

# THE RELATIONSHIP BETWEEN CRITICAL THINKING AND CONFIDENCE IN DECISION-MAKING

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## ABSTRACT

**Nurses make decisions every day while planning and delivering care within their scope of practice. Effective and appropriate decision-making requires the acquisition and utilisation of pertinent data as well as higher order thinking skills such as decision-making and critical thinking.**

### **Research aims:**

**The aim of this study was to examine the relationship between critical thinking and confidence in decision-making for new graduate nurses.**

### **Methods:**

**Critical thinking scores for two groups of new graduate nurses were correlated to confidence in decision-making scores for the same nurses.**

### **Major findings:**

**The study had some surprising and interesting findings. Contrary to prior studies that have found either no relationship or a positive correlation between critical thinking and confidence in decision-making, this study found a negative correlation between these two variables. These findings have implications both for tertiary nursing education and continuing clinical education.**

### **Conclusion:**

**New graduate nurses who have higher critical thinking scores and seem more hesitant in decision-making should be encouraged in their questioning attitude. There is a need for professional development courses that raise awareness of the importance of a nursing culture that encourages a more open questioning attitude to decision-making.**

## INTRODUCTION

**N**urses work in many different roles and settings either directly or indirectly related to patient care. Care delivery has however changed with advances in technology, disease treatment and prevention and nurses need to become skilled in higher-level thinking if they are to effectively manage the complex changes resulting from the increasing demands and greater accountability required of the profession (Simpson and Courtney 2002). Nurses make decisions every day while planning and delivering care within their scope of practice. These decisions require the acquisition and utilisation of pertinent data and higher order thinking skills such as decision-making and critical thinking need to be encouraged and developed in nursing students. Critical thinking ability according to Simpson and Courtney (2002) consist of two main aspects: cognitive skills such as interpretation, analysis, inference, explanation, evaluation and self-regulation as well as affective dispositions such as open-mindedness, truth seeking and self-confidence. These same authors go on to describe self-confidence as both trusting and using one's own reasoning to support decision making. It would be reasonable to assume therefore that those nurses with good critical thinking ability would be more confident in decision-making and this line of reasoning is supported by Seldomridge (1997) who states that making effective judgements requires confidence in one's ability to use cognitive skills.

This paper reports the results of an investigation into the relationship between critical thinking and confidence in decision making in new graduate nurses by assessing their critical thinking ability as well as their confidence in decision making related to nursing activities within their scope of practice and experience. The study took place over a twelve-month period across two area health services in NSW, Australia with a cohort of 83 new graduate nurses.

## LITERATURE REVIEW

### Critical thinking ability

While the definition of critical thinking is broad and diverse in the literature there is general agreement that it is purposeful, reasonable and goal-directed thinking (Halpern 1996 cited in van der Wal 2000). Van der Wal (2000) outlines two types of critical thinking one of which applies to practical situations such as nursing practice emphasising the importance of skills that support the identification of appropriate strategies and the decision making necessary for effective problem solving. Critical thinking in nursing care is thus the ability to analyse problems through inferential reasoning and reflection on past situations that share similar clinical indicators. Such reasoning is necessary for effective decision making in the delivery of complex patient management. The use of critical thinking as a framework for clinical decision-making is thus central to accountable delivery of nursing care and can be seen as essential components of nursing practice defined as purposeful thought involving scrutiny, assessment and reflection (Daly 1998; Shin 1998).

### Critical thinking ability and confidence in decision making

Decision-making is an essential feature of the nursing role. Bandman and Bandman (1995) describe decision-making as providing a basis for intervention utilising critical thinking as a framework in the search for alternatives through inferential (higher order) reasoning. These authors suggest that nurses utilise this framework as a foundation for decision-making as a critical reflective process that supports or refutes the status quo as opposed to problem solving techniques which pre-suppose absolute solutions. Nurses' confidence in this process however, may depend largely on the frequency of their exposure to repeated circumstances with similar patient data, reflection on their inferences about these situations and thus the development of a deeper understanding, which can contribute to confident practice. The development of these abilities varies, however, and Seldomridge (1997) notes that some students are less confident in decision-making and less willing to act whereas others overestimate their abilities and act without caution.

