

## ORIGINAL ARTICLE

# Beliefs and implementation of evidence-based practice among nurses in the nursing homes of a Swiss canton: An observational cross-sectional study

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## Abstract

**Aims and objectives:** Examine beliefs about EBP and its level of implementation among nurses working in nursing homes in a bilingual canton of Switzerland and explore associations between these aspects and nurses' sociodemographic and professional characteristics.

**Background:** Although evidence-based practice (EBP) is recognised as an effective strategy for improving the quality and safety of care, little is known about its use in nursing homes. Nurses' beliefs about EBP and their implementation of it in Switzerland's nursing homes have never been explored.

**Design:** An observational cross-sectional study.

**Methods:** Beliefs about and implementation of EBP were evaluated using validated French- and German-language versions of the EBP Beliefs Scale and the EBP Implementation Scale, developed by Melnyk and Fineout-Overholt (Melnyk, Fineout-Overholt, & Mays, 2008, *Worldviews on Evidence-Based Nursing*, 5, 208). The STROBE checklist for cross-sectional studies was used in reporting this study.

**Results:** The participation rate was 40.6% ( $N = 194$ ). Most participants stated that they had some knowledge of EBP and held favourable beliefs about it. Nevertheless, 37.1% of participants found the concept complicated and 36.1% found it time-consuming. Participants were more likely to implement stages in the EBP process linked to direct clinical practice rather than those which required scientific knowledge and skills.

**Conclusion:** Most participants had favourable beliefs about EBP, but the level of implementation of EBP among nurses in their daily clinical practice was sub-optimal.

**Relevance to clinical practice:** A greater emphasis should be put on fostering the use of EBP among nurses working in nursing homes. This could be achieved via training and the development of individual, institutional and contextual strategies promoting the integration of EBP in clinical settings.

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## KEYWORDS

beliefs, evidence-based practice, implementation, long-term care, nursing, residential homes

## What does this paper contribute to the wider global community?

- After undertaking an exhaustive search of the literature, we conclude that this is the first article to describe research into beliefs about EBP and implementation of the concept by nurses working in nursing homes in a Francophone canton in Switzerland. It may also be the first article internationally to have used the EBP-B and EBP-I scales in a nursing home setting.
- Our findings reveal that despite their knowledge about EBP and their favourable beliefs about the concept, nurses working in nursing homes rarely implement it in their daily clinical practice.
- Because EBP plays such an important role in maintaining the quality of healthcare services, the present findings reinforce the need to promote this concept through education and training and the development of strategies to encourage its implementation in the nursing home setting.

## 1 | INTRODUCTION

Evidence-based practice (EBP) is an essential approach when attempting to resolve problems involving clinical decision-making. It is characterised by the conscious, explicit and judicious integration of the best scientific knowledge, data, and information available, healthcare professionals' expertise, the clinical context, and the patient's values and preferences (Melnyk & Fineout-Overholt, 2019; Sackett et al., 1996). The goal of EBP is to promote effective interventions which have a positive impact on patients' state of health and on the care environment (Melnyk & Fineout-Overholt, 2019). EBP is a key nursing approach, linked to better care outcomes, higher quality, better safety, healthcare cost reductions, shorter hospital lengths of stay, and greater feelings of job satisfaction and engagement among healthcare staff (Kim et al., 2017; Melnyk et al., 2012).

Despite the numerous advantages of EBP related in about 17 years worth of literature, there nevertheless remains a significant gap between the publications about EBP and its implementation in healthcare institutions (van Achterberg et al., 2008; Melnyk & Fineout-Overholt, 2019). Clinical decision-making is more influenced by nursing staff's professional experience or established knowledge (van Achterberg et al., 2008).

Evidence-based practice now unquestionably represents a solution to the increasing complexity of long-term care and implementing it improves the quality of care, safety and quality of life of nursing home residents (Diehl et al., 2016; Hägglund & Olai, 2016; Specht, 2013), yet its use in such settings remains embryonic (Jablonski & Ersek, 2009; Specht, 2013). There are numerous individual, contextual and research questions to be examined about the use of EBP in nursing homes: negative beliefs about EBP (Ahlin et al., 2014; Kaasalainen et al., 2010); the conviction that the care given is already amongst the best possible (Janes et al., 2009); poor knowledge of EBP (Chang et al., 2013; Kaasalainen et al., 2010); little experience of implementing EBP (Chang et al., 2013); nurses

being used to more traditional, established practices (Chang et al., 2013; Janes et al., 2009); difficulties in critically analysing scientific research studies and interpreting statistical findings (Chang et al., 2010, 2013); limited access to scientific databases (Chang et al., 2010); and financial limitations and time constraints (Chang et al., 2010; Kaasalainen et al., 2010).

Few studies to date have investigated beliefs about EBP in nursing homes and its implementation in those settings (Diehl et al., 2016; Slaughter et al., 2017; Specht, 2013). According to Melnyk and Fineout-Overholt, beliefs refer to the perceptions that healthcare professionals have about EBP, whereas implementation represents the operationalisation of the process of EBP in daily clinical practice (Melnyk & Fineout-Overholt, 2019). The few findings in nursing home settings indicate that the nurses working there had a variety of beliefs about EBP, ranging from the positive (Chang et al., 2010, 2013; Demarre et al., 2012; Kaasalainen et al., 2010) to the negative (Ahlin et al., 2014; Janes et al., 2009; Nilsen et al., 2018). Whatever nurses believe about it, the use of EBP in nursing homes remains sub-optimal (Jablonski & Ersek, 2009; Specht, 2013).

