


ORIGINAL ARTICLE

Beliefs and implementation of evidence-based practice among community health nurses: A cross-sectional descriptive study

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Aims and objectives: To describe beliefs about evidence-based practice and record levels of implementation among community health nurses working independently and in community healthcare centres in the canton of Valais, Switzerland.

Background: In many settings, evidence-based practice is considered a key means of delivering better and secure health care. However, there is a paucity of published studies on the implementation of evidence-based practice in community health care.

Design: Cross-sectional descriptive study ($n = 100$).

Methods: Beliefs about evidence-based practice and levels of implementation were measured using validated scales developed by Melnyk et al. (*Worldviews on Evidence-Based Nursing*, 5, 2008, 208). Information on respondents' sociodemographic and professional characteristics was collected. Data were analysed using descriptive and inferential statistics.

Results: The final response rate was 32.3% ($n = 100$). More than half of respondents had previously heard about evidence-based practice; most believed in the value of using evidence to guide their practice and were prepared to improve their skills to be able to do so. However, the rate of implementation of evidence-based practice in daily practice in the 8 weeks before the survey was poor. Statistically significant positive associations were found between beliefs about evidence-based practice and how respondents had heard about it and between implementation rates and whether they had heard about evidence-based practice and how they had done so. Evidence-based practices requiring scientific knowledge and skills were implemented less frequently. Greater professional community healthcare experience and management roles did not increase implementation of evidence-based practice.

Conclusions: The systematic implementation of evidence-based practice by community health nurses working independently and in healthcare centres in Valais was rare, despite their positive beliefs about it.

Relevance to clinical practice: These results revealed the level of implementation of evidence-based practice by nurses in community healthcare settings in Valais. Further research is required to better understand their needs and expectations and to

develop suitable strategies that will allow the integration of evidence-based practice into nurses' daily practice.

KEYWORDS

barriers, best practice, community health care, cross-sectional survey, evidence-based practice, facilitators, independent nurses, nursing, scores, Switzerland

1 | INTRODUCTION

Evidence-based practice (EBP) was defined by Sackett, Rosenberg, Gray, Haynes, and Richardson (1996) as a clinical judgement process that considers several sources of information: scientific evidence and research, patient choices and preferences, available resources, the context of care and finally the professional caregiver's clinical expertise. This concept is currently recognised as a key factor in delivering optimal health care to patients, ensuring their quality and safety and providing the most efficient use of scarce economic resources in the healthcare system (Hughes, 2008; Ubbink et al., 2011). In a context of continuous scientific progress and healthcare system reforms, EBP is probably the most important and transformative approach to contemporary daily nursing practice (Neville & Horbatt, 2008).

Although the benefits of EBP have been widely documented in the literature, its implementation in healthcare institutions remains embryonic (Berland, Gundersen, & Bentsen, 2012; Mallion & Brooke, 2016; Melnyk, Fineout-Overholt, Gallagher-Ford, & Kaplan, 2012; Stokke, Olsen, Espehaug, & Nortvedt, 2014). Various factors related to individual, professional and organisational characteristics are perceived as barriers to translating EBP into different clinical applications: lack of access to electronic databases and costly scientific articles (Underhill, Roper, Siefert, Boucher, & Berry, 2015); insufficient knowledge about how to handle those databases and critically appraising research results; lack of time for documentary research and reading (Breimaier, Halfens, & Lohrmann, 2011; Brown, Kim, Stichler, & Fields, 2010); the difficulty of transferring research results into practice and a lack of knowledge about how to implement EBP (Breimaier et al., 2011; Majid et al., 2011); and the lack of nursing autonomy and management support for changing practices (Baird & Miller, 2015; Brown et al., 2010). Far fewer studies deal with primary care and most of those examine hospital care.

The few authors studying EBP in community health care have reported that the most significant barrier to its implementation was the lack of time available to search for, understand and interpret research findings (Gomes Pereira, da Silva Peixoto de Oliveira Cardoso, & Correia dos Santos Cardoso Martins, 2012; Mallion & Brooke, 2016). Some authors documented the main barrier to the use of research as being that nurses were unaware of existing research studies (Moreno-Casbas, Fuentelsaz-Gallego, de Miguel, Gonzalez-Maria, & Clarke, 2011). Other barriers among community healthcare nurses, documented in a recent study on implementing EBP, were inadequate access to information technology, limited

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

- To the best of our knowledge, this article is the first investigation of beliefs about and implementation of EBP among community health nurses working independently and in healthcare centres in Switzerland.
- The article reveals low rates of implementation of EBP by responding community health nurses, despite their positive beliefs about it.
- Results suggest the need for programmes of continuing education and a concerted effort to support EBP in community care settings to ensure better healthcare delivery.

information technology skills and difficulties in understanding statistical analysis (Bennasar-Veny, Gonzalez-Torrente, De Pedro-Gomez, Morales-Asencio, & Pericas-Beltran, 2016; Brooke & Mallion, 2016; Gerrish & Cooke, 2013; Moreno-Casbas et al., 2011).

