

The Impact of Nursing Leadership Training on Evidence-Based Leadership and Practice

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Abstract

Aim: To assess the impact of leadership training on nurse leaders' perceptions of evidence-based leadership (EBL) and practice (EBP).

Background: Nurse leaders are the key persons for promoting EBP. They have to use evidence skillfully both in practice and leadership.

Methods: 47 nurse leaders participated in EBL training (2010 – 2011) for the "At Safe" project. Data were collected from 42 leaders before the training and 34 after. The questionnaires were developed as part of the project. The data were analyzed using frequency analysis.

Results: Before the training most of the nurse leaders had the positive perceptions of using research knowledge to develop the practice and leadership. The training had helped nurse leaders to understand that decisions can be justified with research knowledge, which strengthened the leaders' responsibility to develop EBP, EBL and their work unit. Most of the nurse leaders seldom brought research publications for their staff to read or discussed findings with them.

Conclusions: Nurse leaders have a positive attitude to EBP and EBL but they need to more promote it to their staff and use it for their own leadership. The EBL courses might highlight the importance of using evidence in leadership, but changing their leadership style needs time and willingness. The nurse leaders should become aware of the importance of EBL and EBP. There is an urgent need for training and new innovations to support EBL.

Keywords: Evidence-Based Leadership; Evidence-Based Practice; Nurse Leaders; Web-Based survey, TrainingIntroductionEvidence-based practice (EBP) is a systematic approach to the use of the best research evidence applied to clinical expertise and patient values [1,2]. Evidence-based leadership (EBL) covers the best use of evidence to organize, guide, deliver, finance and improve the quality of care and patient safety [3]. Since the 1990s, there have been many discussions, guidelines and articles published all over the world about the importance of EBP [1,2,4-6]. The change from experience-based practice to EBP is going on and urgently needed; like the Institute of Medicine (IOM) [6] has set the goal that health care should be evidence-based in 2020. According to one American study, 53.6% (n=544) of nurses agreed or strongly agreed that EBP was implemented in their organizations [7] whilst another American study [8] found that 43% of the practicing nurses reported that 61 – 100% of their practice was evidence-based. A Norwegian study [9] showed that the nurses used more experience-based knowledge than research evidence in practice. The Finnish National Programs since 2004 have recommended developing evidence-based health care [4,5]. The Finnish Health Care Act says "The provision of health care shall be based on evidence and recognized treatment and operational practices.

The health care provided shall be of high quality, safe and appropriately organized." [10]. There are no Finnish studies showing what proportion of practice is evidence-based. Nurse leaders are central to developing evidence-based nursing practice [3,7,8,11-15] because they create a culture of evidence-based practice and have the responsibility of designing and supporting nursing environments that promote the high quality of care, based on the best available evidence [7,11,16,17]. Nurse leaders themselves need to be able to use scientific evidence and embrace continuous learning [3,8]. Leadership is a key element in developing EBP in health care organizations [8,11, 18-21]. Porter-O'Grady and Malloch (2008) [22] wrote the implementation of EBP is in progress. The nurse leaders need be skillful at evidence-based leadership and practice in order to spearhead the change from experience-based to evidence-based practice. The key skills of leaders trying to advance EBP are innovative thinking, planning and implementation of the change [22]. Leaders have to be able to change continuously. The application and integration of evidence-based principles into nursing leadership is a complex process, itself part of a complex system. The process needs the passion, respect and knowledge of nursing science [14,21,22]. Support from nurse leaders is vital to the promotion of EBP. Research by Eneh et al. [23] about the