There is a need for more research on beliefs about EBP and its implementation in nursing home settings, both to encourage its systematic use and to ensure safe, high-quality care. After undertaking an exhaustive search of the literature, no previous studies appear to have been conducted in Switzerland to describe nurses' beliefs and implementation of EBP in nursing homes, and no studies at the international level appear to have used the EBP-B and EBP-I scales in nursing home settings. This study's primary objectives were to describe the beliefs about EBP held by nurses working in nursing homes in a French-speaking canton of Switzerland and to discover the degree to which they implemented the approach. Its secondary objectives were to explore the existence of associations between nurses' beliefs and the degree of implementation of EBP and their sociodemographic and professional characteristics. Our research questions were as follows: (1) Are nurses working in the nursing homes of a French-speaking canton of Switzerland familiar with the

concept of EBP? (2) What are their beliefs about EBP and to what degree do they implement it? (3) Are there any associations between nurses' beliefs about EBP and the degree to which they implement it and their sociodemographic and professional characteristics?

## 1.1 | Theoretical framework

The present study was based on the theoretical framework developed by Melnyk and Fineout-Overholt in 1999, entitled 'Advancing Research and Clinical Practice through close Collaboration (ARCC)' (Melnyk, 2012; Melnyk & Fineout-Overholt, 2019). This framework aims to help guide key systems and actors towards the successful and sustainable implementation of EBP. It is split into three main stages: the evaluation of an institution's organisational culture with regard to EBP; the identification of the principal facilitators of and obstacles to the implementation of EBP; and the integration of mentors in EBP within the organisation who will be able to develop the strategies to initiate, improve, evaluate and perpetuate the implementation of EBP through the reinforcement of skills and positive beliefs about the approach. The framework's main working hypothesis is that favourable beliefs about EBP are associated with better implementation of the approach. This, in turn, leads to positive effects on healthcare staff, patients, care institutions and the healthcare system overall (Melnyk, 2012; Melnyk & Fineout-Overholt, 2019). The present study examines the second stage of this theoretical framework and used two instruments developed by the framework's authors to do so: the EBP Beliefs Scale (EBP-B) and the EBP Implementation Scale (EBP-I) (Melnyk et al., 2008).

## 2 | METHODS AND MATERIALS

### 2.1 | Study design and setting

This observational cross-sectional study was carried out among the nurses working in the 51 nursing homes of a bilingual canton of Switzerland. The STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) checklist was used in reporting this study (see Supplementary File 1).

### 2.2 | Participants

The eligible population was estimated to be 478 nurses. Nurses on temporary contracts, who had taken up their current position <3 months previously, and student nurses were excluded.

### 2.3 | Data collection and ethical considerations

Data collection took place between September 2019–March 2020. Paper versions of our sociodemographic and professional

questionnaire, together with the EBP-B and the EBP-I, were posted to 51 head nurses, either in French or German, depending on the nursing home's linguistic region. Head nurses ensured document distribution to eligible staff, who then self-administered the questionnaire and scales, thus becoming participants. Head nurses ensured that finished surveys were returned to the investigators in the stamped, addressed envelopes provided. To answer potential queries and encourage participation, head nurses received telephone and email reminders on three occasions: 4 and 8 weeks after the documents were originally sent out and 2 weeks before the end of the data collection period. The Cantonal Committee on Ethics in Research Involving Humans had previously approved the study, on 15 March 2019.

### 2.4 | Instruments: EBP Beliefs and EBP Implementation Scales

Beliefs about EBP and its implementation were measured using validated French- and German-language versions of the EBP-B and the EBP-I (Kerwien-Jacquier et al., 2020; Verloo et al., 2017a), based on the original English versions developed by Melnyk and Fineout-Overholt (Melnyk et al., 2008).

The EBP-B scale comprises 16 items evaluating healthcare professionals' beliefs about the value of EBP and their capacities to use it in their daily clinical practice. The items are scored on a five-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree). By adding the 16 individual item scores, total scores could range from 16 (minimum) to 80 (maximum), with higher total scores reflecting more positive beliefs about EBP (Melnyk et al., 2008). Psychometric evaluations of the French- and German-language versions of the EBP-B scale defined Cronbach's alphas of 0.877 and 0.85, respectively (Kerwien-Jacquier et al., 2020; Verloo et al., 2017a).