Operationalising the EBP approach has seldom received attention from health professionals and researchers in community healthcare settings. Nevertheless, community health nurses are regularly confronted with the increasingly complex home healthcare situations linked to rising numbers of ageing and multimorbid patients (Bachmann, Burla, & Kohler, 2015; OECD, 2017). With this in mind, a better understanding of community health nurses' beliefs about EBP, and whether and how they implement it is crucial to supporting its use and ensuring safe, high-quality health care. In the canton of Valais, community healthcare nursing is delivered by community healthcare centres (CHC) and independent nurses (INs) (CHC, 2017, ASI SBK Valais, 2018). CHC nurses are hired by publicly accredited healthcare institutions which are contractually responsible for carrying out the canton's home healthcare policy. Accredited INs carry out physician-prescribed or privately requested nursing care thus contributing to that policy. However, they are free to accept or to refuse complex and intensive health and nursing care missions (OVS, 2010).

This study's aim was to describe beliefs about EBP and record levels of implementation among community health nurses working independently and in CHCs in the canton of Valais, Switzerland. The following questions have therefore been addressed: (i) What are the beliefs about EBP and its implementation held by community health nurses working independently and in CHCs in the canton of Valais?

(ii) Is there any association between their beliefs about EBP or its implementation and their sociodemographic and professional characteristics? (iii) Is there an association between beliefs about EBP and how respondents had previously heard about EBP? (iv) Is there an association between EBP implementation and whether respondents had heard about EBP? (v) Is there an association between the EBP beliefs and implementation scores?

1.1 | Theoretical framework of the study

The study's theoretical framework was based on Melnyk and Fineout-Overholt's model (2005) of Advancing Research and Clinical Practice through Close Collaboration (ARCC).

This model conceptualises a sustainable means of implementing the processes of EBP. Made up of different steps, it allows organisations to create conditions favourable to the development of a culture of EBP, one which promotes positive beliefs and therefore its implementation. These steps involve the identification of facilitators and barriers to implementation and the development of a mentoring programme within the organisation to ensure the effectiveness and sustainability of the process (Melnyk & Fineout-Overholt, 2015). As proposed by the ARCC model, we hypothesised that more positive beliefs about the value of EBP would be associated with better implementation.

2 | MATERIALS AND METHODS

2.1 | Study design and setting

This multisite, cross-sectional, descriptive study was conducted in southern Switzerland among the canton of Valais' community health nurses working independently and in its six regional public CHCs.

2.2 | Participants

The total eligible study population was composed of 310 nurses: 266 working in six regional CHCs, comprising 18 local CHCs and 44 working independently in the Valais region. Nursing students and community health nurses with temporary contracts or <3 months experience were excluded.

2.3 | Outcome measures

2.3.1 | EBP Beliefs and EBP Implementation Scales

Outcomes were measured using a translated French language version of the Melnyk, Fineout-Overholt, and Mays (2008) EBP Beliefs and Implementation Scales (Verloo, Desmedt, & Morin, 2017). Both tools were tested for reliability and validity in a previous study (Verloo, Desmedt, & Morin, 2016).

The EBP Beliefs Scale consists of 16 items on individuals' beliefs about the value of EBP and their ability to implement in daily practice. Respondents were asked to score the level to which they

agreed or disagreed with each item using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). After reverse scoring for two negative items, total scores could range between 16–80. Higher scores reflected more positive beliefs about EBP (Melnyk et al., 2008).

The French version of the EBP Implementation Scale consists of 17 items describing the essential components and steps of the EBP approach (Verloo et al., 2017). A five-point frequency scale measured how often the respondent had performed each item in the previous 8 weeks. The frequency scale ranged from 0 (not performed) to 4 (more than eight times). The total score was the sum of the responses to the 17 items and could range from 0–68. Higher total scores reflected the more frequent use of the steps or components of EBP (Melnyk et al., 2008).

2.3.2 | Sociodemographic and professional data

Sociodemographic and professional data were collected related to age, sex, educational level, country of education, percentage of full-time activity, number of years of professional experience as a nurse and specifically in community health, and current professional function. In addition, we asked whether respondents had ever heard about EBP and, if so, in what circumstances.

2.4 | Data collection

Following the study protocol's ethical approval by the Human Research Ethics Committee of the Canton of Valais (CCVEM-VS, N° 040/14) and by the canton's directorate of CHCs, data collection took place between September 2015–February 2016. Data collection procedures differed for CHC and INs. For CHC nurses, the study nurse announced and explained the survey during CHC team meetings. Self-administered paper questionnaires in prepaid envelopes addressed to the authors were distributed to potential respondents during these meetings. As it was impossible to meet INs in their workplaces or to bring them all together, the survey was announced and explained to them by telephone, and self-administered questionnaires were sent by post. To increase participation, two telephone call reminders were made to CHCs and INs 2 and 4 weeks after the study's launch.