transformational leadership style of Finnish nurse leaders (nurse managers, nursing directors) asked from the nursing staff (n=1497) showed that Finnish nursing directors appeared not to use evidence-based knowledge at all, whilst 50% of nursing staff had no perception if their nurse directors' used it. Many nurse leaders perceive EBP as being desirable, but they do not know how they might implement it [16]. Marshall [24] highlighted the nurse leaders' slow pace of application of EBP in their work. There are still many ineffective routines in nursing practice and leadership. There have been many different programs to develop leadership generally, or from specific views, such as empowerment of nurse leaders [19,25], effects of education on evidence-based practice courses [20], development and evaluation of a joint academic-service nursing journal club [3] and an advanced educational program promoting evidence-based practice [21]. This study introduces one Finnish evidence-based nursing leadership training program. Nurse leaders who carry out evidence-based practice appreciate the expertise of other evidence-based professionals. For example, the collaboration between nurse leaders and librarians is an important way of promoting the EBP process. Innovative nurse leaders understand this and so collaborate with the librarians, using their expertise of searching for useful research papers and articles [19,26]. Many studies underline the use of mentors implementing EBP [7,8,13,27,28]. Johansson et al. [20] found that head nurses who had additional education in scientific methodology utilized more research findings than those who lacked that additional education. About half of them (n=99) searched, read and discussed research results with their colleagues. They encouraged their staff to read research findings, but their staff did not have enough time to find relevant research and read the results [20]. The Finnish Health Care Act expanded the choice of public institution where someone could receive treatment [10]. The choice increases demands on organizations because people would expect to receive care based on the best available evidence. Therefore, it is most important to educate nurse leaders about EBP and EBL. Apart from the training, the willingness of nurse leaders to adopt EBP has been seen to be important in the change process [19].

Aim

To assess the impact of leadership training on nurse leaders' perceptions of evidence-based leadership and practice.

- What are nurse leaders' perceptions of evidence-based leadership and practice before the training?
- What are nurse leaders' perceptions of evidence-based leadership and practice after the training?

Materials and methods

Study design

The study was a longitudinal descriptive intervention study. The intervention was the evidence-based nursing leadership (EBNL) training course (Figure 1).

EBNL training for nurse leaders

EBNL training was carried out between September 2010 and May 2011 (Figure 1). The training was organized by Kuopio University Hospital (KUH), Department of Nursing Science, University of the Eastern Finland (UEF) and "The Attractive and Health-promoting Healthcare - At Safe" project. A total of 47 voluntary nurse leaders

from Kuopio University Hospital, Northern Savo Hospital District and Central Finland Health Care District started the course and 43 completed it and other four dropouts were mostly because of lack of time for the training.

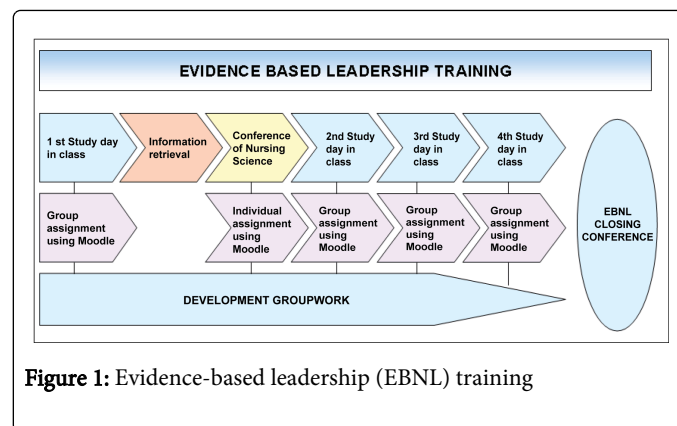


Figure 1: Evidence-based leadership (EBNL) training

The goals of the EBNL training were:

1. To increase nurse leaders' knowledge of EBL and EBP.
2. To help nurse leaders identify their role as a leader of EBP and as a promoter of EBP.
3. To train nurse leaders to find research information from different databases and evaluate evidence critically.
4. To increase nurse leaders' knowledge in developing and implementing effective, integrated and evidence-based best practices and procedures for their units.

The EBNL training package included four teaching days and an EBNL closing conference day. Furthermore, there was training in information retrieval by a librarian (Ovaska 2012). This course gave students information literacy skills training, necessary for the successful implementation of EBP and EBL and also for continuing professional development.

