Nurse educators’ critical thinking dispositions and research utilization

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Summary Nurse educators are becoming recognized as important facilitators of research use in the health care system, thereby contributing to improved patient and system outcomes. Currently, no published studies could be located that specifically examined critical thinking dispositions and research utilization of nurse educators. This paper reports research utilization behaviours and critical thinking dispositions of a random sample of nurse educators across a western Canadian province (n = 287). Descriptive statistics and correlations were compiled for research utilization and critical thinking dispositions measures. Almost all nurse educators who participated in the study scored above the target score of 280 on the California Critical Thinking Dispositions Inventory. The majority of nurse educators (82.1%) scored 280–350, with 15.4% of them scoring above 350, indicating high critical thinking dispositions. Nurse educators scored quite high on overall research utilization (mean = 4.4/5). They believe that research makes a positive difference in practice and reported using various sources of information. Our analysis indicates that there is a statistically-significant correlation between nurse educators’ total critical thinking dispositions and all measures of research utilization. Education of nurse educators must include critical thinking to maximize their role in promoting research use as part of evidence-based practice.

Introduction

Evidence-based practice (EBP) is the desired standard in health care today and so the integration of research into clinical practice is a significant issue for all disciplines, including
nursing. This stance is premised on the belief that relevant research evidence should guide patient care and policy decisions, as inappropriate and inefficient care not based on evidence has been shown to have a significant and deleterious impact on service costs, patient outcomes and, ultimately, quality of life (Barach and Berwick, 2003).

Practicing nurses represent the largest group of health care providers working with patients and their families (Canadian Nurses Association, 2006). Therefore, even modest improvements in EBP aimed at this group have potential for enormous impact on the health care system. In particular, nurses in leadership roles who act as intermediaries, champions, or change agents (Elser et al., 1996; Lam and Schaubroeck, 2000) are becoming recognized as important facilitators of EBP, critical for achieving better patient outcomes (Estabrooks et al., 2005b; Ferguson and Day, 2004; Milner et al., 2006; Profetto-McGrath et al., 2007; Thompson et al., 2001b). One specific group of nurses in leadership roles is nurse educators. Although every registered nurse plays a role in educating colleagues, patients and their families, and students, the term nurse educator used in this paper refers to those with a specific and formal role educating nursing students in the classroom, laboratory or clinical setting, such as a professor or clinical instructor, those who provide client and patient education (e.g., diabetic patient educator), or those who teach employees. The role of nurse educators in EBP research has yet to be fully explored despite the fact that, through educating students, practitioners, and patients, they are becoming recognized as a critical link between research evidence and clinical practice. They are critical thinkers, making assessments and judgments on important issues, and have great potential to facilitate EBP. Studies of critical thinking dispositions in nurses suggest that those who are disposed to thinking critically are “more likely to make high-quality judgments and draw valid conclusions” (Profetto-McGrath et al., 2003, p. 323). Although there have been several allusions to the influence of critical thinking on research utilization, empirical evidence to support this link is sparse. Moreover, there were no published studies located that specifically examined research utilization and critical thinking dispositions in nurse educators. The purpose of this paper is to report research utilization practices of nurse educators using the Research Utilization Survey and to examine nurse educators overall critical thinking dispositions and subscales using the California Critical Thinking Dispositions Inventory. Ultimately, the findings will demonstrate a clear relationship between nurse educators’ research utilization and critical thinking dispositions.

Background and literature review

Efforts to understand how health research evidence is transferred successfully into practice have led to studies that focus on determinants of research use at various levels. Findings suggest that passive diffusion of knowledge, in spite of its effectiveness or significance in specific contexts, is insufficient to ensure its adoption in practice (Grol and Grimshaw, 2003; Grimshaw et al., 2001; Rich, 1979; Rogers, 1995). As early as the classic Iowa hybrid corn study conducted by Ryan and Gross (1943), researchers identified that the diffusion of an innovation is essentially a social process (Valente and Rogers, 1995). This idea was supported by Lomas (1991) who, in his review of passive dissemination of consensus recommendations, concluded that passive dissemination alone resulted in little or no behavioural change in health care providers.

