JNPD Journal for Nurses in Professional Development • Volume 33, Number 6, 281–286 • Copyright © 2017 Wolters Kluwer Health, Inc. All rights reserved.

Evaluating Continuing Nursing Education

CE 1.5 ANCC Contact Hours

A Qualitative Study of Intention to Change Practice and Perceived Barriers to Knowledge Translation

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Evaluating the effectiveness of continuing nursing education does not always include behavioral change and patient health outcomes. A qualitative analysis of open-ended evaluation questions from continuing nursing education activities was conducted. The aim was to evaluate learners' intentions to change their practice resulting from their learning and their perceived barriers to implementing practice changes. Results revealed the multiple, interconnected challenges involved in translating new learning into practice.

Continuing nursing education and the application of new knowledge to practice are increasingly important means to improve patient care in today's health environment. The willingness and ability to transfer knowledge, skills, and attitudes are critical to improving patient outcomes (Ellis & Nolan, 2005; Su & Osisek, 2011). The purpose of this study was to evaluate learners' intentions to change their practice as a result of new learning and their perceived barriers to learning implementation. A measure of the effectiveness of Kirkpatrick's (2006) Evaluation Model Levels 3 and 4 was also undertaken.

The effectiveness of continuing education for nurses to patients' health outcomes needs to be more fully analyzed (Nolan, Owen, Curran, & Venables, 2000; Sinclair, Kable, Levett-Jones, & Booth, 2016). Continuing professional development provides a means of engaging nurses in learning activities, which have the potential to improve patient care (Hallin & Danielson, 2008; Katsikitis et al., 2013). The evaluation of continuing nursing education is an integral part of improving the quality of educational activities. This evaluation determines if nurses meet the desired learning outcomes and provides feedback on ways to improve the educational experiences that ultimately improve patient care. However, evaluation is sometimes limited to satisfaction with the activity and whether learning took place. Using the four-level Kirkpatrick Model of Evaluation (Kirkpatrick, 2006) to measure the effectiveness of an educational program, this represents only the first two levels: reaction and learning. The opportunity exists to evaluate the higher levels concerning change in behavior and results or outcomes.

In 2015, a provider of continuing professional development for nurses and midwives in Australia reviewed the evaluation tool used for seminar learning activities. It was noted that information collected through this tool was reliant on participants' satisfaction with the event and whether they considered they had acquired relevant learning. Recognizing the significance of refocusing education on patient outcomes (American Nurses Credentialing Center, 2014) and to capture more meaningful data, the existing evaluation tool was revised to align with Kirkpatrick's (2006) Model of Evaluation, Levels 3 (Behavior) and 4 (Results). The revisions were predictive and designed to capture learners' intent to change practice and their perceived anticipated benefits to patient care resulting from the education.

Intention is identified as a predictor of changed behavior. In his theory of planned behavior, Ajzen (2005) posits the notion that individuals rationally and carefully process information before making intentional decisions. A systematic review by Godin, Bélanger-Gravel, Eccles, and Grimshaw (2008) found intention to be one of two types of variables, the other being capabilities, that indicated that health professionals make intentional choices as part of their professional behavior. Statements of intention can be a reliable "but not a perfect" link to behavior in the real world (Eccles et al., 2006, p. 2) and therefore could offer a close measure for Kirkpatrick's

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The authors declare no conflicts of interest in the manuscript, including financial, consultant, institutional or other relationships that might lead to bias or a conflict of interest.

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DOI: 10.1097/NND.0000000000000395

(2006) Model of Evaluation Level 3. Consequently, it was anticipated that improvements for the seminar programs could be better identified from this type of data.

Appleby, Roskel, and Daly (2015) identified that the ability to carry out an intention may be affected by the extent of the learners' perceived control of their intentions and outcomes. As described by Ajzen (2005), intention is a precursor of behavior and is affected by variables such as attitude and perceived social pressures, and learners may not be able to carry out the intended behavior. Sinclair et al. (2016) and Ellis and Nolan (2005) consider that the key determinant for successful continuing education in nursing is the practice setting, whereas Ignatavicius and Chung (2016) found that lack of resources (e.g., workload, time, abilities of other, and finance) and other staff was strongly identified as a primary barrier to making desired changes. These concepts have also been identified in other studies where the behavior in, and the environment of, the practice setting may determine outcome (Appleby et al., 2015).

The provider of the continuing education was cognizant of limitations in carrying out extensive and repeated chronological follow-up assessments of the learning, which are a feature of Kirkpatrick's (2006) model, and looked to a means for quality assurance that could be carried out at a point of contact with learners. The existing evaluation tool was therefore reduced in size and revised to include open-ended questions. These questions became the primary source of data and fostered reflection by the learners, assisting them at the same time to envisage how they would change or apply their learning to future practice. The specific questions posed were the following:

1. What one change will you make in your practice as a result of what you have learned in the program?
2. How will your patients benefit from what you have learned?
3. What barriers do you think might make it difficult for you to implement what you have learned?

