1289 nurses working in clinical practice participated in the survey. Of them, 1020 were working either in specialized or primary healthcare and were included in the first analysis (comparison between specialized and primary healthcare). The excluded participants worked either in social care or in a combination of contexts. The characteristics of the participants and differences between participants working in specialized and primary healthcare are presented in Table 2.

In the second analysis, the actualization of EBN between different nursing practice settings was analyzed based on the evaluations of nurses who reported only one setting as their working environment. The characteristics of these participants ($n=1241$) and differences between different nursing practice settings are presented in Table 3.

Actualization of EBN between specialized and primary healthcare

Individual-level support structures for EBN

Nurses working in specialized healthcare ($n=517$) held more positive attitudes toward EBN than nurses ($n=503$) working in primary

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TABLE 1 The structure of the ActEBN-nurses instrument.

Scales	Subscales	Number of items and possible sum range[a]	Cronbach's alphas ($n = 1289$)
Individual-level support structures for EBN	Attitudes towards EBN (self-evaluation)	14 items (all 14 from EBPPAS), sum range 14–70	0.90
	EBN competence (self-evaluation)	Eight items (5 from EBPPAS), sum range 8–40	0.85
	Own EBPs (self-evaluation)	Ten items, sum range 10–50	0.85
Organizational-level support structures for EBN	Methods for monitoring and evaluating the organization's current nursing practices	Seven items, sum range 7–28[b]	0.88
	Methods in the organization to disseminate evidence	Two items, sum range 2–10	0.88
	Organization's resources to develop and implement consistent EBN practices	Six items (2 from EBPPAS), sum range 6–30	0.81
	Methods to ensure the organization's nursing professionals' EBN competence	Four items, sum range 4–20	0.78
	Organizational culture toward EBN	Six items, sum range 6–30	0.86
	Support from organization's nursing managers for EBN	Eight items, sum range 8–40	0.93
	Evidence base of nursing practices and instructions	Four items, sum range 4–20	0.91

Abbreviations: ActEBN-nurses, Actualization of Evidence-Based Nursing instrument, nurses' version; EBN, evidence-based nursing; EBP, evidence-based practice; EBPPAS, Evidence-Based Practice Process Assessment Scale (Rubin & Parrish, 2010).

[a]Higher sum value represents more positive evaluation.

[b]Due to a technical error in the electronic questionnaire, the Likert scale in this subscale was deviant in the questionnaire used in this study (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = strongly agree).

healthcare (mean 55.0 [*SD* 7.7] vs. mean 53.8 [*SD* 8.0], respectively, $p = .021$; see Table 4).

Organizational-level support structures for EBN

Nurses working in specialized healthcare evaluated their organization's methods for monitoring and evaluating nursing practices in a more positive way than those working in primary healthcare (mean 21.7 [*SD* 4.9] vs. mean 20.7 [*SD* 5.3], respectively, $p = .004$; Table 4).

Actualization of EBN between different nursing practice settings

Individual-level support structures for EBN

There were statistically significant differences in the nurses' ($n = 1241$) attitudes toward EBN ($p < .001$, $\chi^2 = 57.84$, df = 9), EBN competence ($p < .001$, $\chi^2 = 30.03$, df = 9), and nurses' EBPs ($p < .001$, $\chi^2 = 30.27$, df = 9) between different nursing practice settings (Table 5).

In the pairwise analysis, nurses working in preventive healthcare held more positive attitudes toward EBN compared to nurses in psychiatric units in university hospitals ($p = .029$) or other hospitals ($p = .038$), institutional care settings ($p < .001$), and home care or home hospitals ($p < .001$). Attitudes among nurses working in institutional care settings were more negative compared to those in nurses in somatic units in university hospitals ($p < .001$) or other hospitals ($p < .001$), psychiatric units in other than university hospitals ($p = .012$), preventive healthcare ($p < .001$), health centers ($p < .001$), and pre-hospital emergency care ($p = .002$) and in other nursing practice settings ($p = .012$). The results were also more negative among nurses working in home care or home hospitals, with statistically significant differences compared to nurses in somatic units in university hospitals ($p < .001$) or other hospitals ($p < .001$), preventive healthcare ($p < .001$), health centers ($p = .002$), and pre-hospital emergency care ($p = .026$).