The role of intermediaries, champions, or change agents in health care organizations is one promising means of utilizing this preference for socially-derived EBP. Intermediaries are “individuals within the practice environment who can influence nurses toward specific goals” (Ferguson and Day, 2004, p. 325). Nurse educators are extremely well-placed to act as intermediaries for EBP due to their leadership positions, clinical expertise, and ability to link research with practice (Harvey et al., 2002; Rycroft-Malone et al., 2002, 2004). In their systematic review of the literature on clinical nurse educators and research utilization, Milner et al. (2006) concluded that, though they have great potential as facilitators of research utilization in front-line nursing, nurse educators are expected to take on this role without adequate research training or guidance. Moreover, the authors could not locate any studies that specifically assessed nurse educators’ abilities to facilitate research utilization, so the skills and dispositions associated with this task remain theoretical.

Research utilization

Research utilization, a specific type of knowledge utilization, is a complex, non-linear process involving both individual and organizational change. Broadly defined in the nursing context, it is “the
use of research findings in any and all aspects of one’s work as a registered nurse” (Estabrooks, 1998; p. 19). The three types of research utilization identified in the literature are: instrumental (also termed direct), conceptual (also termed indirect), and symbolic (also termed persuasive) (Johnson, 1998; Landry et al., 2001; Rich, 1979, 1991; Stetler, 1985; Weiss, 1981). Instrumental research utilization is the concrete implementation of research findings into practice (Estabrooks, 1997, 1999a,b). Conceptual refers to the use of research findings to change one’s own way of thinking (Estabrooks, 1997, 1999a,b). Symbolic research utilization is the use of research to persuade others (Estabrooks, 1997, 1999a,b). The literature reveals the importance of sustaining the role of nurse educators in implementing research knowledge into daily practice. Estabrooks et al. (2003) detail the utilization of health research by a small group (n = 82) of nurse educators in comparison to nurse managers and clinical nurse specialists. They found that nurse educators have higher scores on ‘attitude toward research’, use research more often, and list fewer barriers to research utilization. Clearly, nurse educators have the capacity to be important facilitators of research utilization. Dunning (2004) demonstrated that by ‘changing the focus on research from ‘doing’ to ‘using’, linking it to clinical practice and demystifying research terminology [it] improves the diabetes nurse educators’ confidence... and has the capacity to improve the uptake and understanding of evidence-based practice” (p. 189). Given the realm of influence that can be exerted by nurse educators, it is critical to continue to encourage their use of research knowledge.

**Critical thinking**

Critical thinking dispositions are characteristics of an individual, or behaviours conducive to, critical thinking (Facione et al., 1997). The American Philosophical Association (APA) defines the ideal critical thinker as

Habitually inquisitive, well informed, and trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit. (Facione, 1990, p. 3)

The Delphi Report (Facione, 1990) proposed dispositional attributes of critical thinkers as [having] “…a critical spirit, a probing inquisitiveness, a keenness of mind, a zealous dedication to reason, and a hunger or eagerness for reliable information which good critical thinkers seem to have…” (p. 11). In 1992, Facione and Facione (1992) developed the California Critical Thinking Dispositions Inventory (CCTDI) to measure seven subscales (Table 1). Various studies have examined the conceptualization of critical thinking among nurse educators and other professionals. Generally, there is a lack of consensus on a universal definition of critical thinking among nurse educators (Gordon, 1995, 2000; Green, 1995; Goyne, 2001; Walthew, 2004; Raymond and Profetto-McGrath, 2005). Traditional views of critical thinking incorporate aspects such as rational, logical thinking, analysis, information seeking, evaluation, and open-mindedness (Goyne, 2001). A consensus statement from an international panel of nurse experts identified the following as components of critical thinking specifically for nursing:

Habits of Mind: confidence, contextual perspective, creativity, flexibility, inquisitiveness, intellectual integrity, intuition, open-mindedness, perseverance and reflection; Skills: analyzing, applying standards, discriminating, information seeking, logical reasoning, predicting and transforming knowledge. (Scheffer and Rubenfeld, 2000, p. 357)

The above-mentioned Delphi Report was a response to many calls from scholars to look specifically at nursing and critical thinking to find a common language and provide a meaningful definition (Gordon, 1995; Goyne, 2001; Walthew, 2004). Scheffer and Rubenfeld’s study is based on the work of nurse education experts, whereas the APA’s definition is based on normed responses of college students. Certainly characteristics such as well-informed, fair-minded, and prudent evolve with maturity and experience. It also appears that Scheffer and Rubenfeld have instigated dialogue that will bring further consistency and congruency to how nursing describes critical thinking.