After application of the revised evaluation tool over several months, an analysis was undertaken to examine the data obtained from the evaluations returned by participants. The aims of this analysis were to:

- evaluate learners' intention to change practice;
- identify barriers preventing implementation of learning; and
- explore the use of Kirkpatrick's Evaluation Model Levels 3 and 4 to measure effectiveness of the continuing education.

METHOD

Participants

A variety of programs are offered for nurses and midwives in metropolitan and regional areas across Australia. Participants who attend these seminars work in settings ranging from rural and remote isolated practice to major tertiary city hospitals, residential and community aged care, domiciliary, and primary health care. The content of each seminar is specific to a topic (see Table 1) and generally presented by one or two educators.

Participant evaluations were paper-and-pencil surveys returned at the end of each seminar. Although completing the evaluation is not compulsory, participants are encouraged to provide feedback. They are also informed that the evaluation will assist them to reflect on their learning and for quality improvement purposes. The data were obtained from a random convenience sample of 61 continuing education seminars that were conducted by the provider between March and December 2016.

Data Analysis

Initially, responses from the evaluations were manually extracted verbatim and documented in a spreadsheet. This included information on the seminar topics and the location of participants. A qualitative approach was then used to analyze the data generated from the three open-ended questions included in the evaluation. A text analysis to identify themes was conducted using Leximancer. This software is a fully validated text mining package for "transforming lexical co-occurrence information from natural language into semantic patterns in an unsupervised manner" (Smith & Humphreys, 2006, p. 262). Leximancer has been used for analyzing nurse and clinician experiences of mental health services (Fanaian, Lewis, & Grenyer, 2013; Taua, Neville, & Scott, 2016), safety incident reporting systems (Travaglia, Westbrook, & Braithwaite, 2009), and others. It is used to analyze text-based documents, such as open-ended survey responses, and

TABLE 1 Seminar Categories and Number of Topics

Category of Seminars	Number of Seminars	Percentage of Total (*N* = 61)
Medical/surgical topics	23	38
Mental health topics	9	15
Cardiac/respiratory topics	8	13
Professional/leadership topics	7	12
Pharmacology	5	8
Aged care	5	8
Pediatrics	2	3
Maternal and child health	2	3
Total	61	100

display an overview of the extracted information in concept maps. These maps denote the main themes and concepts within a segment of text and the interrelationships between them. Each map displays large circles (themes) and smaller dots (concepts) and denotes relationships between the themes and concepts using the proximity of the themes and lines between the concepts. The smaller the distance between concepts, the higher likelihood of co-occurrences between the concepts within the qualitative data. The relevance of the concepts and themes is understood as those with the largest presence within the data set.

RESULTS

The seminar topics varied (see Table 1) and were repeated in different locations across the time frame. The largest number of topics presented (n = 22) was within the medical/surgical categorization and included subjects such as diabetes mellitus, wound management, neurological assessment, perioperative nursing, and trauma.

The 61 randomly selected seminars represented 46.6% of the 131 seminars conducted during the determined period. The number of participants who attended the seminar sample was 1,292, and of these, 78% (n = 1,003) returned evaluations totally or partially completed.

Most of the seminars in the sample (90%, n = 54) were conducted in the three most populous states of Australia and where the greatest numbers of nurses and midwives are located—New South Wales, Victoria, and Queensland (see Table 2). It is important to note that many nurses will travel to continuing education opportunities outside their proximate work and residential locations.

Of the 3,009 potential responses to the three open-ended questions, 165 (0.05%) were left blank. Two thirds (n = 108) of these missing responses related to the question concerning perceived barriers to implementation of learning. This highlighted a limitation in that a question about perceived facilitators was not included. However, the return and completion rate of evaluations showed that participants appeared willing to respond to open-ended questions. Furthermore, it reveals that nurses are willing to reflect on both their learning and its transfer to practice, write their intentions regarding changing their future practice behaviors, and provide feedback about the educational experience.

The qualitative analysis of the responses to the open-ended questions provided some interesting insight into the changes, patient benefits, and barriers to implementation that respondents perceived would occur as a result of their learning in the seminars. All the 1,003 evaluations were analyzed across the three open-ended questions of interest (see Table 3).

TABLE 2 Number of Sample Seminars Conducted and Participant Attendees per State[a]

State	Number of Seminars	Number of Participants
Queensland	25	584
New South Wales	16	315
Victoria	13	286
South Australia	4	59
Western Australia	2	35
Australian Capital Territory	1	13
Total	61	1,292

[a]Seminars were not conducted in the Northern Territory or Tasmania.