Nurses working in preventive healthcare rated their EBN competence more positively than nurses in institutional care settings ($p = .022$). In terms of the nurses' own EBPs, the evaluations were more positive among nurses working in preventive healthcare compared to nurses in somatic units in other hospitals ($p = .001$), health centers ($p = .040$), institutional care settings ($p = .0124$), and home care or home hospitals ($p = .003$).

Organizational-level support structures for EBN

There were statistically significant differences in the nurses' ($n = 1241$) perceptions of monitoring and evaluation of nursing practices ($p < .001$, $\chi^2 = 42.57$, df = 9), evidence dissemination ($p < .001$, $\chi^2 = 51.73$, df = 9), development and implementation

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TABLE 2 Characteristics of the participants ($n = 1020$) between specialized and primary healthcare.

	Specialized healthcare ($n = 517$)	Primary healthcare ($n = 503$)	Difference (p value)[a]
Gender, *n* (%)			
Female	444 (85.9)	484 (96.2)	<.001
Male	69 (13.4)	18 (3.6)	
Other	≤5	≤5	
Highest education, *n* (%)			
Vocational upper secondary education	14 (2.7)	90 (17.9)	<.001
Post-secondary education	113 (21.9)	88 (17.5)	
Bachelor's degree at a university of applied sciences	302 (58.4)	246 (48.9)	
Master's degree at a university of applied sciences	50 (9.7)	47 (9.3)	
Bachelor's degree at a (scientific) university	17 (3.3)	10 (2.0)	
Master's degree at a (scientific) university	17 (3.3)	11 (2.2)	
Licentiate or doctoral degree at a (scientific) university	≤5	≤5	
Other education	≤5	9 (1.8)	
Current position, *n* (%)			
Practical nurse	14 (2.7)	98 (19.5)	<.001
Registered nurse	436 (84.3)	284 (56.5)	
Public health nurse	≤5	110 (21.9)	
Midwife	38 (7.4)	≤5	
Paramedic	19 (3.7)	≤5	
Other nursing position	6 (1.2)	≤5	
Organizer of the services, *n* (%)			
Public	498 (96.3)	446 (88.7)	<.001
Private	19 (3.7)	57 (11.3)	
Age			
Mean (*SD*)	44.51 (11.0)	45.88 (10.8)	
Under 35 years, *n* (%)	123 (23.8)	97 (19.3)	.04
35–50 years, *n* (%)	215 (41.6)	196 (39.0)	
Over 50 years, *n* (%)	179 (34.6)	210 (41.8)	
Work experience in current position			
Mean (*SD*)	18.04 (10.8)	17.66 (10.6)	
Under 10 years, *n* (%)	145 (28.0)	128 (25.4)	.13
10–20 years, *n* (%)	163 (31.5)	189 (37.6)	
Over 20 years, *n* (%)	209 (40.4)	186 (37.0)	

[a]Calculated with Pearson's Chi-squared test.

of consistent EBN practices ($p < .001$, $\chi^2 = 28.29$, df = 9), ensuring nursing professionals' EBN competence ($p < .001$, $\chi^2 = 38.64$, df = 9), organizational culture toward EBN ($p = .001$, $\chi^2 = 28.00$, df = 9), support from nursing managers for EBN ($p = .008$, $\chi^2 = 22.45$, df = 9), and evidence base of nursing practices and instructions ($p = .001$, $\chi^2 = 27.36$, df = 9) between different nursing practice settings (Table 5).