Nurse educators support the findings of the 2000 Delphi study, as it has brought a measure of clarity to the critical thinking discussion (Goyne, 2001). Consistent with the Delphi Report, Walthew (2004) found that, overall, nurse educators’ conceptions of critical thinking include a complex process that involves rational, logical thinking and areas of the affective domain associated with more feminist perspectives. Gordon (2000) found that nurse educators were more likely to view research,
problem-solving, decision-making, and planning as aspects of critical thinking than were non-nurse experts. She recommended redefining concepts such as critical thinking to improve dialogue between disciplines (Gordon, 2000).

While there is little agreement on one definition of critical thinking, previous studies clearly show that nurse educators demonstrate many or most of the characteristics in the various definitions. Raymond and Profetto-McGrath (2005) found that nurse educators “possess moderately high levels of critical thinking and demonstrate the necessary dispositions to think critically” (p. 215). For the purposes of ongoing personal and professional development, Goyne (2001) recommended that nurse educators participate in self-reflection and further examination to identify critical thinking processes as opposed to knowledge and purposes. Hsu (2000) noted that teaching critical thinking to nurse educators through an established curriculum demonstrated improvement in their critical thinking skills. Of equal importance to nurse educators is the need for personal physical, psychological and social well-being (Raymond and Profetto-McGrath, 2005) as this impacts their critical thinking.

The relationship of research utilization and critical thinking dispositions

Nurse educators are disposed to think critically (Raymond and Profetto-McGrath, 2005) and they are in a position to effectively utilize research. But, is there a relationship between their critical thinking dispositions and their research use? Several factors associated with critical thinking have been identified as influencing research utilization; however, empirical support linking critical thinking dispositions and research utilization has received limited attention. Only a few published studies detail the relationship between research utilization and some aspects of critical thinking. For example, Profetto-McGrath and her colleagues (2003) studied the relationship between critical thinking dispositions and research utilization behaviours of practicing nurses on seven hospital units. They found a statistically-significant relationship between research utilization and overall critical thinking disposition and some its subscales. Their finding supports the belief that “nurses who have attributes consistent with the

<table>
<thead>
<tr>
<th>Types</th>
<th>Definitions</th>
<th>Examples</th>
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</thead>
<tbody>
<tr>
<td>Overall research utilization</td>
<td>The use of any kind of research findings (nursing and non-nursing), in any kind of way, in any aspect of your work as a registered nurse. Do not count as research, things you learned in the nursing schools where you did your basic nursing training</td>
<td>Giving pain medication regularly q3–4 h for the first 24 h post-operatively, even though the patient does not ask for it this frequently (this patient has no epidural or PCA)</td>
</tr>
<tr>
<td>Instrumental research utilization</td>
<td>The use of research findings (nursing and non-nursing) where you directly use the findings in giving patient care and/or in client interventions. Do not count as research, things you learned in the nursing schools where you did your basic nursing training</td>
<td>Your awareness that patients can experience pain even though they are sleeping (because of its potential exhaustive nature) enables you to make more accurate pain assessments</td>
</tr>
<tr>
<td>Conceptual research utilization</td>
<td>The use of research findings (nursing and non-nursing) to change your thinking or your opinions about how to approach certain patient care or client situations. Do not count as research, things you learned in the nursing schools where you did your basic nursing training</td>
<td>You use your knowledge of recent research that demonstrates that male infants experience significant pain during circumcision to persuade a physician you work with to use a local anaesthetic during the procedure</td>
</tr>
<tr>
<td>Symbolic research utilization</td>
<td>The use of research findings (nursing and non-nursing) to persuade others, who are usually in decision-making positions, to make changes in conditions, policies, or practices relevant to nurses, patients/clients, and/or the health of individuals or groups. Do not count as research, things you learned in the nursing schools where you did your basic nursing training</td>
<td></td>
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</table>