Changes to Practice

A qualitative analysis for the responses to "What one change will you make in your practice as a result of what you have learned in the program" generated the following major themes: patients, wound management, medications, health, and knowledge. The most common theme, patients, was aligned with concepts such as understanding, management, assessment, and better. This suggests that most changes that program participants will make are linked to improved patient care. For example, the comment from one participant "earlier assessment, better planning of palliative approach; better management of pain in resident who is not end of life" highlights these multiple thematic elements. Second, wound management was a common theme emerging, with concepts including education, information, care, and management. Medications also emerged as a theme that respondents would make changes as a result of their learning, with strong links to health, knowledge, management and documentation. This suggests that participants would change their practices related to medication management in their work because of what they learned in the program. Knowledge was also an important theme as it was closely related to patients, medications, and wounds. Knowledge of these areas, according to the participants, would have an impact on changes to their practice.

Patient Outcomes

The strongest theme to emerge from this analysis was the positive term *better*. The concepts assessment, outcomes, and understanding were also closely linked to this theme suggesting that the educational seminars had a perceived positive benefit to patients. For example, the comment "If I as a clinician have a better understanding of illness then I can assist my patient in a more clinically appropriate way" describes the context of this thematic analysis. This

TABLE 3 Description of Open-Ended Question Data Used for Qualitative Analysis

Open-Ended Questions	Number of Responses	Number of Words Analyzed
What one change will you make in your practice as a result of what you have learned in the program?	1,003	11,784
How will your patients benefit from what you have learned?	1,003	10,968
What barriers do you think might make it difficult for you to implement what you have learned?	1,003	8,540

theme was also linked to the other major themes care, patients, practice, treatment, and healing. The strongest interrelationship between themes was between better and care, highlighting the impact these educational seminars had on patient care in general. The theme knowledge was also strongly emergent with respondents noting that better knowledge would improve patient care. Other smaller, but notable, concepts emerging included confidence, medication, and care skills.

Of further interest, the concept hopeful also emerged to a lesser extent, which could suggest that some participants were indefinite that the learning will have benefits to patients because of other factors. For example, one participant commented, "Hopefully it will benefit my patients as I will be more aware in thinking about potential problems which may happen." This ties in with the following question related to barriers toward implementation, "How will your patients benefit from what you have learned?" (see Table 4 for counts and ranked concepts).

Implementation Barriers

The most common barriers to implementation that emerged from the thematic analysis were staff, time, work-related issues, and hospital procedures and policy. The major theme of staff was commonly linked with the concept of change, in that respondents reported difficulties in changing staff practices and staff culture. For example, one participant commented how "other staff and health care professionals <are> adamant or possibly unwilling to change their practice or thought processes." Some respondents focused on older members of staff or old ideas as being barriers to implementation. The theme of time also emerged as a key barrier to implementation. This was contextually linked to concepts of "sufficient time to engage with each patient" and "sufficient time to do the work."

TABLE 4 Top 10 Ranked Concepts From Each of the Open-Ended Questions

Word-Like	Count	Relevance
Changes to practice		
Patients	118	100%
Wound	60	51%
Assessment	56	47%
Care	50	42%
Better	48	41%
Staff	46	39%
Management	40	34%
Knowledge	37	31%
Aware	35	30%
Information	34	29%
Patient outcomes		
Better	218	100%
Care	149	68%
Knowledge	147	67%
Wound	108	50%
Understanding	99	45%
Patients	93	43%
Able	64	29%
Patient	58	27%
Increased	54	25%
Practice	54	25%
Implementation barriers		
Time	126	100%
Staff	116	92%
Change	80	63%
Hospital	61	48%
Work	58	46%
Management	55	44%
Doctors	43	34%
Care	41	33%
Practice	41	33%
Lack	40	32%

Hospital procedures and policy were also seen as barriers, in particular, to changing practices and presenting new ideas. This was also linked with the concept management.

The broad theme of work-related issues was linked to an array of concepts such as colleagues, practices, implementation, and information. This suggests that the many elements of a workplace are all interlinked as being barriers to implementing what was learned in the seminars. Although single individual elements were seen as barriers, the analysis showed that the combination of many of these elements were barriers toward implementing their newly gained knowledge.

The Leximancer analysis has described how many of the major themes and concepts were interrelated and connected to one another semantically. The smaller the distance between concepts, the higher likelihood of co-occurrences between the concepts. The relevance of the concepts and themes is understood as those with the largest presence within the data set (see Table 4). This text analysis adds an important analytical layer to the research in that the continuing nursing education seminars were having a positive impact not only on single themes but also on multiple interconnected areas of a nurse's work life.