The French-language version of the EBP-I scale comprises 17 items evaluating the stages of the EBP process. The items are classified on a five-point Likert scale measuring the frequencies with which different actions were carried out over the previous 8 weeks, ranging from 0 (never) to 4 (more than eight times). By adding the 17 individual item scores, total scores could range from 0 (minimum) to 68 (maximum) (Verloo et al., 2017a), with higher total scores reflecting more frequent use of the steps or components of EBP (Melnyk et al., 2008). The German-language version comprises 18 items, however, with a potential total score ranging from 0 (minimum) to 72 (maximum) (Kerwien-Jacquier et al., 2020). To ensure a homogeneous analysis of the data collected from the canton's two linguistic regions, the present study only considered 17 items from the German-language scale. The French- and German-language versions of the EBP-I scale also have good psychometric properties, with Cronbach's alphas of 0.94 and 0.88, respectively (Kerwien-Jacquier et al., 2020; Verloo et al., 2017a).

## 2.5 | Sociodemographic and professional data

The sociodemographic and professional data included sex, age, years of nursing care experience, years of nursing home experience, the full-time or part-time employment rate, the job position held, the initial level of education and subsequent further training. Participants were also asked whether they had previously heard about EBP and, if so, how they had heard about it.

## 2.6 | Data analysis

Statistical analysis was carried out using STATA software, version 15.1. (StataCorp., 2019). Missing item responses in returned scales were left blank, and they were not counted in item total score calculations. Items were considered in the item analysis so long as <20% of their respective responses were missing. Descriptive analyses were performed to synthesise quantitative variables using measures of central tendency, dispersion and shape. Given that data from continuous variables were not normally distributed, these were described using medians, interquartile ranges, minimums and maximums. Categorical variables were represented using frequencies and percentages (Polit, 2010). We explored associations between certain sociodemographic and professional characteristics and nurses' total scores for the EBP-B and EBP-I scales. Because their distributions were asymmetrical, those analyses used non-parametric tests, that is the Mann-Whitney *U* test (*U*), the Kruskal-Wallis test (*H*), Spearman's ( $\rho$ ) rank correlation coefficient (*rs*) and the Kendall ( $\tau$ ) correlation coefficient ( $\tau$ ) (Polit, 2010). The bilateral threshold for significance was set at a value of  $p \leq .05$ , and the confidence interval was set at 95% (95% CI).

## 3 | RESULTS

### 3.1 | Sample

Of the 478 questionnaires distributed to eligible participants, 194 were self-administered and returned to the investigators—a response rate of 40.6%. Of the canton's 51 nursing homes, three did not wish to participate in the study due to an overload of work. Only 138 of the returned surveys were answered in their entirety, 37 had missing item responses in the sociodemographic and professional questionnaire, and 30 had missing responses in the EBP-B and EBP-I scales. One questionnaire on sociodemographic and professional data was not filled in entirely and was excluded from that analysis. Eight EBP-B scales and nine EBP-I scales were not filled in entirely and were excluded from the analysis of the scales (Figure 1).

### 3.2 | Sociodemographic and professional data and exposure to evidence-based practice

The majority of participants were women ( $n = 167$ ), with a median age of 45 years old (IQR = 19.0; min = 23.0; max = 66.0). Professional experience in nursing homes ranged from 3 months–31 years (med = 7.0; IQR = 9.0). Most participants held a position in general care ( $n = 116$ ). Some participants ( $n = 60$ ) were nurse managers (head nurse, unit leader or team leader). A small fraction of participants ( $n = 17$ ) worked as specialist nurses (nurse clinician, head of palliative care, head of old age psychiatry, nurse practitioner trainer). Three quarters of participants ( $n = 145$ ) had had previous exposure to EBP. Bias due to EBP exposure came mainly from nurses' initial training ( $n = 52$ ) and then from their further training ( $n = 38$ ). Other sources of information ( $n = 28$ ) had also exposed nurses to the EBP approach, such as reading, conferences, discussions with colleagues

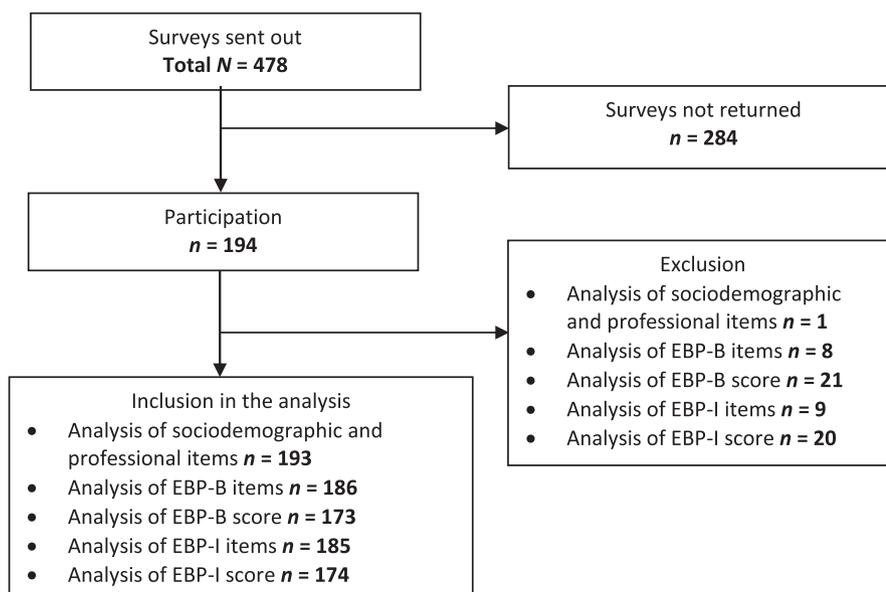


FIGURE 1 Participant recruitment diagram

TABLE 1 Participants sociodemographic and professional characteristics (N = 193)