The teaching days' topics were 1) Leadership of evidence-based practice; 2) The leader as a promoter of work well-being; 3) Challenges and opportunities of leadership and 4) Patient satisfaction and patient safety. The training course included attending the national conference of nursing science in autumn 2010.

Between the teaching days, students carried out assignments on the topics taught and the group development programs, using the Moodle (Modular **Object-Oriented Dynamic Learning Environment**) e-learning environment which is a **free software e-learning** platform [29].

The students selected three of the most interesting themes suggested to them when they applied for the course. The themes were mostly drawn from the results of the At Safe Project, e.g. Eneh et al. [23] and Kvist et al. [30]. They were health promotion, rewarding and feedback, human resource planning and evaluation, patient safety, the management of expertise, change management and well-being at work. Participants carried out their development assignments (Figure 2) in groups assigned in accordance with the themes. Each group consisted of three to six nurse leaders who had similar interests. Every group had a mentor. All the mentors had a Master or Doctoral Degree and worked in KUH or in the department of Nursing Science in UEF.

The Development Program Topics

- The Management of health promotion in primary health care - case one municipality
- How the nurse leaders can reward their staff?
- The development discussion as a knowledge management tool
- Handling the conflicts between nursing staff
- The factors that contribute well-being of the nursing manager
- Implementation of evidence-based knowledge in nursing practice
- The nurse manager's role in staff commitment to change management
- The outcome figures in the designing and evaluating of nurse staffing
- Use of evidence-based information to reducing medication errors and the development of management practices to promote patient safety

Figure 2: The Development Program Topics

Data collection and participants

Before the EBNL training started, data were collected from 47 nurse leaders with 42 of them responding (89%) in autumn 2010. After completing the training, data were collected from 41 nurse leaders, who had given the permission to send the questionnaire at the beginning of the training, with 34 of them (83%) responding in spring 2011. Web-based surveys were used for data collection. Two weeks after requesting responses from either survey, a reminder e-mail was sent.

Instruments and their reliability

The instruments were developed at the At Safe project and were based on literature reviews, expert panels and pilot studies.

The questionnaire used before the EBNL training covered two areas: "current own leadership work" (26 items) and "use of evidence in own leadership work and promoting EBP" (15 items). In addition, there were 14 background variables. In this article, we report the results in the area "use of evidence in own leadership work and promoting EBP". The area "current own leadership work" was omitted because the items of it were concerning general leadership issues. The items used a four point scale (totally disagree, partly disagree, partly agree and totally agree). The reliability of this area was good, having a measured Cronbach's α value of 0.82 [31].

The questionnaire used after the EBNL training had 53 items concerning EBL and EBP which covered 7 areas:

- Impact of training on the nurse leaders' perceptions of EBL and EBP (6 items)
- Responsibility of nurse leaders (9 items)

- Development of EBP (7 items)
- Motivating the staff to reach common goals and participate (7 items)
- Confirming the use of research knowledge (7 items)
- Leadership in development of staff (8 items)
- Evaluation of own development as an evidence-based leader during training (8 items)

Eight background variables described the respondents. Three open-ended questions were included in the survey.

In this article, we report the results from areas 1, 2, 5 and 7. These areas are concentrated in evidence-based practice and leadership and the others more on general leadership. The items used a four point scale (totally disagree, partly disagree, agree, totally agree). The reliability of each was considered to be good as measured by Cronbach's α values (0.88 – 0.91).

Data analysis

The data were analyzed using descriptive statistics and SPSS version 17.0 for Windows (SPSS inc., Chicago, IL, USA).

The responses to Likert-scale items were categorized in three groups because of the exiguous size of the totally disagree group. The groups were in before survey: 1 Disagree = totally or partly disagree, 2 Partly agree = partly agree and 3 Totally agree = totally agree and after survey: 1 Disagree = totally or partly disagree, 2 Agree = Agree and 3 Totally agree = totally agree.

