



Nursing students' view of critical thinking as 'Own thinking, searching for truth, and cultural influences'

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ABSTRACT

Introduction: Students should enhance their ability to think critically as part of a process of whole-person development.
Background: Within nursing education, students should employ critical thinking to ensure quality of patient care and patient safety.
Aim: The aim of this study was to explore the perspectives of nursing students on critical thinking.
Design: A descriptive qualitative study.
Methods: This was a focus group study involving 65 nursing students from one school of nursing. A total of eleven focus group interviews were conducted. The semi-structured interview guideline was used. All interviews were audio recorded, transcribed in Chinese and translated into English. Thematic analysis was adopted.
Results: Three themes centred on critical thinking were discerned: own thinking, searching for truth, and cultural influences.
Conclusions: It is suggested that future studies be conducted on how these factors might affect critical thinking. In addition, multiple nursing schools could become involved in these studies to obtain rich data and enrich the picture of students' views on critical thinking. If nurses have more time to think about what is going on, they could think critically about what they are actually doing. This would help to protect the safety of patients and to reduce the occurrence of medical accidents.

1. Introduction

In the twenty-first century, the popularity of electronic devices coupled with the rapid development of information and communication technologies is fueling the expansion of digital data and access to information. As a result, the issue of how to discern valid and reliable information has received increasing attention from the public and educational practitioners (OECD, 2016). Critical thinking is a practice that has been studied from Socrates onwards and has gradually become a desired outcome in contemporary higher education. According to Dunne (2015), critical thinking is tied to one's rationality, and refers to an individual's ability to utilize a thread of cognitive, practical, and evaluative rationality to generate cogent reasons for any given view, action, or statement. As a superior epistemic pursuit, the ability to think critically is what distinguishes human beings from other living creatures, and has contributed to the search for truth and the advancement of society. In general, the ability to think critically helps people to overcome the challenges of receiving masses of information every day, and to separate accurate and worthwhile knowledge from conjecture, doctrine, and fallacy. In addition, critical thinking contributes to the

development of one's ability to ask questions, solve problems, and make decisions, and one's inclination to employ these capacities (Dwyer et al., 2017; Nonis and Hudson, 2018). In response to the call of the information era, universities must rise to the challenge of nurturing future critical thinkers. Therefore, higher education practitioners and researchers have become interested in and are being encouraged to develop educational programmes to promote critical thinking in students. In the course of developing such programmes, a deeper understanding of students' views on critical thinking will emerge, allowing for new ways of harnessing the power of this form of thinking to be devised.

2. Background

Given the complexity of the current clinical environment and population, nurses today often need to utilize critical thinking to make appropriate clinical decisions to ensure safety and quality for patients. The National League for Nursing Commission for Nursing Education Accreditation (2016) states that one of the goals of nursing education is to prepare the future nursing workforce to be able to think critically in order to ensure the delivery of optimal health care. In making the

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transition from classroom theory to actual practice, numerous researchers have tried to implement various approaches to promote the development of critical thinking in nursing students (Barbour and Schuessler, 2018; Chan, 2017; Gray et al., 2019).

In the nursing literature, although several definitions of critical thinking have been proposed, it appears that critical thinking is a multidimensional construct (Chan, 2013) and one that is not easily defined. Recently, Noone and Seery (2018) investigated a total of 452 undergraduate nursing students at two Irish universities and found the development of critical thinking skills to be correlated with the enhancement of the ability to seek truth, an open-minded disposition, analyticity, systematicity, self-confidence, inquisitiveness, and maturity. Through exercising the abovementioned abilities, which Carvalho et al. (2017) termed ‘habits of the mind’, a critical thinker in nursing would be able to seek and critically discriminate between various pieces of information, interpret and evaluate data logically, and eventually make the most appropriate clinical decisions. Additionally, in a qualitative study involving simulation-based training, Pouralizadeh et al. (2017) found that employing clinical reasoning helped nursing students in the task of performing comprehensive assessments of patients’ clinical symptoms. With regard to other contributing factors, having an active learning environment is regarded as an effective way to foster critical thinking. In a mixed study involving 40 baccalaureate nursing students, Li et al. (2018) found that contrary to traditional passive learning approaches (i.e., lectures and rote learning), a stimulating and empowering environment was more effective at helping nursing students to develop critical learning skills. The role of nurse educators and their educational practices is also critical for cultivating critical thinkers in nursing. As Raymond et al. (2018) found in their mixed-design study, nurse educators can support the development of students’ critical thinking skills via the techniques of role modelling and questioning. Overall, three observations can be made based on previous studies that have been conducted on the subject of critical thinking in the field of nursing education. First, these studies have contributed to identifying factors that could enhance the critical thinking of nursing students. Second, surveys and in-depth interviews have frequently been used to collect data. Third, the existing literature investigating nursing students’ views on critical thinking is relatively limited.