Variables	n total (%)	n (%)	Min	Max	Med [IQR]	Mean [SD]
Sex	193 (100)					
Male		26 (13.5)				
Female		167 (86.5)				
Age	193 (100)		23	66	45 [19]	43.9 [10.8]
Years of experience in nursing care	187 (96.9)		0.3	45	17 [21]	18.8 [11.4]
Years of experience in a nursing home	189 (97.9)		0.25	31	7 [9]	9.4 [7.4]
% of full-time equivalent activity	192 (99.5)		15	100	80 [30]	80.5 [18.6]
Nursing homes by linguistic region	191 (98.9)					
French-speaking		132 (69.1)				
German-speaking		59 (30.9)				
Current position	193 (100)					
Nurse		116 (60.1)				
Nurse manager		60 (31.1)				
Specialist nurse		17 (8.8)				
Initial level of training	165 (85.5)					
Baseline training		21 (12.7)				
Registered nurses		85 (51.5)				
Bachelor's Degree		59 (35.8)				
Further training and education	186 (96.4)					
Yes		127 (68.3)				
No		59 (31.7)				
Types of further training	129 (66.8)					
CAS and DAS		90 (69.8)				
MAS and Master		8 (6.2)				
Other		31 (24.0)				
Exposure to EBP	193 (100)					
Yes		145 (75.1)				
No		48 (24.9)				
EBP exposure bias	146 (75.6)					
Initial level of training		52 (35.6)				
Further training		38 (26.0)				
Personal exposure/reading/other		28 (19.2)				
Several sources		28 (19.2)				

Abbreviations: CAS, Certificate of Advanced Studies; DAS, Diploma of Advanced Studies; EBP, evidence-based practice; IQR, interquartile range—75th percentile – 25th percentile; M, mean; MAS, Master of Advanced Studies; Med, median; NH, nursing home; SD, standard deviation.

or follow-up with students. Some participants reported several concomitant sources of exposure ( $n = 28$ ) (Table 1).

### 3.3 | Beliefs about evidence-based practice

Total scores on the EBP-B scale ranged from 34–78, with a median of 55 (IQR = 13.0). Item 4, 'I believe that critically appraising

evidence is an important step in the EBP process', item 5, 'I am sure that evidence-based guidelines can improve clinical care', and item 1, 'I believe that EBP results in the best clinical care for patients', had majorities of positive ratings (med = 4.0; IQR = 1.0), with 83% ( $n = 161$ ), 82.5% ( $n = 160$ ) and 77.4% ( $n = 150$ ) of responses in agreement, respectively. On the contrary, item 14, 'I know how to implement EBP sufficiently well to make practice changes', item 8, 'I am sure that I can implement EBP in a time-efficient way', and item 12,

'I am sure that I can access the best resources in order to implement EBP', were reported to have mostly negative ratings (med = 3.0; IQR = 2.0), with 35% ( $n = 68$ ), 30.4% ( $n = 59$ ) and 27.3% ( $n = 53$ ) of responses in disagreement, respectively. Reverse scored items 11, 'I believe that EBP takes too much time', and 13, 'I believe EBP is difficult', revealed that nurses' beliefs showed quite a good agreement with the items (med = 3.0; IQR = 2.0), with 36.1% ( $n = 70$ ) and 37.1% ( $n = 72$ ) of responses in agreement, respectively (Table 2). The EBP-B scale's internal consistency displayed an excellent Cronbach's alpha of 0.87, and inter-item correlations (Spearman–Brown  $r$ ) were 0.82 (Waltz et al., 2017) (Table 2).

### 3.4 | Implementation of evidence-based practice

Total scores on the EBP-I scale ranged from 0–61, with a median of 11.5 (IQR = 13.0). Activity frequencies (AFs) for implementation activities were mainly 'never' and 'one to three times' during the 8 weeks

before responding to the survey. Item 5, 'I collected data on a patient problem', showed the highest AF (med = 2.0; IQR = 3.0). A third of the participants ( $n = 55$ ) had collected data on a patient problem more than eight times in the previous 8 weeks. Item 7, 'I evaluated the outcomes of a practice change', also displayed a high AF (med = 1.0; IQR = 2.0). On the contrary, item 12, 'I accessed the Cochrane database of systematic reviews', had the lowest AF (med = 0.0; IQR = 0.0). Most of the participants ( $n = 155$ ) had not carried out this activity in the previous 8 weeks. Item 3, 'I generated a PICO question about my clinical practice' (med = 0.0; IQR = 1.0), item 6, 'I shared evidence from a study in the form of report/presentation to more than two colleagues' (med = 0.0; IQR = 1.0), and item 9, 'I shared evidence from a research study with a patient/family member' (med = 0.0; IQR = 1.0) all presented low AFs, with the majority of participants reporting that they had not carried out those activities in the previous 8 weeks (Table 3). The EBP-I scale displayed excellent internal consistency, with a Cronbach's alpha of 0.91, and inter-item correlations (Spearman–Brown  $r$ ) were 0.93 (Waltz et al., 2017) (Table 3).