Estabrooks (1997, 1999a,b) and Profetto-McGrath et al. (2003).
ideal critical thinker’’ are more likely to use research findings in their work as nurses (p. 334). With this in mind, the current study contributes to the literature by measuring research utilization behaviours and critical thinking dispositions of nurse educators in an effort to determine whether a relationship exists.

Methods

Design, sample & measurements
This non-experimental quantitative study employed a cross-sectional survey design. Surveys are useful to obtain information about the prevalence, distribution and inter-relationships of variables within a population (Loiselle et al., 2007). Data collection commenced in November, 2004, following ethics approval by the researchers’ home university. Mailed survey packages contained a demographic questionnaire, a shortened version of the Research Utilization Survey (Estabrooks, 1997), and the Californian Critical Thinking Disposition Inventory (CCTDI) (Facione and Facione, 1992). A complete follow-up package was sent to non-respondents three weeks after the initial mail-out. Code numbers on return envelopes ensured participants’ anonymity.

Participants (N = 530) were randomly selected from the list of registered nurses held by a provincial association in a western Canadian province. The participants had indicated on their registered nurses renewal form, submitted to their provincial association, that they held a formal role/position as nurse educators. They had also indicated a willingness to be contacted for research purposes. Two hundred and eighty-seven (n = 287) packages were completed and returned, for a response rate of 54.15%. Respondents were predominantly women (97.2%), the mean age was 46.59 years (SD = 8.1), and they had an average of 20.99 years of experience (SD = 8.98) as registered nurses. These nurse educators held formal position of nurse educators for between 1 year and 25+ years. The majority of participants had a university degree (44%), and worked in a college (39.6%) or hospital (23.5%) setting. Their most common responsibility was teaching students (57.3%).

The Research Utilization Survey consisted of 24 questions divided into three sections: using research, kinds and sources of knowledge for practice, and organizational factors. These questions employed a 5-point Likert-type response scale, ranging from 1 (never) to 5 (very often), with a ‘‘do not know’’ option. Questions relating to overall, direct, indirect, and persuasive research utilization were selected in the analysis because they reflected the spectrum of research use by nurse educators (Table 1). These single-item questions asked how often the respondent has used research in the past 12 months, with 5-point Likert response scales, ranging from ‘‘never’’ (1) to ‘‘nearly every day’’ (5), with ‘‘do not know’’ as an alternate response. Overall research utilization was assessed independently, rather than being a summed score of the other types of research utilization as it is an underlying concept distinct from the others (Estabrooks, 1999b). The overall research utilization question was asked at three deliberate points throughout the instrument. Between each administration of the question, the survey provided information about research utilization and so instrument-driven learning by respondents occurred (Estabrooks, 1999b). Based on the assumption of instrument-driven learning, and previous supportive, empirical research (Profetto-McGrath et al., 2003), we have determined the third occasion to be the most accurate indication of their response and hence, was the assessment used in our analysis. Validity of this measure has been reported elsewhere (Estabrooks, 1999a,b).

The CCTD instrument had 75 statements using a 6-point Likert response scale, ranging from 1 (strongly agree) to 6 (strongly disagree). Each statement is ascribed to one of seven subscales: truth-seeking, open-mindedness, analyticity, systematicity, confidence in critical thinking, inquisitiveness, and maturity (Table 2). The maximum overall critical thinking score is 420, with each subscale contributing a maximum score of 60. Individuals whose overall scores and subscale scores are close to the maximum are believed to be disposed to critical thinking because they are more likely to be open-mindedness, truth seekers, et cetera. A score over 350 indicates a strong critical thinking disposition; 280–350 indicates a positive inclination toward critical thinking disposition; and less than 280 indicates a weak critical thinking disposition (Facione et al., 1992; Profetto-McGrath, 2003). Construct validity of the CCTDI is reported elsewhere (Facione et al., 1992; Profetto-McGrath, 2003).