Ethical considerations

Following the organization codes, the chief nursing officer of the university hospital gave permission for the surveys to be conducted. Participation was voluntary and anonymous. The web-based survey was sent to the participants of the training who had given written permission to be sent a survey before starting the course and at the end of the course.

Results

Demographic characteristics of nurse leaders

All respondents were women. In the survey before the training, the mean age of nurse leaders was 47 years (range 30 – 59 years); after the survey, it was 48 years (34 – 59 years). Most of them worked in specialized health care (2010: 69%; 2011: 68%) and nearly half of them at the university hospital (50%, 47%). Before and after the course, they mostly worked as nurse managers (71%, 76%). Most of them (79%, 90%) were in charge of between 0 and 49 staff. About 40% of them had a university degree. Most of the nurse leaders (78%, 88%) had under 10 years working experience in their current job but had a total work experience in health care of over 10 years (90%, 91%) (Table 1).

Nurse leaders' perceptions of EBL and EBP before the training

The majority (62%) had the positive perceptions towards developing nursing using research knowledge. 41% of them felt that the staff in their units did not know what EBP is. 5% totally agreed and 69% partly agreed that the patient care in their units was evidence-based. Nearly half (45%) of nurse leaders appreciated the development

of EBP as an important part of their leadership style. Most of the nurse leaders (88%) disagreed that their staff had sufficient time at their work to read research from their own disciplines. 29% of nurse leaders did not encourage their staff to explore the latest research in their own area. Many nurse leaders (50%) felt that they were not able to make EBP possible for their staff to perform by giving time to search for evidence. 38% disagreed that when choosing new staff, their research experience was not the first priority (Table 2).

Demographic variable	2010 (%)	2011 (%)
Age	n=42	n=34
30 – 39	19	12
40 – 49	38	41
50 – 59	43	47
Working health care sector	n=42	n=34
Specialized health care	69	68
Other	31	32
Organization	n=42	n=34
University hospital	50	47
Other	50	53
Work position	n=42	n=34
CNO	7	3
Nursing director	12	9
Nurse manager	71	76
Specialist, other	10	12
Number of staff	n=42	n=29
0 – 49	78	90
50 – 100	5	3
Over 100	5	7
None	12	
Highest educational qualification	n=42	n=34
University	40	41
University of applied sciences, nursing school	60	59
Working experience in current job	n=42	n=33
Under 10 years	78	88
10 – 20 years	17	9
Over 20 years	5	3
Working experience in health care	n=42	n=33
Under 10 years	10	9
10 – 20 years	50	35
Over 20 years	40	56

Table 1 : Demographics of nurse leaders in 2010 (N=42) and 2011 (N=34)

Nurse leaders' perceptions of EBL and EBP after training

Most of the nurse leaders (59%) totally agreed that the EBL training had helped them to understand that decisions can be justified with research knowledge. 15% of nurse leaders totally agreed, 76% agreed and 9% disagreed that the training had developed their own EBL. 9%

of them disagreed that the training had improved their knowledge of EBL whereas 27% totally agreed (Table 3).

Item	Totally, partly disagree	Partly agree	Totally agree
I search for research evidence from publications in my own discipline. (n=42)	19	60	21
I use the research to develop my unit.(n=42)	29	52	19
The staff of my unit knows what evidence-based practice is.(n = 42)	41	52	7
The patient care in my unit is evidence-based. (n = 42)	26	69	5
I use research knowledge to help my leadership work (n = 42)	17	69	14
Developing evidence-based practice is an essential part of my leadership practice. (n = 42)	19	62	19
I appreciate that evidence-based practice is an important part of my leadership style. (n=42)	7	48	45
I understand about developing nursing using research knowledge (n = 42)	0	38	62
I encourage my staff to explore the latest research in my own area. (n=42)	29	64	7
The staff in my unit have opportunities to participate in evidence-based nursing training. (n = 42)	17	64	19
The staff in my unit are interested in developing nursing using evidence-based knowledge. (n = 42)	33	62	5
I make it possible for my staff to develop evidence-based practice by giving time to search for evidence. (n = 42)	50	45	5
My staff have enough time at work to read about research in own discipline. (n=42)	88	12	0
When I select new staff members, it is important they have an interest in research. (n=42)	19	62	19
When I choose new staff members, it is important that they have research experience. (n=42)	38	55	7