TABLE 2 Level of agreement between the items of the EBP Beliefs scale ( $N = 186$ )

Items on the EBP Beliefs scale	$n$	Mean (SD)	Median (IQR)	Level of agreement, $n$ (%)				
				Totally disagree	Rather agree	No opinion	Rather disagree	Totally agree
1. I believe that EBP results in the best clinical care for patients	185	4.0 (0.9)	4.0 (1.0)	4 (2.1)	12 (6.2)	19 (9.8)	95 (49)	55 (28.4)
2. I am clear about the steps of EBP	182	3.3 (1.2)	4.0 (2.0)	19 (9.8)	30 (15.5)	26 (13.4)	92 (47.4)	15 (7.7)
3. I am sure that I can implement EBP	181	3.5 (1.0)	4.0 (1.0)	4 (2.1)	33 (17)	37 (19.1)	81 (41.8)	26 (13.4)
4. I believe that critically appraising evidence is an important step in the EBP process	186	4.2 (0.8)	4.0 (1.0)	2 (1)	3 (1.6)	20 (10.3)	87 (44.9)	74 (38.1)
5. I am sure that evidence-based guidelines can improve clinical care	186	4.2 (0.8)	4.0 (1.0)	2 (1)	5 (2.6)	19 (9.8)	87 (44.9)	73 (37.6)
6. I believe that I can search for the best evidence to answer clinical questions in a time-efficient way	185	3.5 (1.0)	4.0 (1.0)	2 (1)	35 (18)	44 (22.7)	76 (39.2)	28 (14.4)
7. I believe that I can overcome barriers to implementing EBP	186	3.4 (1.0)	4.0 (1.0)	2 (1)	40 (20.6)	41 (21.1)	85 (43.8)	18 (9.3)
8. I am sure that I can implement EBP in a time-efficient way	184	3.1 (1.1)	3.0 (2.0)	12 (6.2)	47 (24.2)	48 (24.7)	63 (32.5)	14 (7.2)
9. I am sure that implementing EBP will improve the care that I deliver to my patients	185	4.0 (0.9)	4.0 (1.0)	1 (0.5)	15 (7.7)	27 (14)	90 (46.4)	52 (26.8)
10. I am sure about how to measure the outcomes of clinical care	185	3.3 (1.1)	3.0 (2.0)	11 (5.7)	39 (20.1)	43 (22.2)	76 (39.2)	16 (8.3)
11. I believe that EBP takes too much time	185	3.1 (1.1)	3.0 (2.0)	10 (5.2)	47 (24.2)	58 (30)	50 (25.8)	20 (10.3)
12. I am sure that I can access the best resources in order to implement EBP	186	3.1 (1.0)	3.0 (2.0)	9 (4.6)	44 (22.7)	55 (28.4)	69 (35.6)	9 (4.6)
13. I believe EBP is difficult	186	3.0 (1.1)	3.0 (2.0)	15 (7.7)	53 (27.3)	46 (23.7)	58 (29.9)	14 (7.2)
14. I know how to implement EBP sufficiently well to make changes to practice	182	3.0 (1.1)	3.0 (2.0)	21 (10.8)	47 (24.2)	42 (21.7)	61 (31.4)	11 (5.7)
15. I am confident about my ability to implement EBP where I work	185	3.3 (1.1)	3.0 (2.0)	16 (8.3)	33 (17)	45 (23.2)	70 (36.1)	21 (10.8)
16. I believe the care that I deliver is evidence-based	186	3.7 (0.9)	4.0 (1.0)	3 (1.6)	16 (8.3)	43 (22.2)	102 (52.6)	22 (11.3)
Score total	172	55.6 (9.3)	55 (13.0)					

Abbreviations: EBP, evidence-based practice; IQR, interquartile range—75th percentile – 25th percentile; SD, standard deviation.

### 3.5 | Relationship between sociodemographic/professional data and the EBP Beliefs and Implementation Scale Scores

Some statistically significant differences were observed between participants' sociodemographic and professional characteristics and their total EBP-B scale scores (Table 4). The more years of professional

experience working in nursing homes nurses had, the more significantly their EBP-B score diminished, ( $r_{s(169)} = -0.211$ ;  $p < .01$ ), whereas that score increased significantly as their percentage of full-time equivalent activity rose ( $r_{s(169)} = 0.164$ ;  $p = .03$ ). Finally, EBP-B scores were significantly ( $U = 2.073$ ;  $p = .04$ ) higher (med = 55.5; IQR = 14.5) among participants who had had previous exposure to EBP than those of other participants (med = 52.5; IQR = 10.0).