Data analysis

Using SPSS® version 14.0, data were entered twice to ensure accuracy of data entry protocol. Further, 10% of all instruments were randomly and manually checked against the existing database. The CCTDI subscales’ internal reliability was assessed using Cronbach’s alpha. Descriptive statistics were
completed using the research utilization and critical thinking disposition scores. Both parametric (Pearson’s $r$) and non-parametric (Spearman’s rho) correlations were conducted to determine the relationship between research utilization and critical thinking dispositions. As the resulting coefficients were highly congruent, we only report the Pearson coefficients. A significance level of $p$ value of .05 or less was set for all analyses a priori.

**Table 2** Dispositions & related definitions, components, & examples from the CCTDI

<table>
<thead>
<tr>
<th>Dispositions for critical thinking</th>
<th>Definitions</th>
<th>Components important to the dispositions</th>
<th>Inventory’s sample statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyticity</td>
<td>Demanding application of reason and evidence, alert to problematic situations, &amp; inclined to anticipate consequences</td>
<td>Alertness to potentially problematic situations, Anticipation of possible results or consequences, Application of reason to evidence use</td>
<td>People need reasons if they are going to disagree with another’s opinion</td>
</tr>
<tr>
<td>Inquisitiveness</td>
<td>Curious and eager to acquire knowledge and learn explanations even when the applications of knowledge are not immediately apparent</td>
<td>Intellectual curiosity, Valuing being informed, Knowledge of how things work, Valuing learning for learning’s sake</td>
<td>I look forward to learning challenging things</td>
</tr>
<tr>
<td>Maturity</td>
<td>Prudence in making, suspending, or revising judgment. Awareness that multiple solutions are possible. Appreciation for the need to reach closure even in the absence of complete knowledge</td>
<td>Reflective about judgments, Cognitive maturity, Striving for epistemic development</td>
<td>I always focus the questions before I attempt to answer it</td>
</tr>
<tr>
<td>Open-mindedness</td>
<td>Tolerance to divergent views, self-monitoring for possible bias.</td>
<td>Tolerance for divergent views, Sensitivity for possibility of own biases, Respect for others’ right to have diverse opinions</td>
<td>It is important to me to understand what other people think about things</td>
</tr>
<tr>
<td>Systematicity</td>
<td>Valuing organization, focus and diligence to approach problems of all levels of complexity</td>
<td>Organization, Focused thinking &amp; actions, Diligent inquiry</td>
<td>I’m good at developing orderly plans to address complex problems</td>
</tr>
<tr>
<td>Confidence</td>
<td>Trusting one’s reasoning skills and seeing oneself as a good thinker</td>
<td>Trust in own reasoning processes development</td>
<td>I’m proud that I can think with great precision</td>
</tr>
<tr>
<td>Truth-seeking</td>
<td>Courageous desire for the best knowledge, even if such knowledge fails to support or undermine one’s preconceptions, beliefs or self-interests</td>
<td>Search for the truth, Courage to ask questions, Honesty and objectivity about pursuing inquiry</td>
<td>It’s never easy to decide between competing points of view</td>
</tr>
</tbody>
</table>


**Table 3** Nurse educators’ RU survey scores$^a$

<table>
<thead>
<tr>
<th>Research utilization measure</th>
<th>Score</th>
<th>Mean</th>
<th>Range</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall RU</td>
<td>4.37</td>
<td>2–5</td>
<td>0.76</td>
<td></td>
</tr>
<tr>
<td>Direct (Instrumental) RU</td>
<td>4.14</td>
<td>1–5</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>Indirect (Conceptual) RU</td>
<td>4.34</td>
<td>2–5</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>Persuasive (Symbolic) RU</td>
<td>3.74</td>
<td>1–5</td>
<td>0.94</td>
<td></td>
</tr>
</tbody>
</table>

