



## ARAŞTIRMA / RESEARCH

### Critical thinking in clinical nursing: a content analysis

#### Klinik hemşirelikte eleştirel düşünme: içerik analizi

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#### Abstract

**Purpose:** Delivery of safe, effective and efficient care are important goals of qualified nursing care, which can be met by acquiring critical thinking skills. In nursing critical thinking is a general concept and there are many uncertainties about its definition. In this paper, a specific definition of critical thinking is offered which has a direct relationship with clinical nursing.

**Materials and Methods:** In this qualitative content analysis, data were gathered from 18 nurses who had direct involvement with subjects. Semi structured interviews in Tehran; Karaj and Sanandaj hospitals were conducted. The data were analyzed through inductive content analysis.

**Results:** The extracted attributes of critical thinking were using nursing process in facing with clinical situations, being criterion-based in making clinical decisions, emphasizing on holistic performances, personal critical thinking dispositions and using emotional intelligence in facing with clinical situations

**Conclusions:** The emerged categories were resulted in developing an operative definition about the critical thinking in the context of clinical nursing. This definition can help practitioners to develop a framework and guidelines for effective performance in practice. This framework usually guarantees competency in nursing.

**Key words:** Critical, thinking, qualitative research, nurses.

#### Öz

**Amaç:** Kritik düşünme becerileri kazanarak karşılanabilen, nitelikli hemşirelik bakımının önemli hedefleri, güvenli, etkin ve verimli bakım sunmaktır. Hemşirelikte eleştirel düşünme genel bir kavramdır ve tanımıyla ilgili birçok belirsizlik vardır. Bu yazıda, klinik hemşireliği ile doğrudan ilişkisi olan eleştirel düşüncenin belirli bir tanımı sunulmaktadır.

**Gereç ve Yöntem:** Bu nitel içerik analizinde, hemşirelere doğrudan müdahale eden 18 hemşireden veri toplanmıştır. Tahran, Karaj ve Sanandaj hastanelerinde yarı yapılandırılmış görüşmeler yapıldı. Veriler endüktif içerik analizi ile analiz edildi.

**Bulgular:** Kritik düşüncenin ortaya çıkardığı özellikler, klinik durumlarla yüzyüze bakarken hemşirelik süreci, klinik kararlar almak için ölçüt temelli olma, bütünsel performanslara vurgu yapma, kişisel eleştirel düşünme eğilimlerini vurgulama ve klinik durumlarda yüzleşmede duygusal zeka kullanma

**Sonuç:** Ortaya çıkan kategoriler, klinik hemşirelik bağlamında eleştirel düşünme ile ilgili bir operatif tanım geliştirilmesiyle sonuçlanmıştır. Bu tanım uygulayıcılara pratikte etkili performans için bir çerçeve ve yönerge geliştirmeye yardımcı olabilir. Bu çerçeve genellikle hemşirelikte yeterliliği garanti eder.

**Anahtar kelimeler:** Kritik, düşünme, nitel araştırmalar, hemşireler

## INTRODUCTION

The critical thinking concept has been one of the most confused and discussed terms in the clinical nursing from the last two decades<sup>1</sup>. Critical thinking in nursing improves professional competencies, quality of care and will lead to professional growth and satisfactions<sup>2</sup>. Nurse Managers also need critical thinking to improve practice environments and

professionalism<sup>3</sup>. Likewise, Banning (2008), claims that the main pre requisite for professional astute and innovation is critical thinking<sup>4</sup>.

There are numerous definitions for critical thinking. Özkahraman & Yildirim (2011), state that critical thinking is the process of searching, obtaining, evaluating, analyzing, synthesizing and conceptualizing of information<sup>5</sup>. Tajvidi et al.