TABLE 3 Activity frequency for the items of the EBP Implementation scale (N = 185)

Items on the EBP Implementation scale	n	Mean (SD)	Median (IQR)	Proportion AF n (%)				
				Never	1-3	4-5	6-7	8
1. I used evidence to change my clinical practice	185	1.1 (1.2)	1.0 (2.0)	61 (33.0)	73 (39.4)	27 (14.6)	7 (3.7)	17 (9.2)
2. I critically appraised evidence from a research study	184	0.7 (1.0)	0.0 (1.0)	103 (56.0)	49 (26.3)	17 (9.2)	8 (4.3)	7 (3.7)
3. I generated a PICO (Population, Intervention, Context/ Comparison, Outcome) question about my clinical practice	179	0.5 (1.0)	0.0 (1.0)	125 (71.0)	28 (15.6)	8 (4.5)	9 (5.0)	7 (3.9)
4. I informally discussed evidence from a research study with a colleague	184	0.9 (1.0)	1.0 (1.0)	73 (39.6)	78 (42.4)	18 (9.7)	5 (2.7)	10 (5.4)
5. I collected data on a patient problem	185	2.2 (1.4)	2.0 (3.0)	21 (11.3)	56 (30.2)	29 (15.7)	24 (13.0)	55 (29.7)
6. I shared evidence from a study in the form of a report/presentation to more than two colleagues	185	0.5 (0.8)	0.0 (1.0)	129 (69.7)	35 (19.0)	13 (7.0)	4 (2.1)	4 (2.1)
7. I evaluated the outcomes of a practice change	183	1.3 (1.3)	1.0 (2.0)	60 (32.8)	51 (27.9)	36 (19.7)	15 (8.2)	21 (11.5)
8. I shared an EBP guideline with a colleague	184	0.8 (1.1)	0.0 (1.0)	98 (53.2)	48 (26.0)	21 (11.4)	7 (3.8)	10 (5.4)
9. I shared evidence from a research study with a patient/family member	185	0.5 (0.8)	0.0 (1.0)	125 (67.5)	42 (22.7)	11 (5.9)	3 (1.6)	4 (2.1)
10. I shared evidence from a research study with a multidisciplinary team member	185	0.6 (0.9)	0.0 (1.0)	109 (58.9)	52 (28.1)	12 (6.5)	7 (3.8)	5 (2.7)
11. I read and critically appraised a clinical research study	185	0.7 (1.0)	0.0 (1.0)	94 (50.8)	65 (35.1)	13 (7.0)	6 (3.2)	7 (3.8)
12. I accessed the Cochrane database of systematic reviews	183	0.2 (0.8)	0.0 (0.0)	155 (84.7)	15 (8.2)	7 (3.8)	2 (1.1)	4 (2.2)
13. I used an EBP guideline/systematic review to change clinical practice where I work	185	0.6 (1.0)	0.0 (1.0)	118 (63.8)	37 (20.0)	18 (9.7)	5 (2.7)	7 (3.8)
14. I evaluated a care initiative by collecting patient outcome data	184	0.9 (1.3)	0.0 (1.0)	100 (54.3)	39 (21.2)	14 (7.6)	13 (7.1)	18 (9.8)
15. I shared the outcome data collected with colleagues	184	0.9 (1.3)	0.0 (2.0)	99 (53.8)	37 (20.1)	18 (9.8)	13 (7.1)	17 (9.2)
16. I changed practice based on patient outcome data	184	1.0 (1.3)	1.0 (2.0)	88 (47.8)	44 (23.9)	23 (12.5)	13 (7.1)	16 (8.7)
17. I promoted the use of EBP to my colleagues	185	0.6 (1.1)	0.0 (1.0)	115 (62.1)	41 (22.1)	15 (8.1)	4 (2.1)	10 (5.4)
Score total	174	14.0 (11.1)	11.5 (13.0)					

Abbreviations: AF, activity frequency; EBP, evidence-based practice; IQR, interquartile range—75th percentile – 25th percentile; SD, standard deviation.

TABLE 4 Relationship between sociodemographic/professional data and the EBP Beliefs and Implementation Scale Scores

Variables	N, total		Med [IQR]		Mean [SD]		U		H		$r_s$		p-Value	
	EBP-B	EBP-I	EBP-B	EBP-I	EBP-B	EBP-I	EBP-B	EBP-I	EBP-B	EBP-I	EBP-B	EBP-I	EBP-B	EBP-I
Sex														
Male	24	25	63.0 [15.0]	12.0 [14.0]	60.6 [8.5]	17.2 [13.8]	3.03	1.22					<.01*	.22
Female	148	149	55.0 [12.0]	11.0 [12.0]	54.7 [9.1]	13.4 [10.5]								
Age	172	174												
% of full-time equivalent activity	171	173												
Years of experience in nursing care	168	168												
Years of experience in a nursing home	171	171												
Current position														
Nurse	104	104	55.0 [11.0]	11.0 [11.0]	54.8 [8.8]	13.5 [11.3]			1.60	4.37				.44
Nurse manager	52	55	55.5 [17.0]	11.0 [13.0]	56.1 [9.6]	13.5 [10.6]								
Specialist nurse	16	15	55.0 [20.0]	16.0 [11.0]	58.5 [10.5]	18.4 [10.7]								
Initial level of training	150	152												
Exposure to EBP														
Yes	132	133	55.5 [14.5]	12.0 [12.0]	56.3 [9.7]	14.6 [11.7]	2.07	0.98						.04*
No	40	41	52.5 [10.0]	11.0 [11.0]	52.9 [6.9]	11.8 [8.5]								

Abbreviations: H, Kruskal–Wallis test; IQR, interquartile range—75th percentile – 25th percentile; Med, median;  $r_s$ , Spearman's rank correlation coefficient; SD, standard deviation; U, Mann–Whitney test. \*Significant difference  $p \leq .05$ .