Although it is generally acknowledged that confidence in decision-making is governed by effective critical thinking skills, research to date is not definitive on this point. Girot (2000) reported that there was no relationship between the development of critical thinking and decision-making in clinical practice. These findings resulted from her UK study that utilised the Watson and Glaser *Critical thinking assessment tool (WGCTA)* to measure critical thinking and the *Confidence in decision-making in nursing scale (CDMNS)* to measure confidence in decision-making. This result is in contrast to findings from a Korean study by Shin (1998) who reported a weak

positive correlation between the two using the *WGCTA* to measure critical thinking ability but the *Nursing Performance Simulation Instrument (NPSI)* to measure nurses' confidence in decision making. The CDMNS measures perceptions of ability and confidence in decision-making while the NPSI measures decision-making by respondents answering four simulations and being scored on each. While the different measures for confidence may have produced the differing results, Shin (1998) found only 4% of the variability in clinical decision-making could be accounted for by critical thinking ability and concluded that some of this variability could be attributed to respondents' IQ.

Critical thinking ability and confidence was also examined by Beeken (1997) who found no relationship between critical thinking skills using the California *critical thinking* tool and self-concept or confidence using the Tennessee self concept scale although other studies have found a positive correlation between these two variables. Interestingly, Beeken (1997) did find that older students had a more positive self-concept, were more self-confident and had higher confidence in decision-making. While the development of critical thinking skills may be largely unrelated to the development of confidence in decision making as part of a nurse's role, there is little consensus about the relationship between the two which so often determines the effectiveness of nursing care delivery and thus further supports the significance of this enquiry.

## METHODOLOGY

### Design and aim of the study

The relationship between critical thinking and confidence in decision-making was examined in this study using correlational methods.

### Research question

1. Is there a relationship between critical thinking ability and confidence in decision-making for new graduate nurses?

### Hypotheses

1. There is no relationship between critical thinking ability and confidence in decision-making for new graduate nurses.

### Study sample

The target population from which the sample for this study was recruited was new graduate nurses entering two area health services in Australia, one within a major metropolitan area and one regional area health service. The sample size was 83. New graduate nurses comprised students from 11 different universities, representing a wide range of undergraduate preparation.

## Methods of data collection

The research project used a correlational design. Two groups of new graduate nurses were recruited from two different area health services.

The instruments being used were:

- a demographic questionnaire;
- the Watson and Glaser *Critical thinking assessment tool (WGCTA)*; and,
- Confidence in Decision-making Scale.

The *WGCTA* is an 80-item test that yields a total score for an individual's critical thinking ability (Pardue 1987; Adams et al 1996). It measures critical thinking as a composite which includes:

- a) attitudes of inquiry that involve an ability to recognise the existence of problems, and an acceptance of the general need for evidence in support of what is asserted to be true;
- b) knowledge of the nature of valid inferences, abstractions, and generalisations in which the weight or accuracy of different kinds of evidence are logically determined; and,
- c) skills in employing and applying the above attitudes and knowledge (Sullivan, 1987).

The *WGCTA* has an established criterion and construct validity of 0.55 and 0.75 (Pardue, 1987) and has been used in America with nurses in other studies. The *WGCTA* consists of two alternate forms A and B, which can be administered before and after an intervention and the stability of responses over time on the two forms has a correlation of 0.73 (Sullivan, 1987).

The 'Confidence in decision-making scale' measures perception of confidence in decision-making. It was pilot tested to determine its face validity which was high. It was based on a tool used by Rhodes (1985) which had high reliability reported in Rhodes study. The statements in the tool had a Likert scale with a score of 5 indicating high confidence and 0 indicating no confidence.