Nurses working in health centers rated the organization's methods for monitoring and evaluating current nursing practices more negatively than nurses working in somatic units in university hospitals ($p < .001$) or other hospitals ($p = .049$) and institutional care settings ($p = .049$). The results were also more negative among nurses working in psychiatric units in other than university hospitals compared to nurses working in somatic units in university hospitals ($p = .016$). In terms of methods for evidence dissemination within the organization, the evaluations were more negative among nurses working in somatic units in other than university hospitals and health centers compared to nurses working in somatic units in university hospitals ($p = .049$ and $p = .001$, respectively), preventive healthcare ($p = .001$ and $p < .001$, respectively), and institutional care settings ($p = .021$ and $p < .001$, respectively). The nurses' evaluations were also more negative among nurses in psychiatric units in other than university hospitals ($p = .021$) and home care or home hospitals ($p = .025$) compared to nurses working in preventive healthcare.

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TABLE 3 Characteristics of the participants ($n = 1241$) between different nursing practice settings.

	University hospital, somatic[a] ($n = 221$)	University hospital, psychiatric[b] ($n = 39$)	Other hospital, somatic[a] ($n = 216$)	Other hospital, psychiatric[b] ($n = 58$)
Gender, *n* (%)				
Female	198 (89.6)	27 (69.2)	198 (91.7)	47 (81.0)
Male	21 (9.5)	10 (25.6)	18 (8.3)	11 (19.0)
Other	≤5	≤5	0 (0)	0 (0)
Highest education, *n* (%)				
Vocational upper secondary education	7 (3.2)	≤5	9 (4.2)	≤5
Post-secondary education	53 (24.0)	9 (23.1)	51 (23.6)	10 (17.2)
Bachelor's degree at a university of applied sciences	120 (54.3)	23 (59.0)	122 (56.5)	36 (62.1)
Master's degree at a university of applied sciences	21 (9.5)	≤5	22 (10.2)	6 (10.3)
Bachelor's degree at a (scientific) university	11 (5.0)	≤5	6 (2.8)	≤5
Master's degree at a (scientific) university	7 (3.2)	≤5	≤5	≤5
Licentiate or doctoral degree at a (scientific) university	0 (0)	0 (0)	0 (0)	≤5
Other education	≤5	0 (0)	≤5	0 (0)
Current position, *n* (%)				
Practical nurse	6 (2.7)	≤5	9 (4.2)	≤5
Registered nurse	183 (82.8)	38 (97.4)	190 (88.0)	56 (96.6)
Public health nurse	≤5	0 (0)	0 (0)	0 (0)
Midwife	25 (11.3)	0 (0)	15 (6.9)	0 (0)
Paramedic	0 (0)	0 (0)	0 (0)	0 (0)
Other nursing position	≤5	0 (0)	≤5	0 (0)
Organizer of the services, *n* (%)				
Public	219 (99.1)	37 (94.9)	210 (97.2)	58 (100.0)
Private	≤5	≤5	6 (2.8)	0 (0)
Other	0 (0)	0 (0)	0 (0)	0 (0)
Age				
Mean (*SD*)	44.2 (11.4)	43.7 (11.4)	46.0 (10.8)	45.3 (9.6)
Under 35 years, *n* (%)	61 (27.6)	10 (25.6)	39 (18.1)	9 (15.5)
35–50 years, *n* (%)	82 (37.1)	16 (41.0)	95 (44.0)	26 (44.8)
Over 50 years, *n* (%)	78 (35.3)	13 (33.3)	82 (38.0)	23 (39.7)
Work experience in current position				
Mean (*SD*)	18.1 (10.9)	15.3 (9.8)	19.8 (10.9)	17.3 (10.3)
Under 10 years, *n* (%)	66 (29.9)	13 (33.3)	49 (22.7)	16 (27.6)
10–20 years, *n* (%)	64 (29.0)	13 (33.3)	67 (31.0)	18 (31.0)
Over 20 years, *n* (%)	91 (41.2)	13 (33.3)	100 (46.3)	24 (41.4)

[a]A specialized unit dedicated to the diagnosis and treatment of physical health issues and illnesses, e.g., infections or cardiovascular diseases.

[b]A specialized unit dedicated to the diagnosis and treatment of mental health disorders and psychiatric conditions.

[c]Including both the health center in-patient wards and outpatient clinics.

[d]For example, child health clinics, maternity clinics, and school healthcare.

[e]Including emergency, social care services, adult day care centers, laboratory, and indeterminate hospital.