2.5 | Data analysis

Descriptive statistics were used to illustrate data relating to sociodemographic and professional characteristics. The parametric properties of the scores of the EBP Beliefs and Implementation Scales were analysed for the normality of their distributions and the equality of their variances using the Kolmogorov–Smirnov test. Nonparametric tests were used for scale scores with non-normal distributions. The Spearman correlation coefficient (Rho) was used to explore associations between respondents' scores on the EBP Beliefs and Implementation Scales and their sociodemographic and professional characteristics. The central tendency of the ordinal variables was

presented with the median score and 75th percentile interquartile range, as well as the mean score and standard deviation. The internal consistency reliability of the questionnaires was computed using Cronbach's α , which has a normal range between .00 and +1.00, with higher values reflecting better internal consistency. We considered a Cronbach's α of .80 or greater for the EBP Beliefs and Implementation Scales to be highly reliable (Waltz, Strickland, & Lenz, 2016).

Questionnaires with missing sociodemographic data or with responses to fewer than 80% of the EBP scales' items were excluded. As recommended by Polit and Beck (2008), mean imputations were performed for missing values when more than 80% of the EBP scales' items were completed. To respect confidentiality, the sociodemographic and professional characteristics of the community health nurses working CHCs and independently are presented jointly. Data were analysed using the Statistical Package for Social Sciences (IBM SPSS STATISTICS version 22.0, IBM Ltd, Portsmouth, UK). Results were considered statistically significant when $p < .05$.

3 | RESULTS

3.1 | Respondents

Of the 310 self-administered questionnaires distributed to eligible participants, 136 were returned. Of these respondents, 119 were CHC nurses and 17 were INs. Some of the returned questionnaires were incomplete and accompanied by comments to the investigators complaining of unclear and incomprehensible question statements. Thus, 36 questionnaires were excluded from the analysis: 20 because of missing sociodemographic or professional characteristics and 16 because fewer than 80% of the items on the EBP Beliefs and Implementation Scales had been answered. The final sample size

was 100 (Figure 1). The final response rate was 32.3%, whereas the groups' final response rates were 32.3% for CHC nurses and 31.8% for INs. The low number of IN respondents did not allow for an intergroup comparison of scale scores.

3.2 | Sociodemographic and professional characteristics

Table 1 presents the respondents' ($n = 100$) sociodemographic and professional characteristics and whether or not they had previously heard about EBP. Most respondents were women ($n = 88$). Heterogeneity was observed in nurses' ages (25–63 years old), full- and part-time employment (20%–100%), nursing experience (1–36 years), community health experience (1–33 years) and current professional occupation. All the respondents were active in the direct delivery of nursing care. More than half of the respondents were frontline nurses ($n = 58$), one-fourth held management positions in CHCs ($n = 25$), and the rest were clinical nursing specialists in CHCs ($n = 17$). Among the 58 frontline nurses, 14 were INs. More than half of respondents had previously heard about EBP ($n = 65$): 64% of nurses in CHCs ($n = 55$) and 71.4% of INs ($n = 10$) (Table 1).

3.3 | Beliefs about evidence-based practice

Table 2 presents the overall score and item scores on the EBP Beliefs Scale. Overall scores ranged from 27–70, with a median of 54 (IQR = 59).

For both groups, "I am sure that evidence-based guidelines can improve clinical care" (item 5) scored highest ($M = 4.05$, $SD = 0.7$), whereas items related to knowledge about EBP (items 2 and 14) scored lowest ($M = 2.75$, $SD = 1.1$ and $M = 2.75$, $SD = 1.0$, respectively). INs gave higher scores to "I believe that EBP results in the