The aim of this study is to explore the perspectives of nursing students on critical thinking in nursing education.

3. Methods

A qualitative descriptive study, which seeks to understand how human beings make sense of their experiences and assign meaning to them (Holloway and Galvin, 2017), was adopted in this research. In an attempt to take an open stance and avoid any preconceptions in the process of collecting and analysing data, no previously developed theory/conceptual framework was adopted in this study.

3.1. Setting and participants

The participants were recruited from one school of nursing in Hong Kong. Convenience sampling, involving choosing target samples through the researchers’ ease of access to that school, was adopted. The student participants were from two undergraduate nursing programmes and one postgraduate nursing programme. The total number of students in the above three programmes was about 1300. A total of 65 students (5% of the total number of students) participated in the study. The sample size was based on Morse’s idea (2015) that the sample size in a qualitative inquiry should be approximately 30 to 50 participants, depending on the topic and scope of the inquiry. Eleven focus group interviews were conducted, i.e., four groups from the Bachelor of General Nursing programme (n = 28), four from the Bachelor of Mental Health Nursing programme (n = 22), and three from the Master of Nursing programme (n = 15). The participants were allocated to the mixed-

gender interview groups on the basis of their belonging to the same year of study and study programme.

3.2. Data collection

A focus group interview can facilitate discussion among the participants (Packer, 2011). It is especially efficient for use among participants with a similar background. The duration of each interview was about 1.5–2 h. All interviews were audio recorded, transcribed in Chinese and translated into English.

The interview guide was developed based on the researcher’s 20 years of tertiary teaching experience and her research track record on critical thinking, and by referring to previous literature reviews. It consisted of four main questions:

1. What is critical thinking in general?
2. What is critical thinking in nursing education?
3. Have you done anything to enhance “critical thinking”?
4. Have you applied anything to develop “critical thinking” in your clinical practice?

3.3. Data analysis

The researcher and the research assistant independently carried out the initial line-by-line coding by giving a short summary of each line in the interview transcripts, such as “experimenting”, “being open mind”, and “think alternatively”. Secondly, when both have coded the first few interviews and had gained sufficient insight and experience, both then synthesized the most significant and frequent initial codes to develop “focused codes” to represent larger segments of the data. As exemplified above, a focused code, “being creative”, is developed to represent the three initial codes. As long as the process of collecting data is occurring, both will constantly compare (the constant comparison method) initial and focused codes from different interview transcripts to make refinements and write memos (memoing) to record both observations and ideas about the data. Eventually, subcategories and core categories were developed when both were able to decide which synthesis of focused codes fits the data well. These steps were not linear but recurrent, and were carried out until no new information could be extracted from the data. After the independent coding, the research team discussed and verified the coding as a whole to identify any commonalities and differences in the coding. Ongoing meetings were held in order to come to a consensus on the codes, and revisited and reread the transcripts and discussions.

3.4. Ethical considerations

Before the interviews were conducted the participants were provided with an information sheet explaining this study and a consent form to ensure that their participation was on a voluntary basis. The participants will also be informed of their right to withdraw from the study. To protect their anonymity, a research code was given to each participant to represent their identity and no private information was published. Ethical approval to commence this study was granted (HSEARS20160823002).

3.5. Trustworthiness

To ensure the trustworthiness of the study, the following procedures were carried out: an audit trail, triangulation, prolonged engagement, and thick descriptions of the data. Most importantly, reflexivity in this study was demonstrated with reference to Engward and Davis’ discussion (2015). In particular, the three types (personal, functional, and disciplinary) of reflexivity in the research process were taken into consideration during the entire course of this study (Chan, 2010).

4. Results

4.1. Theme 1: own thinking

The analysis of the data is supported with quotations from the student participants. R refers to the researcher. 'FG' refers to Focus Group. For example, FG1 means the first focus group interview. The following item shows the gender and sequence of recruitment of the participants, e.g., 'M1' represents the 1st male participant, while 'F2' represents the 2nd female participant.