No statistically significant differences were observed between participants' sociodemographic and professional characteristics and their total EBP-I scale scores (Table 4).

### 3.6 | Relationship between the EBP Beliefs and Implementation Scale Scores

A positive correlation was observed between the EBP-B scale and EBP-I scale scores ( $q = 0.283$ ;  $p < .01$ ). The more positive nurses' beliefs about EBP were, the higher their level of implementation scores were. This finding was in agreement with the postulate in the ARCC framework, indicating that favourable beliefs about EBP are indeed associated with better implementation of the approach.

## 4 | DISCUSSION

Our findings agreed with those of other studies in underlining that participants' beliefs about EBP were generally favourable, even if their systematic implementation in clinical practice was sub-optimal (Gentizon et al., 2016; Melnyk et al., 2010; Pereira et al., 2018; Verloo et al., 2017b). The majority of participants stated that they had had previous exposure to the concept of EBP via their initial level of nursing training. This result can be explained by the fact that the implementation of EBP has been a part of basic nursing training in Switzerland since 2012. Sarabia-Cobo et al. (2015) reported similar results in Spain, where the authors observed that more recently, qualified nurses working in nursing homes were more aware of the concept of EBP. With regard to studies in Switzerland, our findings confirmed those of Verloo et al. (2017b) and Pereira et al. (2018), which indicated that levels of exposure to the concept of EBP were 75% in hospital settings and 65% in community healthcare settings.

The median scores revealed from our investigation of EBP-B scale scores indicated that the nurses working in nursing home settings had favourable beliefs about EBP. These results were in line with a large number of international and Swiss studies carried out in hospital settings (Belowska et al., 2020; Saunders & Vehvilainen-Julkunen, 2017; Soleymanifar et al., 2019), community healthcare settings (Cruz et al., 2016; Titlestad et al., 2018) and training programmes (Gonzalez-Torrente et al., 2012). In comparison with previous research carried out in nursing homes, the present study reinforced the conclusions of a study on Belgium by Demarre et al. (2012) and one in Taiwan by Chang et al. (2010), both of which revealed a majority of favourable beliefs about EBP in nursing homes.

Although participants were more in agreement with the fact that they believed 'that critically appraising evidence is an important step in the EBP process', they disagreed about knowing how 'to implement EBP sufficiently well to make changes to practice', how to 'implement EBP in a time-efficient way', and whether they could 'access the best resources in order to implement EBP'. This was also the case in several international and Swiss studies which used the EBP-B scale (Gentizon et al., 2016; Cruz et al., 2016; Pereira et al., 2018; Stokke

et al., 2014; Titlestad et al., 2018; Verloo et al., 2017b). Although the present study revealed a significant amount of argument about whether enough resources for carrying out EBP were available, this was also the case in the studies by Verloo et al. (2017b), Pereira et al. (2018), Stokke et al. (2014) and Sredl et al. (2011).

Despite prior favourable exposure to the concept and positive beliefs about EBP, the median score on the EBP-I scale indicated that its level of implementation in participants' daily clinical practice remained irregular and sub-optimal, with the AFs of the different stages of the approach's implementation ranging from zero to three times during the 8 weeks before completing the survey. Similar AFs were also recorded in Swiss community healthcare settings by Pereira et al. (2018) and hospital settings by Verloo et al. (2017b). On the contrary, in the USA, Harper et al. (2017) observed a good level of implementation of EBP by nurses, with AFs for the different stages of implementation of around one to three times during the preceding 8 weeks. Our results showed that participants were more likely to use the stages of implementation of EBP linked directly to clinical practice rather than those which required scientific skills such as accessing the Cochrane database of systematic reviews or generating a PICO question about clinical practice. This finding was also reflected in other Swiss studies (Pereira et al., 2018; Verloo et al., 2017b). The poor level of implementation of EBP observed in the present study may most notably be explained by institutional constraints placed on the current context of care in Switzerland, namely heavy workloads and constant attempts to save time and money. These constraints were also underlined in a study in the USA by Klein-Fedyshin (2015) and a study in Spain by Sarabia-Cobo et al. (2015).

Our results revealed an association between the EBP-B and EBP-I scale scores, thus confirming the hypothesis Melnyk and Fineout-Overholt formulated in their ARCC framework (Melnyk, 2012; Melnyk & Fineout-Overholt, 2019). This result was also consistent with the European studies by Thorsteinsson (2013) and Stokke et al. (2014), and the Swiss study by Pereira et al. (2018).