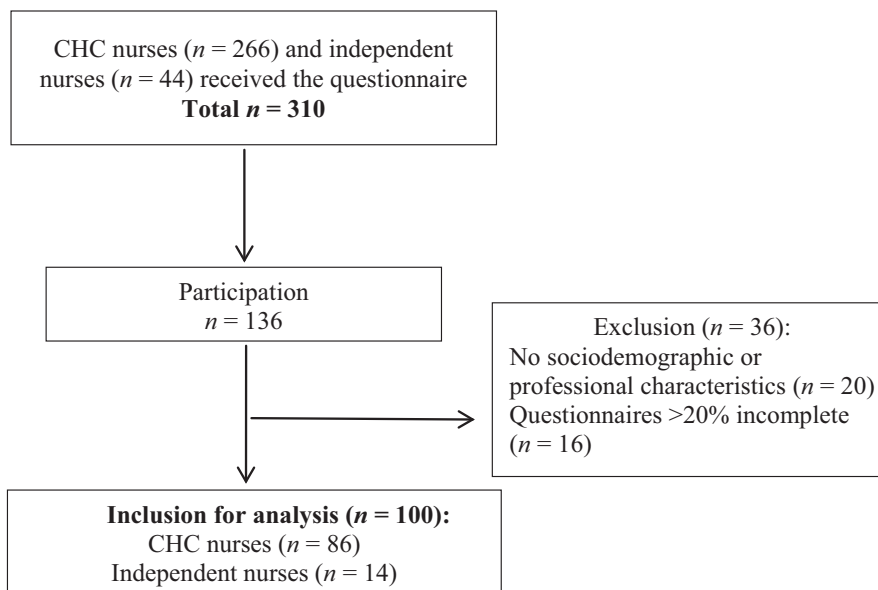


FIGURE 1 Flow chart of participant selection and recruitment

TABLE 1 Participants' sociodemographic and professional characteristics ($n = 100$)

Sociodemographic and professional characteristics	Total sample ($n = 100$)	CHCN ($n = 86$)	IN ($n = 14$)
Sex ($n = 99$)			
Male (%)	11 (11.0)	9 (10.6)	2 (14.3)
Female (%)	88 (88.0)	76 (89.4)	12 (85.7)
Age (years) ($n = 99$)			
Mean (SD)	45.4 (9.2)	44.6 (8.7)	51.4
Min–Max	25–63	25–63	36–59
Country of graduation ($n = 100$)			
Switzerland (%)	89 (89.0)	77 (89.5)	12 (85.7)
Others (%)	11 (11.0)	9 (10.5)	2 (14.3)
Full- and part-time employment (%) ($n = 100$)			
Mean (SD)	67.2 (23.3)	64.4 (21.8)	70.7 (29.3)
Min–Max (%)	20–100	20–100	30–100
Years of experience in nursing practice ($n = 96$)			
Mean (SD)	20.3 (8.5)	20.0 (8.6)	22.5 (8.1)
Min–Max	1–36	1–36	9–35
Years of experience in community health care ($n = 95$)			
Mean (SD)	9.7 (7.1)	10.1 (7.5)	7.4 (4.4)
Min–Max	1–33	1–33	2–16
Professional occupation ($n = 100$)			
Frontline nurse (%)	58 (58.0)	44 (51.2)	14 (100)
Clinical nursing specialist (%)	17 (17.0)	17 (19.8)	–
Management nurses (%)	25 (25.0)	25 (29.0)	–
Level of training ($n = 100$)			
RN, BScN (%)	57 (57.0)	50 (58.1)	7 (50.0)
Nurse specialisation (%)	38 (38.0)	31 (36.0)	7 (50.0)
Masters/MSc (%)	1 (1.0)	1 (1.2)	0 (0.0)
Others (%)	4 (4.0)	4 (4.7)	0 (0.0)
Had you previously heard about EBP?			
Yes (%)	65 (65.0)	55 (64.0)	10 (71.4)
No (%)	35 (35.0)	31 (36.0)	4 (28.6)
	$n = 65$	$n = 55$	$n = 10$
How did you hear about EBP? (%)			
Formal training	11 (16.9)	10 (18.2)	–
Specialised training	11 (16.9)	8 (14.5)	1 (10)
On-site training	5 (7.7)	4 (7.3)	3 (30)
Own interest	12 (18.5)	8 (14.5)	1 (10)
Multiple circumstances	24 (36.9)	23 (41.8)	4 (40)
Missing	2 (3.1)	2 (3.7)	1 (10)

BScN, bachelor's degree in nursing; CHCN, community health centre nurses; EBP, evidence-based practice; IN, independent nurses; RN, registered nurse.

best clinical care for patients" (item 1) than nurses in CHCs ($M = 4.14$, $SD = 0.4$ and $M = 3.76$, $SD = 0.7$, respectively). Inversely, INs gave lower scores than nurses in CHCs for "I believe that I can

search for the best evidence to answer clinical questions in a time-efficient way" (item 6) ($M = 2.79$, $SD = 1.0$ and $M = 3.43$, $SD = 0.9$, respectively). The internal reliability of the EBP Beliefs Scale showed an excellent Cronbach's α score of .84 (Cohen, 1992; Waltz et al., 2016).

3.4 | Implementation of evidence-based practice

The overall median score on the EBP Implementation Scale was 12.0 (IQR = 19.2) corresponding to 9.0 (IQR = 17.0) among CHC nurses and 16.0 (IQR = 20.0) among INs. Activities implementing EBP were performed between zero and three times during the 8 weeks prior to answering the questionnaire (Table 3). However, overall scores ranged from 0–62, reflecting heterogeneity among respondents.

For both groups, "I accessed the Cochrane database of systematic reviews" (item 12) ($M = 0.24$, $SD = 0.7$) and "I generated a PICO question about my clinical practice" (item 3) ($M = 0.37$, $SD = 0.8$) scored lowest. On the other hand, "I collected data on a patient problem" (item 5) ($M = 2.35$, $SD = 1.4$) and "I evaluated the outcomes of a practice change" (item 7) ($M = 1.47$, $SD = 1.4$) showed elevated average scores in comparison with other implementation activities.