The analysis of resources for the development and implementation of consistent EBP revealed better results among institutional care settings compared to health centers ($p = .040$). In terms of methods for ensuring nursing professionals' EBN competence, the evaluations were more positive among nurses working in somatic units in university hospitals compared to nurses working in health centers ($p = .001$). Nurses working in preventive healthcare rated the organizational culture toward EBN more positively than nurses

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Health center[c] (*n* = 218)	Preventive healthcare[d] (*n* = 95)	Institutional care setting (*n* = 205)	Home care or home hospital (*n* = 116)	Pre-hospital emergency care (*n* = 32)	Other[e] (*n* = 41)
212 (97.2)	95 (100.0)	195 (95.1)	110 (94.8)	15 (46.9)	40 (97.6)
≤5	0 (0)	10 (4.9)	6 (5.2)	17 (53.1)	≤5
≤5	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
12 (5.5)	0 (0)	120 (58.5)	45 (38.8)	0 (0)	≤5
48 (22.0)	17 (17.9)	16 (7.8)	14 (12.1)	0 (0)	7 (17.1)
118 (54.1)	61 (64.2)	55 (26.8)	42 (36.2)	24 (75.0)	23 (56.1)
25 (11.5)	12 (12.6)	6 (2.9)	7 (6.0)	6 (18.8)	≤5
≤5	≤5	0 (0)	≤5	≤5	≤5
6 (2.8)	≤5	≤5	≤5	≤5	≤5
≤5	0 (0)	≤5	≤5	0 (0)	0 (0)
≤5	0 (0)	≤5	≤5	0 (0)	≤5
12 (5.5)	0 (0)	129 (62.9)	52 (44.8)	0 (0)	≤5
170 (78.0)	7 (7.4)	71 (34.6)	59 (50.9)	≤5	34 (82.9)
35 (16.1)	88 (92.6)	≤5	≤5	0 (0)	≤5
0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
0 (0)	0 (0)	0 (0)	0 (0)	27 (84.4)	0 (0)
≤5	0 (0)	≤5	0 (0)	0 (0)	≤5
208 (95.4)	80 (84.2)	132 (64.4)	110 (94.8)	27 (84.4)	26 (63.4)
10 (4.6)	11 (11.6)	71 (34.6)	6 (5.2)	≤5	15 (36.6)
0 (0)	≤5	≤5	0 (0)	0 (0)	0 (0)
46.3 (10.6)	42.5 (10.4)	48.7 (10.1)	47.3 (9.9)	37.9 (8.5)	47.8 (10.8)
35 (16.1)	26 (27.4)	21 (10.2)	18 (15.5)	15 (46.9)	7 (17.1)
91 (41.7)	40 (42.1)	81 (39.5)	50 (43.1)	13 (40.6)	13 (31.7)
92 (42.2)	29 (30.5)	103 (50.2)	48 (41.4)	≤5	21 (51.2)
18.7 (10.7)	16.4 (10.0)	17.2 (10.9)	17.3 (10.3)	11.9 (7.2)	19.6 (11.4)
50 (22.9)	24 (25.3)	58 (28.4)	30 (25.9)	15 (46.9)	7 (17.1)
78 (35.8)	44 (46.3)	75 (36.8)	45 (38.8)	12 (37.5)	17 (41.5)
90 (41.3)	27 (28.4)	71 (34.8)	41 (35.3)	≤5	17 (41.5)

in somatic units in university hospitals ($p = .015$) or other hospitals ($p = .004$), psychiatric units in other hospitals ($p = .005$), health centers ($p < .001$), institutional care settings ($p = .002$), and home care or home hospitals ($p = .005$). In terms of support received from nursing managers for EBN, the evaluations were also more positive among nurses working in preventive healthcare compared to nurses in somatic units in other than university hospitals ($p = .049$) and health centers ($p = .002$).