$^a$ Maximum achievable score for each RU type = 5.
Results

Research utilization practices

Table 3 outlines the sample's means, ranges and standard deviations for components of the Research Utilization Survey. The mean score for overall research utilization was 4.37 (SD = 0.76) out of a possible 5, indicating research use 'often' to 'very often'. Participants reported conceptual/indirect research utilization (M = 4.34, SD = 0.82) as used most often, and persuasive/symbolic as the least used (M = 3.74, SD = 0.94). The source of knowledge referred to most often by nurse educators was personal experience (M = 3.99) followed by in-services (M = 3.90) and nursing journals (M = 3.86). The least used sources were the media (M = 2.5) and established routines and physicians (M = 2.6). The majority of nurse educators (58%) believed strongly that research makes a positive difference in practice, and would use more research in their practice if they could (83%).

Critical thinking dispositions

Table 4 outlines the sample's means, ranges and standard deviations for the CCTDI subscales. A score less than 30 reflects a negative inclination toward critical thinking; a score of 31–39 demonstrates ambivalence; a score of 40–50 indicates a positive inclination; and a score over 50 demonstrates strength in a disposition subscale. Reliability tests of the subscales data produced alpha coefficients between 0.71 and 0.76. The overall critical thinking dispositions mean score was 327.35 (SD = 23.72), with scores that ranged between 252 and 390. Two hundred and seventy eight (97.5%) nurse educators scored over the target score of 280. The majority of the sample (82.1%) scored between 280 and 350, indicating a positive inclination toward critical thinking. Forty-four (15.4%) nurse educators scored over 350, indicating high levels of critical thinking dispositions. Nurse educators also scored high on the CCTDI subscales, with a mean score above the target score of 40, indicating a positive inclination across a spectrum of critical thinking abilities. Participants scored highest on the inquisitiveness (M = 50.86, SD = 4.95) and maturity (M = 48.24, SD = 4.83) subscales. The lowest mean score was achieved on the truth-seeking subscale (M = 43.98, SD = 5.23).

There was a modest but significant positive correlation between overall research utilization and total critical thinking disposition (r = 0.146), as well as all measures of research utilization and total critical thinking disposition (see Table 5). Confidence in critical thinking was the only CCTDI subscale to correlate significantly with all measures of research utilization.

<table>
<thead>
<tr>
<th>Critical thinking dispositions total &amp; subscales</th>
<th>Research utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical thinking dispositions total</td>
<td>Direct</td>
</tr>
<tr>
<td>0.222*</td>
<td>0.205**</td>
</tr>
<tr>
<td>Truth-seeking</td>
<td>0.189*</td>
</tr>
<tr>
<td>Open-mindedness</td>
<td>0.120</td>
</tr>
<tr>
<td>Inquisitiveness</td>
<td>0.246*</td>
</tr>
<tr>
<td>Systematicity</td>
<td>0.211*</td>
</tr>
<tr>
<td>Maturity</td>
<td>0.020</td>
</tr>
<tr>
<td>confidence in critical thinking</td>
<td>0.237**</td>
</tr>
<tr>
<td>Analyticity</td>
<td>0.073</td>
</tr>
</tbody>
</table>

* Significant at 0.05 (two-tailed).
** Significant at 0.01 (two tailed).

Table 4: Nurse educators’ CCTDI scores*

<table>
<thead>
<tr>
<th>Critical Thinking Dispositions Total &amp; Subscales</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>Range</td>
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<tr>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Critical thinking dispositions total</td>
<td>327.35</td>
</tr>
<tr>
<td>Truth-seeking</td>
<td>43.98</td>
</tr>
<tr>
<td>Open-mindedness</td>
<td>46.14</td>
</tr>
<tr>
<td>Inquisitiveness</td>
<td>50.86</td>
</tr>
<tr>
<td>Systematicity</td>
<td>46.01</td>
</tr>
<tr>
<td>Maturity</td>
<td>48.24</td>
</tr>
<tr>
<td>Confidence in critical thinking</td>
<td>46.77</td>
</tr>
<tr>
<td>Analyticity</td>
<td>45.35</td>
</tr>
</tbody>
</table>

* Minimum = 5 & maximum = 60 achievable score for each subscale.
Discussion

The aim of the study was to investigate the critical thinking dispositions and research utilization behaviours of nurse educators. Their overall research utilization mean score is comparable to Estabrooks’ (1999a) study that investigated practicing nurses ($M = 4.4, SD = 1.8$). Similar to our current findings with nurse educators, both Estabrooks (1999a,b) and Profetto-McGrath (2003) reported indirect/conceptual research utilization most often and persuasive/symbolic research utilization least often applied by nurses.