As defined by the participants, critical thinking is about requiring us to think for ourselves via a self-exploration of issues. Twenty participants said that to think critically, it is essential to take different perspectives into consideration in order to draw sound conclusions:

R: What do you think critical thinking is about?

FG1M2: I believe that critical thinking is about analysing one issue from different perspectives; it is not about what others tell you to do, which you then go ahead to do. It requires you to do your own thinking by using your mind, and then doing it.

R: Generally, what do you think about critical thinking?

FG3F1: What I think of critical thinking is that, we always hear some information which, whether or not it is correct, we should not echo the views of others. We should view things from our thinking and from different angles. Someone may tell version A, while something could be viewed from another angle. This is the process of thinking.

Critical thinkers should question the truthfulness of the sources; they should ponder the issues with their acquired knowledge. Blindly following the opinions of others should be avoided in critical thinking:

R: What do you think critical thinking is about?

FG1M1: I believe that critical thinking is about not immediately believing what others tell you, whether it is about information, thoughts, or ideas. (You) should find out how to verify [what you are told]. After that, you determine whether or not it is right.

R: Actually, what is your view of critical thinking? What is critical thinking?

FG1F1: I think that critical thinking is when you receive some information from different sources, like on the Internet or from peers or teachers – you should filter and ponder it from different angles, like finding whether there is some evidence to support the statement. It does not do to simply accept what others tell you. It is not about what others tell you, and then you believe it or go and do it. You should at least ponder whether the information is right or not before you go and do [something].

In short, the participants believed that critical thinkers should filter all of the information that they receive and analyse each individual statement before drawing more objective conclusions. Having related knowledge and thinking independently are necessary for critical thinkers.

Thus, critical thinking could reinforce the fact that nurses have their own perceptions of medical situations. This could also help them when holding discussions with other healthcare professionals to determine the most appropriate treatment for patients. This could finally promote the autonomy of nurses – who would not only follow the doctor's prescriptions:

R: Nursing is about professionalism – what do you think about the role and functions of critical thinking in the professional development of nursing?

FG3F5: I believe that the role is so obvious. Sometimes, as nurses, we follow doctors' orders. But are doctors' orders necessarily correct? Are they best for patients? Actually, most of the time, doctors spend a shorter time visiting patients; what I mean is their period of contact with patients. We, as nurses, are always in contact with the

patients. Doctors may not pay attention to some observations. If we think critically, (we) could discuss matters with doctors, such as 'This is what we have observed'. This is not only about following orders from one angle. I believe that this is quite obvious.

Therefore, critical thinking could enhance the ability of nurses to work independently and think logically, which could promote the autonomy of nurses. They could have their own voice in healthcare sectors, which would be favourable to the development of nursing as a profession.

4.2. Theme 2: search for truth

In order to create the conditions for critical thinking, critical thinkers should examine different types of sources to determine the truthfulness of the information that they have received. They may look to various evidenced-based sources and to their experience; they may also consider the patients' condition before determining which kinds of nursing care to adopt for their patients. This quotation illustrates how participants believe that critical thinking helps nurses to connect their knowledge and experience, and to determine the credibility of the information that they have received:

R: From your point of view, discuss what critical thinking is, this time focusing on the level of nursing education. What is critical thinking?

FG1M3: The special thing about the front line (of clinical settings) is that there are lots of things that could happen suddenly, which do not involve what we have learnt from lessons or from textbooks. ... What we have learnt may not be useful. Or, other than the basics, additional things may be required. But at that moment, we could discover the reality that there may be a gap in our cognition. This gap develops from thinking; this may be what we have discussed – critical thinking. At the beginning, we may question 'whether what we have learnt is right or not, or whether what we have experienced matches with what was explained in textbooks. When we practise, this is the key to how critical thinking plays an important role in nursing education.

After exploring the reliability of the available information, the application of critical thinking could also help nurses to choose ways to provide better care for patients. Where multiple approaches to a situation could possibly be considered, the ability to think critically would be an asset:

R: If critical thinking applies in nursing education, what do you think of critical thinking?