Table 2 : Using EB knowledge in leadership and promoting EBP in their own unit (n=42) (%)

The nurse leaders recognized their responsibility to develop EBP and their working unit. Nurse leaders agreed that they had a responsibility to develop evidence-based practice and use evidence-based knowledge in their leadership. The responsibilities of planning the additional training of staff, developing professionalism and work orientation were not as clearly recognized (Table 4).

Item	Totally, partly disagree (%)	Agree (%)	Totally agree (%)

EBNL increased my knowledge about evidence-based practice. (n=34)	6	50	44
EBNL improved my knowledge about evidence-based leadership. (n=34)	9	64	27
EBNL developed my evidence-based leadership. (n=34)	9	76	15
EBNL promoted my understanding of how nursing has to be based on research knowledge. (n=34)	3	47	50
EBNL promoted my understanding of how evidence-based practice increases the quality of care. (n=34)	3	47	50
EBNL helped me to understand that decisions can be justified with research knowledge. (n=34)	3	38	59

Table 3 : Impact of training on the nurse leaders' perceptions of EBL and EBP (%).

Item	Totally, partly disagree (%)	Agree (%)	Totally agree (%)
Nurse leader is responsible			
for developing evidence-based practice. (n=34)	0	50	50
for developing a working unit. (n=34)	3	41	56
for planning the additional training of staff. (n=33)	12	46	42
for developing the professionalism of staff. (n=34)	9	59	32
for work orientation. (n=33)	9	42	49
for coordinating nursing practices. (n=34)	0	59	41
for developing multi-professional collaboration. (n=33)	3	61	36
for using evidence-based knowledge in their leadership. (n=33)	0	52	48
for making the staff participate in evidence-based practice. (n=34)	3	62	35

Table 4: The nurse leaders' responsibilities for changing the culture of EBP (%).

Most of the nurse leaders (64%) did not discuss scientific publications with their staff. One third of them did not provide the research knowledge available to staff. All (34% totally agreed and 66% agreed) of them connected their research knowledge to their previous experiences (Table 5).

Item	Totally, partly disagree (%)	Agree (%)	Totally agree (%)
I recognize the need for research knowledge about nursing in developing my own skills. (n=34)	6	68	26

I use research knowledge to develop my own professional skills. (n=34)	3	68	29
I have made my goals in leadership clear. (n=34)	9	76	5
I link research knowledge to my previous experience. (=32)	0	66	34
I will systematically use research knowledge to support my leadership work. (n=31)	7	74	19
I regularly bring research knowledge for my staff. (n=33)	33	55	12
I regularly discuss scientific publications with my staff. (n=33)	64	33	3

Table 5 : How nurse leaders felt about the use of research knowledge in leadership (%).

Own development during the training

Mostly, nurse leaders assessed that they had developed their skills of supporting the staff, setting an example in their working unit and developing collaboration (24 – 27% totally agreed). 12% of nurse leaders felt that they had not developed their skills in motivation towards common goals or using research knowledge (Table 6).

Item	Totally, partly disagree (%)	Agree (%)	Totally agree (%)
Training has developed my work as an evidence-based leader...			
supporting my staff (n=33)	6	70	24
using research knowledge (n=33)	12	61	27
setting an example in working unit (n=33)	9	64	27
making the staff participate. (n=33)	6	81	13
motivating to reach common goals. (n=33)	12	70	18
developing the skills of the staff. (n=33)	9	67	24
developing the practice. (n=33)	9	64	27
developing collaboration. (n=33)	9	67	24

Table 6 : How nurse leaders felt about their own development as an EB leader (%).