The internal reliability of the EBP Implantation Scale also showed an excellent Cronbach's α score of .92 (Cohen, 1992; Waltz et al., 2016).

No statistically significant difference was observed between sociodemographic and professional characteristics and either the EBP Beliefs Scale scores or the EBP Implementation Scale scores. However, positive associations were found between "had heard about EBP" and the EPB Implementation Scale score, $\rho(100) = .32$, $p < .00$. Similar findings were found between "how participants had heard about EBP" and EBP Beliefs Scale scores, $\rho(100) = .39$, $p = .002$, and EBP Implementation Scale scores, $\rho(100) = .28$, $p = .026$.

3.5 | Relationship between the EBP Beliefs and Implementation Scale Scores

A positive correlation was observed between the EBP Beliefs Scale and the EBP Implementation Scale ($\rho = .764$, $p < .001$), which indicated—as hypothesised before—that the higher nurses scored the EBP Beliefs Scale, the higher they reported EBP implementation.

4 | DISCUSSION

Our findings indicate, as have other studies considering EBP, that respondents believed in the value of EBP for clinical care, even though their implementation of it in daily practice could be improved (Baird & Miller, 2015; Breimaier et al., 2011; Gerrish & Cooke, 2013; Thorsteinsson, 2013).

The sociodemographic and professional profiles of the respondents in this study were comparable to those in previous studies

TABLE 2 Mean and median of total and item scores of the EBP Beliefs Scale ($n = 100$)

Items EBP Beliefs scale	Total sample ($n = 100$)		CHC nurses ($n = 86$)		Independent nurses ($n = 14$)	
	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)
Total score	54.0 (59.0)	53.11 (7.9)	53.4 (58.8)	52.85 (8.1)	57.0 (59.0)	54.71 (6.2)
1 I believe that EBP results in the best clinical care for patients	4.0 (4.0)	3.82 (0.7)	4.0 (4.0)	3.76 (0.7)	4.0 (4.0)	4.14 (0.4)
2 I am clear about the steps of EBP	3.0 (4.0)	2.75 (1.1)	3.0 (4.0)	2.73 (1.1)	3.0 (4.0)	2.86 (1.1)
3 I am sure that I can implement EBP	4.0 (4.0)	3.42 (0.8)	4.0 (4.0)	3.43 (0.8)	4.0 (4.0)	3.36 (0.9)
4 I believe that critically appraising evidence is an important step in the EBP process	4.0 (4.0)	3.92 (0.8)	4.0 (4.0)	3.89 (0.8)	4.0 (4.3)	4.07 (0.6)
5 I am sure that evidence-based guidelines can improve clinical care	4.0 (4.0)	4.05 (0.7)	4.0 (4.0)	4.02 (0.8)	5.0 (5.0)	4.21 (0.6)
6 I believe that I can search for the best evidence to answer clinical questions in a time-efficient way	4.0 (4.0)	3.34 (0.9)	4.0 (4.0)	3.43 (0.9)	3.0 (4.0)	2.79 (1.0)
7 I believe that I can overcome barriers to implementing EBP	3.5 (4.0)	3.36 (0.8)	3.0 (4.0)	3.40 (0.8)	3.5 (4.0)	3.07 (1.1)
8 I am sure that I can implement EBP in a time-efficient way	3.0 (4.0)	3.22 (0.9)	3.0 (4.0)	3.26 (0.9)	3.5 (4.0)	3.00 (1.2)
9 I am sure that implementing EBP will improve the care that I deliver to my patients	4.0 (4.0)	3.80 (0.8)	4.0 (4.0)	3.77 (0.9)	4.0 (4.0)	4.00 (0.6)
10 I am sure about how to measure the outcomes of clinical care	3.0 (4.0)	3.13 (1.0)	3.0 (4.0)	3.10 (1.0)	3.5 (4.0)	3.36 (0.9)
11 I believe that EBP takes too much time (reverse scored)	3.0 (4.0)	2.89 (1.0)	3.0 (4.0)	2.84 (1.0)	3.0 (4.0)	3.21 (1.1)
12 I am sure that I can access the best resources in order to implement EBP	3.0 (4.0)	2.94 (0.9)	3.0 (4.0)	2.93 (0.9)	3.0 (4.0)	3.00 (1.2)
13 I believe EBP is difficult (reverse scored)	3.0 (4.0)	2.86 (1.0)	3.0 (4.0)	2.82 (1.0)	3.0 (4.0)	3.07 (0.8)
14 I know how to implement EBP sufficiently well to make practice changes	3.0 (3.0)	2.75 (1.0)	3.0 (3.0)	2.71 (0.9)	3.0 (4.0)	3.00 (1.0)
15 I am confident about my ability to implement EBP where I work	4.0 (4.0)	3.35 (1.1)	4.0 (4.0)	3.31 (1.1)	4.0 (4.0)	3.64 (0.7)
16 I believe the care that I deliver is evidence-based	4.0 (4.0)	3.52 (1.0)	4.0 (4.0)	3.45 (1.1)	4.0 (4.0)	3.93 (0.7)