Example of the items on the tool are:

'I am confident in deciding what type of bathing to offer to a patient'

'I am confident in advising patients on healthy lifestyles'

'I am confident in prescribing topical pressure area sore treatment'

The demographic sheet gathered background information on participants.

## Data analysis

Questionnaires were collected and the responses collated using a spreadsheet in the computer program SPSS. The SPSS database was used for analysing the data.

The data were analysed using:

- a) Descriptive statistics on the demographic data and raw data from the questionnaires. Frequency distributions were made for demographic data obtained as well as for critical thinking ability (*WGCTA*) scores and confidence in decision-making scores. Means and standard deviations were calculated for the *WGCTA* scores and the confidence scores.
- b) Critical thinking scores were correlated with confidence in decision-making scores to determine if these two were related.

## Ethical issues

The research participants were required to complete two questionnaires, one of which included demographic information. Participants were not required to identify themselves by name and have not been identified during data analysis or during discussion of the results and conclusions. Participants were required to complete questions about their nursing practice that may have had the potential to threaten the nurses' perceptions of themselves as nurses. Full explanation of the purpose of the research was given and the researchers were available to provide information and support as needed.

Access to the information collected is restricted to the researchers and remained confidential. Participants were able to withdraw from the research at any time without giving a reason and no payment was made for participation or in compensation for any time lost.

Data collected is stored in a locked file at the area health service in which the researchers are employed. The data consists of questionnaires and computer discs containing the data and final analysis. The information collected was used for the research only and not for any other purpose. Consent was formally obtained prior to completion of the questionnaires.

## FINDINGS

### Demographics

Eighty-two new graduates were recruited from the two hospital sites, 61 from the regional hospital and 21 from the metropolitan hospital. The new graduates represented a total of 11 different universities. There were 62 female (75%) new graduate nurses and 21 (25%) male new graduate nurses (see table 1). The mean age of the new graduates was 24.05 years, with a range of 20-53 years (see table 1). The majority of new graduates were young but new graduates encompassed a wide age range of up to 53 years.

### Critical thinking scores

The mean overall for the critical thinking score was 50.23, SD 9.45 with a range of 32-74 (see table 1). The total possible score was 80 for the critical thinking score.

**Table 1: Means, ranges and frequencies of the demographics**

	Mean	SD	Range	Frequency
Age	24.05	5.77	20-53	-
Male	-	-	-	25%
Female	-	-	-	75%
Critical score	50.23	9.45	32-74	-
Confidence score	74.1	11.77	32-103	-

The mean overall for the confidence in decision-making score was 74.11, SD 11.77, range 32-103 (see table 1). The total score overall was 110 for confidence in decision-making.

## Correlations

Correlations were carried out to examine relationships between some variables. Pearson's  $r$  was used for those variables recorded as interval level variables, Kendall's tau  $b$  for those relationships where both variables were at the ordinal level and Spearman's Rho for those relationships where at least one variable was at the ordinal level. The assumption for using the Pearson's  $r$ , that the variables at interval level are normally distributed was met. Significance level of 0.05 was used to accept or reject hypotheses. The correlations were analysed as two-tailed correlations, as direction of any existing relationships was unknown.

### ***Pearson's $r$ for the relationship between critical score and confidence score***

There was a significant weak negative relationship (correlation coefficient -0.225, significance 0.02) (see table 2) between the score for critical thinking and the score for confidence in decision-making. These tests were administered just prior to the new graduates commencing their clinical practice.

As the score for critical thinking increased the score for confidence in decision-making decreased, or conversely as the score for confidence in decision-making increased the score for critical thinking decreased. Those who score higher on the critical thinking are less confident about being able to make clinical decisions in areas common to nursing before entering the practice environment. The hypothesis is rejected.