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(2014), describe critical thinking as a logical, purposeful and outcome-centered thinking<sup>6</sup>. Fero et al. (2010), remark critical thinking as a rational and reflective thinking concentrating on decision-making<sup>7</sup>. Despite emphasizing on the importance role of critical thinking in nursing, unfortunately, there is no comprehensive agreement upon its definition<sup>8</sup>. Edwards (2007), declares that explanations of critical thinking according to literature is very complex<sup>9</sup>. Reid (2000) noted that numerous definitions are needed to cover all aspects of critical thinking and insisted on making unique and integrated definition about this concept is not accurate<sup>10</sup>. Jenkins (2011), reports that there are many confusions and uncertainties about the application of critical thinking in nursing. He also states that confusions occur when critical thinking is used interchangeably with other expressions with different meaning<sup>11</sup>. A brief overview of the opinions of experts indicates that there are two lookouts about the concept of critical thinking; first, critical thinking is a discipline – specific concept and have different meanings in different disciplines and second, it is a general concept and have a same meaning in different disciplines. They also believe that the best strategy to solve contradictions, conflicts and ambiguities in regard to critical thinking is to establish a comprehensive explanations about this concept in different contexts<sup>12,13</sup>. Broome et al, (2000) indicated that the expected outcomes related to concepts will be met if their expressions and features are defined clearly<sup>14</sup>.

Since critical thinking in nursing is an abstract concept and there is no general agreement about the meaning of this concept in clinical nursing, establishing a clear and understandable definition seems to be very essential. The purpose of this study is to probe and determine the meaning of critical thinking in clinical nursing in Iran.

## MATERIALS AND METHODS

### Study design

This study was performed through qualitative conventional content analysis approach. Qualitative content analysis is defined as a methodology for the subjective interpretation of the content of text data via a systematic classification<sup>15</sup>. The conventional approach usually appropriates when the existing theory or literature about the phenomenon is limited or there are no formal knowledge about the

phenomenon. The researcher avoids, using predefined categories and immersed him in data to acquire a new insight<sup>16</sup>.

### Setting and Sample

A purposeful sampling method was carried out. By observing the data saturation criterion, 18 nurses, involving 10 males and 8 females, between the ages of 24 and 51 years (average 37) were selected from the general hospitals of Tehran, Karaj and Sanandaj. The samples selected from different wards (ICU-CCU- Emergency- Surgery and Internal) with different level of education (Bachelor 11 - Master 6 - PhD student 1) to guarantee the maximum variation intended by the researcher. At least one-year experience in clinical environments and direct involvement with subjects were determined as inclusion criteria, so that they could assess their reactions in simulated scenarios similar to real context.

### Ethical consideration

Permission for conducting this study was received from the ethical committee of the research administration in Tarbiat Modares University at Iran. [NO: D 52 / 1455at May 23,2014].

### Data collection

Data were gathered over a period of 6 months, October 2015 to March 2016, through in- depth interviews from the with semi- structured questions about the pre- designed scenarios to provide an opportunity to each participant to analyze simulated data, determine needs for more data, make decisions about the problems and choose the best interventions. Based on their relevant field of activity and work experiences, 5 scenarios (figure.1, 2) were designed for nurses working at ICU, CCU, and emergency, internal and surgical wards. Then, a general question like "can you explain your typical experiences in confronting with this situation?" "Was asked to clarify points and views. According to participant's responses, more and more probing questions like "what is the meaning of this?" or "why you did this?" Were posed. Each interview was recorded by a voice recorder and transcribed within the first 24 hours. At whole 18 interviews and 2 complementary interviews with average length of nearly 43 minutes were done.

A 32 years old male were admitted in ICU due to car accident from 6 days ago. The level of consciousness according to Glasgow coma scale is 8 from 15. Today several trying for insertion of I.V line were failed. The problems were reported to his physician. After a few hour C.V line were inserted in right sub clavian vein. From one hour ago, signs and symptoms like dyspnea, tachycardia and perspiration were developed. Please explain your experiences in facing with this situation.

**Figure1. Selected scenario for ICU**

A 75 years old male, and well known case of COPD were admitted with fever, chilling, fatigue, dyspnea and productive cough from 3 days ago in internal ward. The patient is very lethargic and have not appeal for answering to questions. Last night after an agitated attack, he fallen down from the bed. The nurse did not report this event to her encharge. Now patient is deep. The physician decided to transfer him to ICU. Please explain your experiences in the same situation.