CHC, community healthcare centre; EBP, evidence-based practice; IQR, interquartile range—75th percentile; SD, standard deviation.

exploring beliefs about EBP and its implementation in community healthcare settings (Baird & Miller, 2015; Gomes Pereira et al., 2012) and similar to the sample recruited in the canton Valais' regional acute healthcare system survey (Verloo et al., 2016). Almost one-third of respondents had never previously heard about EBP, which was higher than in past studies in Europe (Stokke et al., 2014; Verloo et al., 2016). Nevertheless, these kinds of data are seldom emphasised in study findings, particularly in North American studies.

In this study, the median total score for the EBP Beliefs Scale demonstrated positive beliefs about EBP's value. Although, most nurses believed that "evidence-based guidelines can improve clinical care," they were unable to express enough knowledge about how to use it. INs were more positive about the importance of using EBP to provide the "best clinical care for patients" than were nurses in CHCs, but those same INs seemed less confident about being able to "search for the best evidence to answer clinical questions in a time-efficient way." Unlike previous studies, a lack of time did not

seem to be a barrier to the implementation of EBP (Mallion & Brooke, 2016). Consequently, and in agreement with other authors' outcomes, there is a need to improve nurses' in-depth understanding of EBP and the benefits of clinical research (Majid et al., 2011; Mallion & Brooke, 2016; Stokke et al., 2014). Despite positive beliefs about the value of EBP, the median total score on the EBP Implementation Scale was moderate to low in the present study. The scores revealed that most nurses do not formulate PICO questions or frequently access Cochrane scientific databases. They do not frequently use "evidence to change their clinical practice." This inconsistency has been documented in previous studies of community and acute healthcare settings (Berland et al., 2012; Mallion & Brooke, 2016; Stokke et al., 2014; Verloo et al., 2016). Also, as in previous studies, the wide range of answers showed the heterogeneity of participants' skills and competencies in implementing EBP in their daily practice (Friesen-Storms, Moser, Loo, Beurskens, & Bours, 2015). However, even though some of the present study's participants had

TABLE 3 Mean and median of total and items scores of the EBP Implementation Scale ($n = 100$)

Items EBP Implementation scale	Total sample ($n = 100$)		CHC nurses ($n = 86$)		Independent nurses ($n = 14$)	
	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)
Total score	12.0 (19.2)	13.51 (11.6)	9.0 (17.0)	13.03 (11.4)	16.0 (20.0)	16.47 (12.2)
1 I used evidence to change my clinical practice	0.0 (1.0)	0.84 (1.1)	0.0 (1.0)	0.77 (1.0)	1.0 (3.0)	1.21 (1.4)
2 I critically appraised a clinical research study	0.0 (1.0)	0.51 (0.8)	0.0 (1.0)	0.49 (0.8)	1.0 (1.0)	0.68 (0.8)
3 I generated a PICO question about my clinical practice	0.0 (0.0)	0.37 (0.8)	0.0 (0.0)	0.37 (0.8)	0.0 (1.0)	0.38 (0.7)
4 I informally discussed evidence	1.0 (1.0)	0.83 (0.9)	1.0 (1.0)	0.78 (0.9)	1.0 (2.0)	1.14 (1.1)
5 I collected data on a patient problem	2.0 (4.0)	2.35 (1.4)	2.0 (4.0)	2.43 (1.5)	1.0 (4.0)	1.86 (1.3)
6 I shared evidence from a study in the form of a report/presentation to >2 colleagues	0.0 (1.0)	0.44 (0.9)	0.0 (0.0)	0.49 (0.9)	0.0 (0.0)	0.14 (0.4)
7 I evaluated the outcomes of a practice change	1.0 (2.0)	1.47 (1.4)	1.0 (2.0)	1.44 (1.4)	2.0 (2.0)	1.64 (1.2)
8 I shared an EBP guideline with a colleague	0.0 (1.0)	0.74 (1.0)	0.0 (1.0)	0.66 (0.9)	2.0 (2.0)	1.20 (1.4)
9 I shared evidence from a research study with a patient/family member	0.0 (1.0)	0.54 (0.9)	0.0 (1.0)	0.47 (0.8)	1.0 (1.0)	1.00 (1.2)
10 I shared evidence from a research study with a multidisciplinary team member	0.0 (1.0)	0.64 (1.0)	0.0 (1.0)	0.55 (0.8)	1.0 (2.0)	1.21 (1.4)
11 I read and critically appraised a clinical research study	0.0 (1.0)	0.68 (1.1)	0.0 (1.0)	0.59 (1.0)	1.0 (1.0)	1.29 (1.5)
12 I accessed the Cochrane database of systematic reviews	0.0 (0.0)	0.24 (0.7)	0.0 (0.0)	0.22 (0.7)	0.0 (1.0)	0.36 (0.5)
13 I used an EBP guideline/systematic review to change clinical practice where I work	0.0 (1.0)	0.48 (0.8)	0.0 (1.0)	0.42 (0.8)	1.0 (1.0)	0.79 (1.1)
14 I evaluated a care initiative by collecting patient outcome data	0.0 (1.0)	0.87 (1.2)	0.0 (1.0)	0.87 (1.2)	1.0 (1.0)	0.86 (0.9)
15 I shared the outcome data collected with colleagues	1.0 (1.0)	0.96 (1.2)	0.0 (1.0)	1.00 (1.2)	0.0 (1.0)	0.71 (1.1)
16 I changed practice based on patient outcome data	1.0 (2.0)	1.16 (1.2)	0.0 (2.0)	1.12 (1.3)	1.0 (2.0)	1.43 (1.2)
17 I promoted the use of EBP to my colleagues	0.0 (1.0)	0.41 (0.8)	0.0 (1.0)	0.39 (0.7)	0.0 (0.0)	0.57 (1.3)