DISCUSSION

Several new insights were learned from this analysis. The use of open-ended questions, focusing on Kirkpatrick's Level 3 and 4 evaluation levels, to review face-to-face continuing education assisted in improving the level of evaluation. This interaction also provided a rich source of information from participants about learning activities and their potential outcomes. This placed more emphasis on reflection and learner intention to positively change practice. These evaluation questions appeared to have functioned as a trigger to encourage learners to reflect on their practice and stretch their imagination forward by envisioning how their learning could benefit patients.

It is difficult to evaluate long-term nursing care outcomes that result from specific educational events (Wood, 1998), especially when the education is provided independently to the place of work. The value of analyzing evaluations from a semantic viewpoint, rather than measuring satisfaction scores, provided a deeper insight into nurses' intentions about how their learning could impact patient care and included factors that may influence this.

All three of the precursors to intention to change, namely, attitudes, the normal way others see the behavior, and perceived control (Ajzen, 2005), were represented in the language used in responses to the three questions. In some cases, the participants showed positive responses to all the precursors indicating that learning was likely to result in desired outcomes. In other words, changes to patient care would eventuate. However, others used language to describe a complex array of potential barriers that were perceived to prevent changes to their practice. The knowledge that most participants identified an intention to change practice provides an opportunity to expand content to reflect intentional goals.

The broader analysis of the larger number of the evaluations across a range of seminars and locations consensually supported a strong desire among participants to improve patient care. Benefits to patients that would flow from the learning and intended behavior anticipated by participants revealed a focus on changing clinical practices. In relation to wound management, for example, nurse participants described how they would change their clinical decision-making using the right wound dressing and teaching patient self-care.

However, this bias has also revealed a frustration on behalf of some nurses in relation to the perceived barriers they anticipate that could prevent their implementation of the new learning once they return to their practice setting. The terms used were largely vague and depersonalized, which may be important because such language could reflect barriers outside the learner's control. After all, translation of new knowledge to patient care can arguably only occur if the nurse is able to implement changes in the workplace and the change is aligned with organizational goals. Ellis and Nolan (2005) found that, if education was ad hoc in nature and it was combined with low management motivation, little change was likely to occur. How decisions were made to participate in the seminars was not known and may well have been ad hoc and haphazard. However, it is important to note that some participants self-funded their attendance, which may suggest a strong personal motivation (Nolan et al., 2000). Conversely, a nurse with autonomy to make a change, which did not involve other staff or require extra resources, may not perceive the existence of a barrier.

Although a conclusion cannot be made, this concept may have been reflected by not responding to the question about perceived barriers to implementation. A limitation of the revised tool was that a question concerning perceived facilitators to implementation was not included.

The three open-ended questions explored variations on whether the nurses intended to change their practice as a result of their new knowledge and how they perceived this would impact their patient care. The completed results indicate that participants are willing to document in an open format how they will use their newly acquired knowledge in meaningful ways with an eye to their future caring activities. Encouraging the transfer of learning to their practice setting using semantics in the evaluation tool is a device that probably has more profound benefits than what were measured in this study. By enabling nurses to simply envisage and then describe how they will positively contribute to patient outcomes going forward, it offers a mechanism for mindful consideration of intentional behavior changes.

Therefore, these elements of Kirkpatrick's (2006) Level 3 and 4 Evaluation Model can be observed in the responses of the participants and need to be fostered within the context of the continuing education activity.

CONCLUSION

This study described the development of an evaluation tool for face-to-face continuing nursing education seminars. The tool explored data that were obtained for program development through an analysis of responses to three open-ended questions relating to the transfer of learning through participants' expression of intention to change practice, envisioning patient benefits, and influencing factors relating to translation to practice.

This analysis of the evaluations completed by 1,003 nurses and midwives who undertook a selection of privately provided continuing education seminars in 2016 has revealed important points. First, it has highlighted the power of using open-ended questions in an evaluation tool. Second, it enabled learners to envisage and document their intentions relating to how patients will ultimately benefit from their learning experience.

Analyzing the large number of evaluations returned by learners also revealed unexpected needs and gaps in practice, which were not necessarily specific to one particular topic. There are commonalities that relate across all programs, which foster an expansionist approach and would result in improvement of overall program effectiveness in improving patient outcomes. For example, a restructure of all programs to include practical approaches to implementing new learning in the practice setting based on the findings of the study would be very useful. The concept of who funds the participants to attend continuing professional development and its links to motivation, transfer of learning, and implementation of new knowledge requires further study.

By using advanced technology to identify semantic themes, deeper information emerged about the multiple, interconnected challenges involved in translating new learning into practice. This has a direct impact on how continuing nursing education needs to evolve to ensure it can be effectively utilized once learners return to their practice settings. The conclusion is that developing new knowledge and teaching it are never going to be enough—education needs to include techniques to remove barriers to translation to practice.

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