**Figure2. Selected scenarios for internal ward**

### Data analysis

Data analysis was performed through an inductive content analysis. This approach moves from specific to the general, so that particular subjects are observed, then combined into larger statements<sup>17</sup>. The analysis process was carried out in 3 phases:

1. Preparation phase: This phase starts with selecting the units of analysis. They can be words or phrases<sup>18</sup>.
2. Organizing phase: This process includes open coding, creating categories and abstraction<sup>15</sup>. In open coding, interviews were transcribed and transformed to text structure. Each interview was read 3 to 4 times and primary codes were extracted. Depending on similarities and relationship between extracted codes, sub categories were formed<sup>19</sup>. The Combination of sub categories resulted in the emergence of main categories. Abstraction means generation a general explanation of the research topic through the emerged categories<sup>20</sup>. In this study, the extracted categories eventuated to providing a clear definition of critical thinking in clinical nursing.
3. Reporting phase: In this phase, the analyzing process, categories and extracted definition were reported<sup>16</sup>.

### Trustworthiness

Credibility is an effort to make a confidence in interpretation of meaning of the data. In the other words it refers to the truth of data and participant's view<sup>21</sup>. In our study re-reading of transcribed interviews and prolonged engagement with subjects, reduced the chance of losing information. Several copies of transcript interviews and extracted codes and categories was sent to participants to member check and selected researchers to peer check so that, their understanding and points of views could be assessed.

### RESULTS

In this study, five categories were extracted as follow:

- Using nursing process in facing with clinical situations
- Being Criterion – based in making clinical decisions
- Using emotional intelligence in facing with clinical situations
- Personal dispositions for being critical thinker
- Holistic and contextual perspectives in caring processes

### Using nursing process in facing with clinical situations

This category consists of 3 categories: assessment skills of patients, determination of nursing diagnosis, designing of nursing care plan and evaluation process of implementations. The first category, assessment skills of patients, were extracted from the aggregation of 3 sub categories including; the skills of gathering and organizing data, analytical skills and ability to predict events and situations. In regard with the code, finding the cause and effects of problems in related to analytical skills participant 5 said:

*P5: In order to understand the relationships between hypertension, heart failure and this respiratory problem, I have to find which is cause and which is effect. Some physicians do not spend enough time. They usually provide a symptomatic treatment. Patient seems well, but after a while, he comes back with a worsen condition.*

Sub categories including putting relevant signs in a category, continual synthesizing of acquired data and extraction of actual and potential problems labeled the second category as establishing nursing diagnosis. The third category of this main category is designing of nursing care plan. This category consists of two sub categories: determining goals and designing of interventions to reach these goals. In regard to the first sub category, determining goals, participants 8 said:

*P8: After hemorrhoidectomy patient education has a great role which needs, special pay attention in his care plan. It prevents from complications like infection and the recurrence of disease.*

The extracted code from this statement was; setting goals in order to prevent disease. Aggregation of this code with codes such as setting goals in order to treat, rehabilitate and control of diseases, formed this sub category. The last category is the evaluation process of implementations. Overall, this category represents the extent of goal attainment. Convergence of codes including; the need to assess effectiveness, compare patients before and after treatments and request for evaluating the amount of goals achievement were formed this category. In regard with code need to assess effectiveness participant 3 said:

*P3: I have to monitor how much my selected interventions have been effective.  
Researcher: how do you measure effectiveness?*

*P3: One way is the measuring of the percentage of goals achievement.*

### Being criterion – based in making clinical decisions

This category was formed from the integration of 3 sub categories including; using different criteria for making decision about selecting nursing care plan, determination of various criteria for problem prioritization and using explicit and clear principles and standards in facing with clinical situations

In regard with using different criteria for making decision about selecting nursing care plan, participant 2 said:

*P2: According to the type and stage of pulmonary edema, my interventions were different. In acute pulmonary edema, my experiences usually say that appropriate positioning, administration of morphine and diuretics would not be effective.*

The delivery of care plan based on the stage of disease was a code, which were extracted from this meaning unit. Other codes for this sub category consists of paying attention to legal out comes, patient's preferences, cost–benefit assessment and the consideration of medical interventions.

The second subcategory, determination various criteria for prioritizing of problems, were formed from the aggregation of codes such as prioritizing of problems based on the nature of problems, work experiences and the emergence of situation. One of the codes, which lie in the third sub category, using explicit and clear principles and standards in facing with clinical situations, is using nursing process as a foundation for professional care. In regard with this code, Participant12 said:

*P12: Caring of surgical patients needs some protocols and frameworks. If nurses do them, quality of care will be improved. Indeed, some points of care for some patients is specific and individualistic which should be extracted by nurses, too. I usually use nursing process as a practical framework in the caring process of patients.*

### Using emotional intelligent in facing with clinical situations

This main category has 3 components; personal skills of emotional intelligence in critical thinker, which have two sub categories including self-awareness and self-believing, inter-personal skills of

emotional intelligence in critical thinker with two sub categories including open mindedness in facing with clinical situations and effective relationships and cooperation and adaptation skills. This category has two sub categories including; stress management and the elimination of anxiety. The extraction process of categories and sub categories summarized in Table 1.