## DISCUSSION

There were some surprising results in the study, namely that critical thinking ability and confidence in decision-making were negatively correlated. In contrast to Girot (2000) who found no relationship between critical thinking and confidence in decision-making, and Shin (1998) who found a positive relationship between the two variables, this study had an unexpected finding of a

**Table 2: Correlations of variables in the study**

Critical thinking/confidence (decision-making)	-0.0225 (*0.02)
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\* Correlation coefficient

negative correlation. As scores on critical thinking increased, scores on confidence in decision-making decreased. Those with higher critical thinking ability were less confident in decision-making. This is an interesting finding, suggesting that those who think more critically are more hesitant in clinical decision-making and would also seem to suggest that those with higher scores on critical thinking ability would be more inclined to spend time searching for answers to clinical problems. Halpern (1996) cited in van der Wal (2000) would seem to support this when he states that good critical thinkers are motivated and willing to check for accuracy, to gather information and to persist when a solution is not obvious. A good critical thinker takes more time to consider a problem, ask questions and carefully gather information, hence hesitation being prominent as this is accomplished. Ruggiero (1998) cited in van der Wal (2000) also echoes this when he states that critical thinkers review ideas, make a tentative decision, then evaluate and refine a situation or belief and thus some hesitation would be expected in this process.

Although confidence in clinical decision-making is considered by some to be important in clinical practice, others have suggested that being overconfident or prejudging in clinical decision-making may in fact be detrimental as it can lead to poorer clinical outcomes due to increased error in clinical decision-making. Kissinger (1998) describes overconfidence in decision-making and states that this may negatively affect clinical practice and nursing outcomes, adding that overconfidence may in fact detract from nursing judgements, and that uncertainty is an unavoidable characteristic of clinical decision-making. This suggests overconfidence can in fact be dangerous.

Paul and Heaslip (1995) outline similar concerns in describing prejudice or pre judgement in advance of evidence, stating that this leads to flawed modes of judging. An example of this may occur when nurses come to conclusions too quickly due to being too confident, and a conclusion is reached too soon without enough information, leading to poor judgements. This phenomena of being overconfident and reaching decisions too soon without enough information is well documented in cognitive psychology and is outlined by Plous (1993) who states that often people tend to be overconfident in their judgements. He also adds that many studies have shown little relation between confidence in decision-making and accuracy. Kissinger (1998) also suggests that those who are unaware of mental processes and who do not evaluate inferential knowledge critically tend to be overconfident and to exaggerate the extent of what they know is correct.

It may be better, therefore, for nurses to be aware of knowledge deficits, to acknowledge them and to be more doubtful of their confidence in decision-making. The findings from this study support the aforementioned premises that those who think more critically are indeed more hesitant in decision-making, perhaps suggesting that as they think more deeply about situations they require more information before coming to a decision.

To become more effective and less overconfident in decision-making, Plous (1993) suggests that we stop to consider reasons why our judgements may be wrong. This is echoed by Kissinger (1999) who suggests that those who are overconfident believe that by asking questions they might be looked down on although poor decisions may be made when a questioning approach is not made. Perhaps what is needed is a much more questioning attitude and a greater willingness to be open to more information gathering. Those new graduates who have higher critical thinking skills and seem more hesitant in decision-making should be encouraged in their questioning attitude. In summary, overconfidence in clinical decision-making may not necessarily be a positive attribute, as there is no evidence to link this with accuracy or quality of decision-making. A nursing culture that encourages an open, questioning approach to decision-making in patient care delivery will support safe practice by all clinicians.

## LIMITATIONS OF THE STUDY

The study was conducted at two area health services only and the results can only be generalised to those areas with a similar make-up. The sample used was a convenience sample and this may also affect the results.

## RECOMMENDATIONS AND IMPLICATIONS FOR PRACTICE

- The need for professional development courses that raise nurses' awareness of the importance of a nursing culture that encourages a more open questioning attitude to decision-making in patient care delivery

- Further research needs to be done with larger numbers from a more diverse population to test the generalisation of the results obtained in this study

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