Discussion

Nurse leaders are conscious of the importance of EBL and EBP. They emphasize their responsibility to develop EBP and their working unit. On the other hand, according to these results, they do not encourage their staff enough to carry out EBP. Over 60% of nurse leaders assessed the care in their units to be evidence-based; the results reflect the same kind of situation as is present in America and in Norway, as evaluated by nurses [7,9]. Nurse leaders in this study felt that the research skills of new nurses are not the main priority when they choose new staff. It should be one of the main criterions, because if the staff have good research skills, they can develop their evidence-based work with high quality care as a result. It should be one of the most important priorities of nurse leaders to start to understand the power of evidence-based practice.

Though the mean age of nurse leaders was quite high (47 years), it is possible that they have had little education in EBP: it might still be quite a new issue for them. On the other hand, nearly half of them had a university degree. It is worth asking what they have learnt about EBL and EBP at university and how they are implementing the knowledge of EBL and EBP. Melnyk et al. [7] criticized the contents of EBP teaching at universities, saying that they might be considered old-fashioned; this may be the case in Finland.

The goal of EBNL training was to increase the knowledge of EBL and EBP and to emphasize the role of nurse leaders in promoting EBL and EBP. The nurse leaders were satisfied with EBL, thus agreeing with the results from Johansson et al. [20], who reported that head nurses had a positive attitude towards EBP. Despite that assessment, there were many critical points which need to be discussed. Only a few of the nurse leaders felt that the training had improved their knowledge or developed their EBL. There might be different reasons for these evaluations. The training took place over two terms, so it was too short time to effect a change. Of course, there were critics of the training, though mostly the training was seen as being of good quality. So, was the training what they expected? Every fourth nurse leader felt that it did not cover certain areas of EBP or EBL and spent too long on others. In future, the contents of the courses need to be analyzed carefully beforehand.

The nurse leaders understood their responsibilities to change to a culture of EBP. Some of the nurse leaders did not recognize that they had responsibility to plan additional training or help develop the professionalism of their staff. If these issues are not on the agenda of the nurse leaders, EBP may end up not being implemented as soon as expected.

There were only a few nurse leaders who made research knowledge available to, or discussed scientific publications with their staff. The first step to develop evidence-based nursing is to make the most recent research knowledge available. There could be journal clubs in units, divisions and hospitals, which would be potential ways to learn about research. The results tell us that there were nurse leaders who had felt that the course had not developed them as a user of research knowledge. This is surprising since everyone on the course had the opportunity to learn about searching for research knowledge, though it is only a one part of the use of research. The librarians were involved in the training as educators and their role was highly appreciated [26].

Every group had an advanced mentor to supervise their development work. According to earlier studies [7,8,13,27,28], mentors play an important role in the implementation of EBP. However, in this study, the results of one open-ended question (not reported) suggested that their role was confusing due to the variability in the quality of the mentoring mostly because of the lack of reserved time for it.

However, the results show us that there is good progress in Finnish nursing. The nurse leaders support EBL, but they need more training and support for their work which will allow them to implement EBP in nursing.

Reliability

The reliability of the instrument has been studied for both surveys. Both instruments had good reliability as measured by Cronbach's value. The response rates were high (89% and 83%), but the sample

sizes were small, so any generalization of the results, even for research organizations, needs to be made very carefully.

Limitations

The small sample sizes are due to the size of the training course. The small sample sizes meant that only the results of the descriptive analyses were reasonable to report here. The two surveys were carried out using two different survey questionnaires. This was an outcome of the inadequate planning of this project. Therefore, the results are not comparable, but still they give a unique overview of the stage of the study phenomenon.

Conclusions

The nurse leaders have a positive attitude towards EBP and EBL but they have to do more to promote it in their units and through their own leadership. EBL courses might raise awareness of the importance of using evidence in leadership, but the change in leadership style needs time and passion. More work has to be done so that EBP and EBNL can be implemented in leadership practice and, through that, applied to clinical nursing practice.

Conflict of interest

No conflict of interest

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