**Personal dispositions for being critical thinker**

This category is composed of 3 sub categories including; skills and dispositions for making revolution, continual challenging with situations, and ethics centrism. A collection of codes such as appealing to change in performance according to research findings, using different and new patterns for assessment risk taking in emergent situations, having great motivation for being the best and

different formed, skills and dispositions for making revolution, sub category. In regard with continuous challenging with situations, subcategory, three codes of challenging with accepted assumptions, skepticism about the outcomes of interventions, and obsessive, careful and scrupulous assessment of signs included. The declarations of participant 4, which led to challenging with accepted assumptions and hypothesis code "are:

*P4: When you introduced the scenario, I thought maybe another diagnosis can be considered.*

*Researcher: like what?*

*P4: Like thromboembolic events.*

*Researcher: how do you feel this?*

*P4: When you work at CCU, physicians come for a short time and put some diagnosis, but they do not consider many possibilities. In these conditions, the role of an expert nurse can be bold.*

**Table 1. The process of extraction categories and sub categories in using emotional intelligent in facing with clinical situations theme.**

Theme	Main category	Sub categories	Codes
Using emotional intelligent in facing with clinical situations	Personal skills of emotional intelligence in critical thinker	self-awareness	Understanding frameworks Awareness about the limitation of nursing profession
		self-believing	Self-believing about special abilities for doing procedures, Selecting and implementing of interventions without the physician's order, Declaration of possibilities and other hypothesis around the patients
	Inter-personal skills of emotional intelligence in critical thinker	open mindedness in facing with clinical situations	Being patient in facing with problems and unusual behaviors Respect to critical and divergent views of patients and other colleagues
		Effective relationships and cooperation.	Nurse – physician interaction in caring process, empathizing with patients and their families, interaction with nurse managers and supervisors ,
	Adaptation skills	stress management	Insisting on practice in the hospital's framework , Supervising care team if needed
		elimination of anxiety	Being patient in facing with problems and unusual behaviors respect to critical and divergent views of patients and other colleagues

Giving attention to patient's privacy, accepting the faults and report errors and empathizing with patients are the important codes, which formed ethics centrism. In regard to the code accept the faults and report errors, participant 5 said:

*P5: Three years ago, one night, when I worked at ICU, an agitated patient fell off the bed. At first, I decided not to report this accident. I thought maybe my head nurse would expel me from the ICU, but my teammates said that the approaches for facing with errors have been changed. They*

*convinced me to fill the error sheet and I did. Now, whenever I review this memory, I am happy and have a sense of security.*

### **Holistic and contextual perspectives in caring processes**

This category consists of 3 sub categories including; understanding the context of situation's occurrences, evidence-based practice and planning for spiritual care. Understanding the context of situation occurrence was extracted from the integration of codes such as effort for identifying and respecting patient's culture and beliefs, understanding the meaning of patient's unusual behaviors. In regard with code understanding, the context of situation occurrence participant 6 said:

*P6: I always try to identify my patient's ethnicity even his beliefs and if it is possible, in my exhibited behaviors and communications, I try to show them that their culture are important to me too.*

The integration of codes like judging based on scientific evidences, using scientific methods for classification of problems, making endeavor for acquiring research findings in nursing, defending from clinical reasons according to scientific evidences, led to the formation of evidence-based practice sub category. The convergence of codes including focusing on religion and ethical principles in delivery of nursing care, listening to patient's concerns respectfully and being at patient's bedside whenever they want resulted in the formation of the third sub category planning for spiritual care. In regard with code listening to patient's concerns respectfully, participant7 said:

*P7: Patients usually have a chaotic situation. They feel lonely and request for help from everyone to restore their health. I always try to give special attention and respect patient and his concerns. Sometimes when I see they have an inferiority sensation because of their disability or something else, I force myself to care for their personality and dignity.*