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Nurses working in preventive healthcare considered the evidence base of nursing practices and instructions more positively compared to nurses working in somatic units in university hospitals ($p = .003$) or other hospitals ($p < .001$), psychiatric units in university hospitals ($p = .006$) or other hospitals ($p < .001$), health centers ($p < .001$), institutional care settings ($p < .001$), home care or home hospitals ($p < .001$), and other nursing practice settings ($p = .003$). In addition, nurses working in pre-hospital emergency care rated the evidence base of nursing practices and instructions more positively than nurses working in somatic ($p = .008$) or psychiatric units in other than university hospitals ($p = .005$), health centers ($p = .004$), institutional care settings ($p < .001$), and home care or home hospitals ($p < .001$). Comparing nurses working in somatic units in university hospitals with other nursing settings showed favorable results, relative to nurses working in institutional care settings ($p < .001$), and home care or home hospitals ($p < .001$).

TABLE 4 Actualization of EBN in specialized and primary healthcare ($n = 1020$).

	Specialized healthcare ($n = 517$)	Primary healthcare ($n = 503$)	*t*	df	*p* value
Individual-level EBN support factors, mean (*SD*)					
Attitudes toward EBN	55.0 (7.7)	53.8 (8.0)	−2.32	1013.9	.021
EBN competence	31.2 (4.0)	31.1 (3.8)	−0.52	1017.1	.602
Own EBPs	37.6 (5.8)	37.9 (5.3)	0.88	1013	.377
Organizational-level EBN support factors, mean (*SD*)					
Monitoring and evaluating current nursing practices	21.7 (4.9)	20.7 (5.3)	−2.89	1006.5	.004
Evidence dissemination	5.5 (2.3)	5.4 (2.3)	−1.00	1016.6	.320
Development and implementation of consistent EBN practices	16.4 (5.2)	16.4 (4.9)	0.06	1015.2	.954
Ensuring nursing professionals' EBN competence	11.8 (3.5)	11.4 (3.5)	−1.89	1016.2	.059
Organizational culture toward EBN	18.0 (4.9)	17.9 (4.8)	−0.14	1017.9	.893
Support from nursing managers for EBN	21.5 (7.3)	21.8 (7.5)	0.63	1015.5	.529
Evidence base of nursing practices and instructions	13.5 (3.3)	13.2 (3.2)	−1.58	1017.8	.114

Abbreviations: EBN, evidence-based nursing; *t*, Welch two sample *t*-test.

TABLE 5 Actualization of EBN in different nursing settings ($n = 1241$).

	University hospital, somatic ($n = 221$)	University hospital, psychiatric ($n = 39$)	Other hospital, somatic ($n = 216$)	Other hospital, psychiatric ($n = 58$)
Individual-level EBN support factors, mean (*SD*)				
Attitudes towards EBN	55.5 (7.2)	51.8 (10.4)	55.3 (7.8)	53.3 (7.8)
EBN competence	31.4 (3.9)	32.0 (3.7)	31.0 (4.0)	31.3 (3.3)
Own EBPs	37.9 (5.9)	37.8 (6.1)	37.1 (5.8)	37.8 (4.9)
Organizational-level EBN support factors, mean (*SD*)				
Monitoring and assessing current nursing practices	22.4 (4.3)	20.9 (4.8)	21.6 (5.2)	20.1 (5.0)
Evidence dissemination	5.8 (2.3)	5.7 (2.2)	5.3 (2.3)	5.1 (2.4)
Development and implementation of consistent EBN practices	16.1 (5.3)	18.2 (5.2)	16.0 (5.0)	16.6 (4.8)
Ensuring nursing professionals' EBN competence	12.3 (3.3)	11.7 (3.7)	11.4 (3.6)	11.8 (3.1)
Organizational culture towards EBN	18.3 (4.5)	18.8 (5.1)	17.8 (5.1)	17.3 (4.8)
Support from nursing managers for EBN	21.8 (7.3)	21.6 (8.2)	21.5 (7.5)	22.2 (7.4)
Evidence base of nursing practices and instructions	13.8 (3.0)	13.4 (3.4)	13.2 (3.3)	12.8 (3.1)

[a]Including both health centers in-patient wards and outpatient clinics.

[b]For example, child health clinics, maternity clinics, and school healthcare.