The CCTDI subscale’s Cronbach alpha coefficients were lower than the generally accepted value of $>0.80$. Other studies report alpha reliability coefficients between 0.52 and 0.84 (Profetto-McGrath, 2003; Profetto-McGrath et al., 2003). Although Facione and Facione (1992) developed the CCTDI based on the APA’s definition of critical thinking disposition, Hartley and Aukamp (1994) concluded there is a need to develop a tool specifically designed to measure nurses’ critical thinking abilities.

In the only other study to measure nurse educators’ critical thinking dispositions using the CCTDI, Raymond and Profetto-McGrath (2005) reported a similar overall score ($M = 331.55, SD = 34.45$) and all subscales scores above 40, which demonstrates a positive inclination in every disposition. Similar to our findings, inquisitiveness was both a strength (scoring >50) and the highest scoring disposition in this group, which reflects nurse educators’ curiosity and eagerness to gain knowledge even when it may not have immediate application. Inquisitiveness, although not a strength, was also reported to be highest in both nurses (Profetto-McGrath et al., 2003) and nursing students (Profetto-McGrath, 2003).

In this study, we found truth-seeking to be the lowest disposition ($M = 43.98, SD = 5.23$), which is similar to the findings of Profetto-McGrath (2003) in her study of nursing students’ critical thinking dispositions. Although nurse educators scored above the target score of 40 (whereas nursing students did not), the result is less than desirable in educators who, by virtue of their roles and responsibilities, are expected to have questioning abilities and to be courageous in their desire to acquire the best knowledge.

We found a modestly significant correlation between overall research utilization and overall critical thinking disposition scores, as well as in the confidence in critical thinking subscale. However, even a modest correlation is important as it provides evidence that nurse educators who are disposed to think critically are also more likely to use research in their practice. Given their role in educating nursing students, registered nurses in practice, or patients, nurse educators’ use of research to guide their work with these populations can only lead to positive outcomes.

Limitations of the study

Our sample was limited to those nurse educators registered with the provincial Association of Registered Nurses for 2004 who indicated they would be willing to participate in research. Only 751 out of 1059 could then be randomly sampled, which may suggest a possible selection bias. It is also important to note that both instruments rely on self-report. There is growing discussion in the literature on the influence of social desirability on our existing measures of research utilization, and the need to design instruments that more accurately measure use. The findings must, therefore, be used with caution.

Conclusions

Results indicate that, overall, nurse educators report moderately high research utilization practices and critical thinking dispositions. Almost all educators who participated in this study (278 out of 287) scored above the target score of 280 on the CCTDI. The mean score for all subscales indicates strong critical thinking abilities. Nurse educators believe that research makes a positive difference in practice and reported various sources of information to support this goal.

Critical thinking is important in influencing nurse educators’ use of research in practice, therefore it is essential that we find ways to develop and strengthen their critical thinking. We believe that nurse educators whose critical thinking abilities and skills are well developed are in a better position to promote critical thinking and research utilization with their students through a variety of strategies. These include, but are not limited to, debates, reflective journals, and role modeling. We also believe that nurse educators who scored high on research utilization are much more likely to encourage, and draw on, research in practice whether working with students, nurses, or patients. However, this assertion warrants further research. Additional research on nurse educators’ research utilization and critical thinking dispositions beyond self-report measures is also needed. This research requires observational approaches.
in various settings where nurse educators work (classroom, lab, and practice settings) to capture the interaction with learners and other health professionals within organizations. Ultimately, nurse professionals such as nurse educators who have the critical thinking and research utilization skills are invaluable in educating a workforce of registered nurses who can make a significant contribution to overall patient and systems outcomes.

References


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