CHC, community healthcare centre; EBP, evidence-based practice; IQR, interquartile range—75th percentile; SD, standard deviation.

never heard of EBP, they nevertheless integrated components of EBP, such as patient preferences or clinical expertise, into their practice (Melnyk & Fineout-Overholt, 2015).

The present study's results also revealed that nurses' EBP Belief Scale scores were associated with their EBP Implementation Scale scores, confirming the hypothesis developed in the ARCC model (Melnyk & Fineout-Overholt, 2015). This finding was consistent with those reported in other studies (Stokke et al., 2014; Thorsteinsson, 2013; Underhill et al., 2015).

No significant associations were discovered between the total EBP Beliefs and Implementation Scale scores and participants' sociodemographic and professional characteristics. This was in opposition to the findings of earlier authors (Baird & Miller, 2015; Majid et al., 2011; Melnyk, 2012; Stokke et al., 2014; Underhill et al., 2015) who associated levels of EBP implementation with nurses' educational levels, professional roles and years of experience. Indeed, in North America, perhaps because it has been a part of nursing curricula for many years, more experienced nurses report the best knowledge and implementation of EBP (Baird & Miller, 2015; Brown et al., 2010; Majid et al., 2011). In Europe, on the other hand,

with the more recent integration of EBP into nursing training programmes, it is younger graduates who have reported the best knowledge and implementation in daily practice (Stokke et al., 2014; Thorsteinsson, 2013; Verloo et al., 2016). This was also confirmed in a systematic review of EBP implementation in community healthcare settings in Europe by González-Torrente et al. (2012). It showed that recently graduated bachelor's degree-level nurses scored higher on the implementation of EBP during daily practice than did more experienced nurses. However, the limited number of bachelor's degree-level graduates in the sample, and a lone nurse with a master's degree, makes any association difficult. Considering respondents' modest use of EBP, training and mentoring should help to improve levels of implementation of EBP in community healthcare settings.

A formal introduction to EBP in nurses' training curricula, as well as the systematic integration of EBP into daily clinical practice, would significantly boost both beliefs about the approach and its implementation (Cullen, Wagner, Matthews, & Farrington, 2017; Hanrahan et al., 2015; Schaffer, Sandau, & Diedrick, 2013; Smith & Donze, 2010; Warren, Montgomery, & Friedmann, 2016). Pérez-Campos, Sánchez-García, and Pancorbo-Hidalgo (2014) also stated

that nurses who considered and critically appraised at least one scientific article a month increased their ability to implement EBP in their daily clinical practice. Surprisingly, however, even after EBP training interventions, several other authors (Ramos-Morcillo, Fernández-Salazar, Ruzafa-Martínez, & Del-Pino-Casado, 2015; Toole, Stichler, Ecoff, & Kath, 2013; Underhill et al., 2015) found no substantial progress in improving levels of the implementation of EBP in clinical practice. However, Hauck, Winsett, and Kuric (2013), as well as Wallen et al. (2010), did manage to develop effective progress in the implementation of EBP by associating an EBP training intervention with a mentoring programme. Different authors have recommended that more experienced nurses should guide frontline nurses through the clinical methods involved in the EBP process (Gerrish et al., 2011; Profetto-McGrath, Negrin, Hugo, & Smith, 2010). Other authors (Baird & Miller, 2015; Gerrish & Cooke, 2013) have demonstrated that a culture of promoting change, along with support from managers and colleagues, facilitated the implementation of EBP in community healthcare settings. These findings were consistent with Melnyk et al.'s numerous research activities highlighting the importance of implementation programmes involving multiple components, including a mentoring element (Melnyk, 2011; Melnyk, Fineout-Overholt, Gallagher-Ford, & Stillwell, 2011; Melnyk & Gallagher-Ford, 2015). Undoubtedly, more in-depth research will be required to better understand the facilitators and barriers to the implementation of EBP in daily practice in community health care.