[c]Including emergency, social care services, adult day care centers, laboratory, and indeterminate hospital.

[d]Kruskal–Wallis rank sum test.

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DISCUSSION

This study describes differences in the actualization of EBN, with a focus on EBN support structures between primary and specialized healthcare and different nursing practice settings in Finland. The results contribute to filling the previously recognized gaps in the understanding of the influence of contexts in EBN (Skela-Savič & Lobe, 2021). The results revealed that the nurses' attitudes toward EBN and their perceptions of organizational-level monitoring and assessment of current nursing practices were more positive among nurses working in specialized than in primary healthcare. The direction of the differences differed from the results gathered in other countries (Rudman et al., 2020; Skela-Savič & Lobe, 2021), but were in line with the expected conditions in Finland (Finnish Nurses Association, 2016).

However, the differences between specialized and primary healthcare were quite marginal (1–2 point differences), and their clinical significance appeared to be limited. The differences may be explained by the contrasts recognized in the analysis of distinct nursing practice settings. Preventive healthcare, which is part of primary healthcare, stood out most positively in the actualization of EBN, both from the perspective of individual (attitudes, competence, and personal practices) and organizational EBN support structures, such as organizations' methods for evidence dissemination, organizational culture toward EBN, support from nursing managers, and evidence base of nursing practices and instructions. Thus, since these EBN support structures are quite well-actualized in preventive healthcare, it may improve the rating of the actualization of EBN in primary healthcare as a whole.

Regarding the other nursing practice settings, nurses working in somatic units at university hospitals generally rated the actualization of EBN positively, while nurses in institutional care settings, health centers, and home care settings rated more negatively. The share of the elderly population and shortages in the global nursing workforce is increasing (United Nations, 2020; World Health Organization, 2020). Investing in EBN is known to strengthen the attraction and retention in the nursing profession, and this highlights the need for investing in these contexts (Kim et al., 2016; Melnyk et al., 2021). However, there were some exceptions between different support structures for EBN. For example, the nurses in institutional care settings rated some organizational-level support structures positively (e.g., resources for the development and implementation of consistent EBP) but rated the individual-level support structures in a more negative way.

The positive results from preventive healthcare support those of previous studies (Furuki et al., 2023; Vaajoki et al., 2023), which highlight the role of nursing education in EBN actualization and the role of organizational culture and support from nursing managers (Furuki et al., 2023). In Finland, nurses working in preventive healthcare (e.g., in maternity and child health clinics or school health services) are mostly public health nurses who have a bachelor's degree (240 ECTS credits, 4 years full-time education; FINLEX® 1129/2014) compared to, for example, those working in institutional care settings and home care which employs a

Health center[a] ($n=218$)	Preventive healthcare[b] ($n=95$)	Institutional care setting ($n=205$)	Home care or home hospital ($n=116$)	Pre-hospital emergency care ($n=32$)	Other[c] ($n=41$)	χ^{2}[d]	df	p value[d]
54.8 (7.4)	56.8 (7.5)	49.8 (8.8)	51.2 (8.2)	55.8 (8.2)	54.4 (8.3)	57.84	9	<.001
31.1 (4.0)	32.1 (3.4)	30.7 (3.8)	30.9 (4.2)	31.9 (3.6)	32.1 (3.7)	30.03	9	<.001
38.0 (5.7)	39.7 (5.3)	37.7 (5.2)	37.2 (5.3)	39.9 (5.0)	39.1 (4.6)	30.27	9	<.001
20.1 (5.5)	21.5 (5.0)	21.6 (5.1)	21.3 (5.4)	19.1 (6.9)	21.1 (4.5)	42.57	9	<.001
5.0 (2.3)	6.4 (2.4)	5.9 (2.2)	5.5 (2.2)	5.8 (2.6)	5.8 (2.3)	51.73	9	<.001
15.7 (4.8)	17.4 (5.4)	17.4 (4.9)	16.6 (5.1)	18.3 (5.9)	17.7 (5.1)	28.29	9	<.001
10.8 (3.5)	12.2 (3.2)	11.7 (3.3)	11.3 (3.7)	11.3 (4.0)	11.2 (3.8)	38.64	9	<.001
17.3 (4.7)	20.1 (4.8)	17.6 (4.7)	17.8 (4.9)	18.0 (6.1)	18.5 (4.9)	28.00	9	.001
20.5 (7.1)	24.4 (7.5)	22.4 (7.4)	21.6 (7.7)	21.1 (7.8)	21.9 (6.5)	22.45	9	.008
13.0 (3.3)	15.2 (2.5)	12.6 (3.1)	12.3 (3.1)	15.1 (3.5)	13.5 (3.3)	27.36	9	.001