No statistically significant associations were found between participants' EBP-I scale total scores and their sociodemographic and professional characteristics. However, there were associations between participants' EBP-B scale total scores, their previous exposure to the concept of EBP, years of professional experience and their rate of full-time equivalent activity. EBP-B scale scores rose in a statistically significant manner among participants who had had previous exposure to the concept of EBP. Several studies have hypothesised that it is probable that exposure to EBP induces greater knowledge about it, which, in turn, influences positive beliefs about the concept (Bonner & Sando, 2008; Stokke et al., 2014; Thiel & Ghosh, 2008; Thorsteinsson & Sveinsdottir, 2014). We also confirmed that EBP scale scores increased significantly the fewer years of professional experience in nursing homes nurses had—an observation also reported in European studies in different settings (Bohman et al., 2013; Gonzalez-Torrente et al., 2012; Saunders & Vehvilainen-Julkunen, 2017). Finally, the rate of full-time equivalent activity significantly positively influenced EBP-B scale scores,

with the most positive beliefs among participants working high percentages or full time. In comparison with other international and Swiss studies carried out in nursing homes, and to the best of our knowledge, the present study was the first to highlight significant associations between EBP-B scale scores and the sociodemographic and professional characteristics of nurses working in nursing homes (Chang et al., 2010; Demarre et al., 2012; Pereira et al., 2018; Titlestad et al., 2018; Verloo et al., 2017b).

The present study's Cronbach alpha levels and inter-item correlation coefficients in the EBP-B and EBP-I scales were close to those described in their original version (Melnik et al., 2008). Our findings also showed excellent reliability (Waltz et al., 2017).

Although a majority of the participating nurses working in the nursing homes of a French-speaking Swiss canton considered EBP to be an important means of improving resident care and patient outcomes, its proper implementation into clinical practice and the difficulties in obtaining the necessary resources to do that represent a major obstacle. Institutional leadership in promoting EBP would contribute to improving beliefs and implementation in nursing homes (Chang et al., 2013; Harper et al., 2017; Higuchi et al., 2017). A viable way of inciting or reinforcing an institutional culture which promoted EBP might be to target nurse managers. Another central recommendation would be to encourage mentoring by nurses with good knowledge and advanced skills in EBP for teams of front-line nurses. In nursing home settings, Woo et al. (2017) noted that the presence of nurses with solid skills in the use of EBP in their daily practice encouraged its implementation in their institutions. Creating partnerships with organisations external to the institution is another recommended strategy (Chang et al., 2013; Edwards & Smith Higuchi, 2018) and one which could be explored further, especially to encourage the use of scientific databases. Nursing education today seems to be raising the awareness of future healthcare professionals about the necessity of using EBP. The need to use EBP should be reinforced continually because better knowledge about the concept facilitates its integration into nursing practices and its implementation (Emparanza et al., 2015; DiCenso et al., 2005). Finally, further, more in-depth research should be considered, to target the reality of daily practice in long-term care facilities and to explore strategies for turning EBP into standard practice in nursing home settings.

#### 4.1 | Limitations

The present study had strengths and limitations. After undertaking an exhaustive search of the literature, we conclude that this was the first study in Switzerland to examine beliefs about EBP among nurses working in nursing homes and their implementation of the concept in their daily clinical practice. It was also the first study internationally to use the EBP-B and EBP-I scales to explore the nursing home context. The response rate was a study strength as it was higher than other studies carried out in the same French-speaking Swiss canton (Pereira et al., 2018; Verloo et al., 2017b). Nevertheless, there were some limitations. In terms of

the study's internal validity, the possibility of selection bias cannot be excluded. Indeed, knowing the precise number of nurses working in participating nursing homes was impossible. Because the surveys were transmitted to the participants by head nurses, they may not have distributed all the documents, or they may have specifically selected the respondents. With regard to the participants, it is possible that only those who were interested in the topic of EBP volunteered to participate in the study. A potential information bias was also identified: participants did not always fully understand all the terminology used in the EBP-B and EBP-I scales. This fact was transmitted to the investigators orally by a few head nurses during the study, and it was also noted by participants on some of the returned surveys. This may have led to incorrect or missing responses. Finally, using a self-administered survey could lead to potential bias and all the typical disadvantages of self-declared data. With regard to external validity, the present study had some methodological limitations. This type of study does not enable the precise identification of any facilitators or of hindrances to EBP and its implementation. Despite a good response rate, the present study was limited to one Swiss canton. Knowing how linguistically and culturally different Swiss cantons can be, generalising these results to other areas should be done with care.

## 5 | CONCLUSION

The majority of nurses working in the nursing homes of a French-speaking Swiss canton had had previous exposure to the concept of EBP and had positive beliefs about it. Nevertheless, this was not entirely reflected in their daily clinical practice because the reported levels for the implementation of EBP in participating nursing homes were irregular and sub-optimal. Further research should be carried out on nurses' beliefs about EBP and their implementation of the concept in the nursing homes where they work, both in order to discover how care is provided in long-term care facilities and to adopt appropriate interventions.

## 6 | RELEVANCE TO CLINICAL PRACTICE

More importance should be given to the promotion of EBP among the nurses working in nursing homes. This could be done by offering training and developing the individual, institutional and contextual strategies which would encourage the implementation of this essential approach to nursing practice.

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**CONFLICT OF INTEREST**

The authors declared no conflicts of interest.

**AUTHOR CONTRIBUTIONS**

Study design: EP, SF, HV and FP; data collection: EP and SF; all the authors contributed to data analysis and interpretation, statistical analysis, study supervision and writing the manuscript.

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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