Finally, a tailored, user-friendly implementation strategy for EBP should be considered to increase its successful integration into daily clinical practice (Schaffer et al., 2013; Smith & Donze, 2010).

As with previous surveys examining beliefs about EBP and its implementation, this cross-sectional study has both strengths and limitations. To the best of our knowledge, this is the first study to describe beliefs about EBP and its implementation by community health nurses working in CHCs or as INs in Switzerland. This investigation could be considered a milestone in regional EBP research activities in the country, and it corroborates Mallion and Brooke's paper suggesting that few studies have so far explored beliefs about EBP and its implementation by nurses in a community healthcare environment (Mallion & Brooke, 2016).

However, making any broad statements about and interpretations of the present findings should be done with caution, for reasons concerning both methodology and sampling. This study did not explore the way in which community health nurses had heard about EBP and how this affected their beliefs and implementation. The survey was conducted in just one Swiss canton; results from similar studies in other Swiss cantons may differ. The present study's response rate (32%) was lower than in the other scarce studies conducted in community healthcare contexts (Baird & Miller, 2015; Gerrish & Cooke, 2013). However, Verloo et al. (2016) obtained a lower response rate (22.2%) among the nurses in canton Valais' regional acute healthcare system. There are also potential factors which may have affected the number of participants in our survey. The fact that the entire eligible population did not have the opportunity to participate in the survey compromised the response rate among the community health nurses

working in CHCs and the INs. Some nursing supervisors in participating CHCs failed to systematically distribute a hard copy of the questionnaire to each eligible participant. The terminology used in the EBP scales was not always fully understood by all nurses, especially those who had never heard about the concept. Indeed, 15 respondents wrote comments and complaints to the investigators about the incomprehensible terminology used in certain items. This lack of understanding resulted in incomplete questionnaires, unusable for analysis and in some nurses not participating at all. Additionally, other nurses were discouraged from responding at all because they had never heard of EBP. The sample data may thus have been skewed towards more positive responses because respondents were already interested in the subject. Finally, a second limitation involves the self-reported data provided by respondents. Some potential study participants may prefer email to a hard copy and vice versa. According to Kaplowitz, Hadlock, and Levine (2004), both methods achieve similar response rates. However, we hypothesise that community health nurses working in CHCs and INs preferred to fill in hard copies of the questionnaire, because the response rate was higher than in Valais' regional acute healthcare system email survey (Verloo et al., 2016). Whether the participation of eligible participants occurs via email or hard copy, whether questionnaires are administered by an investigator or self-administered, complete anonymity and confidentiality must be ensured. Future research should consider these potential obstacles and perhaps include a glossary of terminology to help explain both EBP scales.

In the present study, both the EBP Beliefs Scale and EBP Implementation Scale showed excellent reliability, with Cronbach's alphas close to the scores established by Melnyk et al.'s original versions.

5 | CONCLUSIONS

Community health nurses reported their positive beliefs about EBP, but most of them did not implement it in their daily clinical practice. It is therefore essential to develop training and mentoring strategies to promote a culture of EBP that ensures effective care, a safe clinical environment, stakeholder satisfaction and better use of available resources. Because community health care is becoming an ever more important part of modern healthcare systems, the implementation of EBP deserves further detailed investigation of communities' specific needs and expectations so that the most appropriate strategies can be developed for use in daily clinical practice.

6 | RELEVANCE TO CLINICAL PRACTICE

The present study's findings highlight the urgent need to raise awareness about EBP among the community health nurses, whether they work in community health centres or as INs. Their competencies and ability to integrate EBP into their daily clinical practice should be increased via empirical and scientific training, never forgetting their clinical expertise and patient preferences in specific community healthcare settings. Furthermore, it is crucial that

community healthcare systems around the world explore ways of empowering and supporting nurses in their attempts to implement EBP in their daily practice.

ACKNOWLEDGEMENTS

We thank the community healthcare centre nurses and independent nurses for their participation in this study. This work would not have been possible without the support of supervisors in the community healthcare centres in Valais. We are also immensely grateful to Jean-Marie Januel for his scientific guidance in an earlier version of the manuscript.

CONTRIBUTIONS

Study concept: FP, VP, HV; data collection: FP and VP; data analysis and interpretation: FP and HV; manuscript drafting: FP, VP and HV; statistical analysis: FP and HV; study supervision: FP, VP and HV; and all authors contributed to the writing of the manuscript.

CONFLICT OF INTEREST

None.

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How to cite this article: Pereira F, Pellaux V, Verloo H. Beliefs and implementation of evidence-based practice among community health nurses: A cross-sectional descriptive study. *J Clin Nurs*. 2018;00:1–10. <https://doi.org/10.1111/jocn.14348>