FG3F2: (It) may be an aspect of in our nursing education, like learning some basic principles that should be the same, but for different patients – how we can think critically in different situations, just as (other participants) have mentioned, so that we 'make a painstaking investigation to fit the actual needs of each patient'. One theory could not apply to all. Moreover, sometimes in nursing education, we should consider whether there is only one (approach): 'Normally he/she has a disease, (so) he/she should have such a reaction', but must this be the case? So I believe that we should always think critically on whether there is only one (approach), or whether there might be other possibilities.

Ten participants mentioned that critical thinking could help with the application of theories into practice; this ability could be acquired through continued practise:

R: What do you think about critical thinking in nursing education?

FG2F2: Actually, there are many theories in nursing. This is what (other participants) have mentioned, that 'actually nursing is always changing, because the patients are different. Critical thinking could help us with the use of some basic theories. There is a theory about how you apply a theory to different cases. It relies on your logical

thinking, for example, ‘Oh, I should do this, whether I can keep this theory [for a particular case] while at the same time, apply it to this case. In addition, I believe that critical thinking cannot be achieved by practising once; I should practise many times to train my brain how to think. This is important for nursing, because it is not always the case that one will always (work) as a team, including with teachers. When you (work as) an individual, if you have previously practised how to think – if you ponder over this matter using a logical approach, you could use your judgement.

Critical thinkers should be able to think independently and logically. This could also help in identifying various approaches to optimize nursing care. The result could be to give nurses more flexibility in their care practices and to boost patient safety.

4.3. Theme 3: cultural influence

Cultural factors could influence people to apply critical thinking. If cultural norms support the notion that individuals should have their own beliefs, this could encourage people to follow their own thinking. If a society limits people's freedoms, or if traditional thinking holds sway, this could inhibit people in developing their own thoughts. They may tend to follow the general way of thinking. These quotations illustrate what the participants thought about critical thinking in relation to their educational system:

R: Are there any factors helping critical thinking?

FG3F6: Actually, it is worst in Hong Kong. Talking about Hong Kong's educational system – it does not encourage this atmosphere (of asking questions). I believe that the spoon-feeding approach to education does not facilitate this.

FG3F7: I think that Chinese education is like that, preferring not to question. As parents may not know how to answer, they can say ‘Don't ask why! Just follow what you're told’.

A few believed that their educational culture did have an influence on whether one learned to think critically:

R: On a personal level, what are the roles and functions of critical thinking?

FG3F4: I believe that since (we were) little, (we) received spoon-feeding education – most of the time, teachers or other people will tell you (something); after listening, (you should) recite everything. This does not reflect critical thinking. Because I think, when working, or as (another participant) mentioned, when greeting others and handling things – that is personal development – one should think critically. This will enable one to not follow others blindly. You should think for a second before acting.

Therefore, culture can influence educational styles and parenting approaches. This could also affect whether people learn to think comprehensively and critically.

5. Discussions

5.1. Own thinking – not following others without a reason

The participants defined critical thinking as owning their thoughts, which implies not following others without a reason. In order to think critically, it is important to verify the credibility of the information one has received. This is in line with the views of [Borglin and Fagerström \(2012\)](#), and [Lin et al. \(2015\)](#). These studies support the argument that in critical thinking one should question the reliability of what one has received. In addition, the participants emphasized that critical thinkers should analyse issues from multiple perspectives in order to come to a sound conclusion. This is consistent with the work of [Kaddoura \(2013\)](#). The researcher found that critical thinking is a special approach to thinking, which consists of taking various points of

view into consideration; this could aid in viewing the whole picture. It is a complex process of thinking in which one endeavours to use reliable information and ponder matters comprehensively. The process involves listening, doubting, questioning, discussing, and drawing conclusions. [Lin et al. \(2015\)](#) also found that critical thinking consists of these elements. Through this process, the participants could achieve what they define as critical thinking, namely, having their own ideas. The participants believed that thinking critically can help one view a problem or situation more broadly. [Dwyer et al. \(2014\)](#) developed an integrated framework of critical thinking that shows that working memory and long-term knowledge are correlated with comprehension; these are related to critical thinking. When people can view issues in a comprehensive manner, they can easily become independent thinkers. When nurses can independently make sound and logical decisions by adopting critical thinking, this reinforces their autonomy. This view is also supported by [Dwyer et al. \(2016\)](#). Critical thinking is an important element when evaluating employees, because the ability to think critically is an asset when working independently; it aids in analysing and evaluating issues to make the right decisions.