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large number of practical nurses with a vocational upper secondary qualification (180 competence points, 2–3-years full-time education; FINLEX® 531/2017). We also know that practical nurses rarely access current research evidence in their workplaces to guide their practice (Phillips & Neumeier, 2018). This emphasizes the need for targeted and tailored support and further EBN training in these settings, in particular (Perruchoud et al., 2021; Phillips & Neumeier, 2018).

Implications for further research

The recognized differences between different contexts provide new knowledge that is needed to promote uniform high-quality and EBN. Future research is still needed to further explore these differences and factors explaining, for example, the positive results observed in preventive healthcare. Subsequent studies are needed to deepen the understanding of the influence of different contextual factors and to develop targeted interventions to support EBN actualization. The promotion of EBN across different contexts has been demonstrated to have an eventual impact on the quality of nursing care, social and healthcare costs, nurse job satisfaction, and the attractiveness of the nursing profession (Kim et al., 2016; Melnyk et al., 2021).

Strengths and limitations

The strengths of this study included the rather large sample ($n = 1289$) that represented nurses in all parts of Finland. However, the number of respondents was low compared to the number of nursing professionals in Finland, which may have influenced representativeness of the data. The data were collected 1.5 years after the onset of the COVID-19 pandemic, and the resulting increased nursing workload may have influenced the number of respondents.

The study marked the first use of the ActEBN-nurses instrument. The Cronbach's alphas for different ActEBN-nurses subscales varied between 0.78 and 0.93, indicating moderate-to-excellent internal consistency. The other psychometric properties of the instrument are currently being analyzed. The theoretical basis of the instrument highlights the role of organizational support structures as prerequisites of EBN actualization (Jordan et al., 2019; Jylhä et al., 2017). Thus, EBN is not considered as an individual nurse's responsibility, even though nurses' attitudes, competences, and personal actions also have a central role. EBN is rather a requirement for organizations to enable and ensure development and the implementation of consistent EBP with necessary support structures (Jylhä et al., 2017).

The data and results are valuable to the current state of nursing considering the national and global nursing shortages. It is important to understand the factors that might be associated with nurses' better working conditions and opportunities to base their own activities on evidence (Kim et al., 2016; Melnyk et al., 2021). Also, this study offers a rare insight into examining the differences in the actualization of EBN between different nursing practice settings. The results illuminate the nursing practice settings which need to invest more in EBN. Furthermore, the timing of the data collection was valuable from the national perspective, as it was collected just before Finland's national social and healthcare reform.

Linking evidence to action

- Development of EBN support structures is especially needed in institutional care settings, health centers, and home care settings to ensure uniform high-quality nursing across different contexts.
- There is a need for targeted support and further EBN training for nursing professionals with lower education levels in particular.
- Further analysis is needed to recognize the causes of organizational differences and what can be learned from preventive healthcare in particular, as well as somatic units at university hospitals.

CONCLUSION

There are some differences in the actualization of EBN between specialized and primary healthcare in Finland, favoring the specialized healthcare context. However, the differences were rather marginal, and the clinical significance appeared to be limited. Larger differences were observed between different nursing practice settings, with the most positive results regarding EBN actualization in preventive healthcare and the least favorable mainly in institutional care settings, health centers, and home care settings. Further research is needed to explore these differences and the factors explaining them.

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CONFLICT OF INTEREST STATEMENT

The authors have no known financial or personal conflicts of interest.

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