## **DISCUSSION**

The findings showed that in clinical environments, when nurses encounter with clinical situations, they usually use nursing process, emotional intelligence, holistic and contextual perspectives with being criterion-based to deal with these situations. Indeed, they need some special dispositions like evolutionary and challenging skills with being ethics centrism as a foundation for their reasoning. Geng<sup>22</sup>, in a

quantitative content analysis, studied on 64 descriptions of critical thinking concluded that scholars use judgment, argument, questioning, information processing, problem solving, metacognition, skills and dispositions as an essences of critical thinking. He also claimed that scholar's disciplinary context has a direct effect on their perspectives about this concept<sup>22</sup>. In our study, it was found that critical thinking is a collection of personal dispositions and skills like challenging spirit, evolutionary skills and ethics centrism.

Salsali et al.<sup>23</sup> in qualitative content analysis about critical thinking showed that the main attributes of critical thinking in nursing education include; outcome-centeredness, right and deep thinking about subjects and beyond nursing process. They also stated that critical thinking concept is an art, which can be developed and focuses on beliefs, meanings, assumptions and conflicts<sup>23</sup>. Our results showed that nursing process is a core category and nurses with critical thinking skills usually use nursing process approach in facing with clinical situations. Chabeli, equated the five stages of nursing process with critical thinking skills and cognitive skills<sup>24</sup>. Lunney<sup>25</sup>, emphasized the importance role of critical thinking in making an accurate nursing diagnosis. Forneris<sup>26</sup>, in a systematic review of literature, explored attributes of critical thinking in practice. He showed that reflection, context, dialogue and time are the main attributes of critical thinking in practice. He also claimed that reflection as a process distinguishes what is relevant and determines reasons for our actions<sup>26</sup>. The findings indicated that when nurses encounter with situations, they use analytical skills for data differentiation in order to establish nursing diagnosis. This is very similar to what occurs in reflection.

Forneris and Mc Alpine assert using the contextual learning interventions create a context that stimulate novice nurse's critical thinking<sup>27</sup>. We also showed that nurses usually use the emotional intelligence skills for dealing with situations. Kaya et al<sup>28</sup>, in a longitudinal study, indicated that there was no statistically significant difference between nursing student's critical thinking dispositions and emotional intelligence skills at the beginning and end of year. There was a statistically significant difference between students' critical thinking disposition and emotional intelligence at the beginning of academic year<sup>28</sup>. Madadkhani and Nikoogoftar<sup>29</sup>, in a descriptive study asserted that there are a positive

and significant correlation between emotional intelligence skills and critical thinking dispositions. They also claimed that emotional transparency as a predictor can be used for estimating the changes in critical thinking dispositions<sup>29</sup>. We also received that contextual and holistic perspectives were the important characteristics of nurses with critical thinking skills, which corresponds with the context theme in mentioned research.

Tajvidi et al., in a concept analysis study on critical thinking in nursing education determined dimensions of critical thinking as analyzing, applying standards, confidence, contextual perspective, creativity, flexibility, discriminating, and intuition, logical reasoning, information seeking, open mindedness, preservice and predicting<sup>6</sup>. These dimensions are consistent with our results. For example, dimensions like information seeking, analyzing and predicting are similar to what was found in using nursing process category. Open mindedness also was proposed in this study as a sub category for emotional intelligence category. The findings of Lunny's study, asserted that a set of 17 skills and habits of mind such as inquiry, contextual perspective, creativity and preservice were needed for establishing an accurate nursing diagnosis<sup>25</sup>. These concepts, except preservice, are also in a great harmony with the extracted concepts in this study.

This study provides a clear and understandable definition about critical thinking in clinical nursing in Iran. It was found that in this logical and purposeful process, when a nurse with special personal dispositions like ethics centrism, challenging spirit and revolutionary skills, encounters with a clinical situation, she / he uses holistic and contextual perspectives, evidence-based practice and spiritual care and based on nursing process strategy including; assessment, establishing nursing diagnosis, planning and evaluation and with the help of emotional intelligence skills like self-awareness and self-believing, open mindedness, effective relationship and skills of stress management, she/ he will be able to solve the patient's problems. Due to the direct relationship between CT with the quality of care and nurses' competency, this definition can help practitioners to develop a framework and guidelines for effective performance in practice. This framework usually guarantees competency in nursing.

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