5.2. Searching for truth

Consistent with this study, [van Graan et al. \(2016\)](#) noted that nurses with critical thinking skills are inquisitive, flexible, and reflective when using their cognitive skills. They mentioned that, influenced by inquisitiveness, the application of critical thinking could help nurses to seek truthful information. [Lin et al. \(2015\)](#) also mentioned that by using critical thinking students should consider whether to believe or reject information before drawing conclusions. Nurses should adopt goal-oriented thinking, and make judgements based on credible evidence instead of on assumptions ([Daly, 1998](#)). Reliable evidence that can be found via critical thinking is of importance in making decisions. After exploring the credibility of the available information, critical thinking could also help in the application of nursing care for patients, by helping one to make logical decisions on how to deal with problems ([Dwyer et al., 2016](#)). Most of the participants explained that critical thinking aids one in choosing the most appropriate treatment for patients. They could make decisions based on the patients' unique needs and condition. [Kaddoura \(2013\)](#) also discovered that critical thinking could help a person select the best option from among different options. [Lechasseur et al. \(2011\)](#) emphasized that a high level of critical thinking is involved when taking actions in which persons are considered as individuals. This could lead to nursing care of optimum quality based on individual needs.

5.3. Culture shapes critical thinking

Culture influences critical thinking. Some participants explained that the more support that is given to the expression of opinions, the more favourable the conditions are for the development of critical thinking, and vice versa. They emphasized that educational culture and parenting culture play an important role in developing critical thinking. This is in line with the findings of [Martyn et al. \(2014\)](#). Passive approaches to education, like lectures that deliver knowledge from educators to students in a single direction, could limit the development of skills. [Borglin and Fagerström \(2012\)](#) had similar views. They found that educators play an important role in developing their students' critical thinking skills. [Huang et al. \(2015\)](#) noted that Chinese culture does not promote critical questioning; if children ask some challenging questions, they could be viewed as impolite. This could inhibit the development of their critical thinking skills. The participants made similar comments. The majority of them mentioned that an atmosphere that discourages questioning, like the spoon-feeding approach to education and traditional parenting methods, could inhibit the development of their critical thinking skills. Culture could bring benefits as well as drawbacks to students, depending on the nature of the culture that

develops.

6. Limitations

The participants were recruited from one local school of nursing in Hong Kong. Their experience and knowledge in the field of nursing may be limited. Their views on critical thinking may not be fully representative of how students view critical thinking. However, it is important to note that this school is one of the largest schools in the region and that our sample of nursing students was taken from three pre-registration nursing programmes. The interactions between the facilitator and the participants may have influenced the depth and extent of their communication. In addition, the data may have been interpreted subjectively, especially data relating to life experiences.

7. Implications for nursing education

Educators should realize that there is a relationship between personal development and critical thinking. The Chinese nurturing approach does not promote the asking of questions. When students ask some questions of their parents or teachers, this is not appreciated, which inhibits children from exploring the rationale behind each issue and developing their ability to think critically. On the other hand, people who are obedient are appreciated. Influenced by this atmosphere, students would tend to follow what their parents or teachers expect, and act as 'good children or students'. They would be less likely to think critically about the pros and cons of each issue, contributing to a situation in which they feel challenged when making decisions. They would rely on seeking opinions from others and become dependent. They feel helpless to determine what they actually want to be and what life they want to lead in the future. It is noteworthy that insufficient time and a heavy workload would inhibit nurses from thinking critically and also constrain their professional development. Various approaches to the same procedures can be adopted. Healthcare professionals should know the rationale behind an approach that is taken, and establish their own practices by thinking critically and obtaining guidance from clinical mentors. If nurses have more time to think about what is going on, they could think critically about what they are actually doing. This would help to protect the safety of patients and to reduce the occurrence of medical accidents.

8. Conclusions

This study provides more insights into how nursing students perceive critical thinking. Acquiring critical thinking skills could give students the ability to think comprehensively and verify the truthfulness of received information. This would help students to make sound decisions not only in relation to their nursing career, but also to their daily life. Thus, critical thinking could influence how people act and think, influencing the development of their personality and career. Educational styles and parenting methods also influence the way people think. It is suggested that future studies be conducted on how these cultural factors affect critical thinking. Multiple nursing schools should be involved in these studies, to obtain rich data and enrich the picture of students' views on critical thinking.

Conflict of interest

The author declares that there is no conflict of interest.

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