



## An evolved perspective on critical thinking in health care managers: A concept analysis

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### Original Article

#### Abstract

**BACKGROUND:** Leaders are tasked with making decisions that have substantial impact on an organization's well-being. Decision-making requires critical thinking. Clinical environments are becoming more complex and demanding nowadays. Acquisition of critical thinking skills seems crucial in order to provide effective and safe services in these climates. There are various general definitions regarding critical thinking in the context of health care management which mostly have no positive correlation with clinical performance. The aim of this study is to provide an evolved perspective on critical thinking in health care managers.

**METHODS:** Eight-step Rodgers' concept analysis approach was adopted in this analysis to provide a clear definition about critical thinking in health care managers as well as searching and analyzing online databases. The inclusion criterion included articles published during 2005-2022 in English and Persian languages (just in English or in Persian). Finally, 57 articles, 3 dissertations, were included in the analysis.

**RESULTS:** The extracted attributes of critical thinking were as follows: responsibility for strategic planning and thinking, making accurate and hesitant decisions and problem solving skills, using professional and inter professional communication skills, applying knowledge in managing clinical settings, organizing human and financial resources, growing of mindsets and disposition for better performances in health care managers, and supervision for insurance of health quality. Provision of critical thinking leads to positive outcomes such as effective and patient-centered care, creativity, evidence-based practices, and professionalism.

**CONCLUSION:** A clear and comprehensive definition of critical thinking in health care management context was developed. This definition can correct many misconceptions and conceptual misuses about critical thinking in health care managers.

**KEYWORDS:** Health Care Management; Concept Analysis; Critical Thinking

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### Introduction

Due to aging of the population, increased cultural diversity and social differences in societies, climbing rate of chronic disease,

reduction of the financial resources, flash-like technological changes, and the ascendant trend toward patient-centered care and evidence-based practice, the clinical environments are becoming more complex and demanding.<sup>1</sup> Providing safe and effective services in health care settings guided by standards without acquisition of critical thinking skills is impossible.<sup>2</sup> Purvis believed that nurse

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managers who used critical thinking skills in their patients' care demonstrated much more confidence in making and defense of their decisions.<sup>3</sup> Zori et al. also declared that critical thinking skills in managers led to creating an effective job environment and improving professional satisfaction and staff retaining.<sup>4</sup>

The concept of critical thinking in health care management has been defined in various ways. Despite of emphasizing on the important role of critical thinking, there is no comprehensive agreement upon the definition of this concept.<sup>5</sup> Rodgers et al. indicated that expected outcomes related to concepts would be met if the expressions and features were defined clearly.<sup>6</sup> Tajvidi et al. describe critical thinking as a logical, purposeful, and outcome-centered thinking.<sup>7</sup> Bahmanpour et al. define critical thinking concept in nursing as a logical and purposeful process, in which when nurses with special personal dispositions like ethical orientation, challenging spirit, and revolutionary skills, encounter with clinical situations, by using nursing process strategy including assessment, establishing nursing diagnosis, planning, evaluation, and skills like stress management plus holistic performances, solve the patient's problems.<sup>8</sup> Sharples et al. remark critical thinking as the ability to think clearly and rationally about what to do or what to believe.<sup>9</sup> Salmon explains critical thinking as a specific type of thinking, which discriminates relevant from irrelevant data and acts as a measure tool to assess the influence of cultural variables and the rate of rationality of ideas and functions.<sup>10</sup>

Although providing a comprehensive definition which covers all aspects of critical thinking is important, insisting on making an integrated definition about this concept is not accurate.<sup>11</sup> There are two perspectives on how to define critical thinking: first, critical thinking is a general issue in all disciplines, and second, it is a discipline-specific issue and a contextual definition is necessary. Review of literature

indicates that there are no remarkable similarities between the scale and sort of critical thinking among different disciplines; and ambiguities would not disappear unless we provide a clear and contextual explanation.<sup>12, 13</sup> Leaders are tasked with making decisions that have substantial impact on an organization's well-being. Decision-making requires critical thinking. Nowadays, clinical environments are becoming more complex and demanding. Acquisition of critical thinking skills seems crucial in order to provide effective and safe services in these climates. There are various general definitions regarding critical thinking in the context of health care management which mostly have no positive correlation with their performances. This study aimed to provide a contextual and unique definition about the critical thinking in healthcare management.

## Methods

Concept analysis provides a viewpoint that each concept easily can be distinguished from other similar ones. There are various approaches toward concept analysis. Rodger's evolutionary model, using inductive reasoning, inspects attributes, antecedents, consequences, and concept mutation in different contexts and periods. Rodger's concept analysis approach includes eight steps:

1. Identification of expected concept, related terms, and phrases
2. Selecting proper discipline and duration of data gathering
3. Collecting data and setting surrogated terms
4. Identification of related concept
5. Analyzing available data in order to determine antecedents, attributes, and consequences
6. Comparing concept in different disciplines
7. Introducing a case model or example of concept if possible
8. Presenting a hypothesis and recommendation to develop the concept.<sup>14</sup>

*Identification of expected concept, related terms, and phrases:* Concepts and phrases in the first stage of Rodger's concept analysis were chosen based on the sifting and searching articles. The most frequently used terms and phrases were: critical thinking, reflective thinking, decision-making, strategic thinking, critical appraisal, and health care managers.

*Selecting proper discipline and duration for data collection:* We defined the aim of this study as making a clear and comprehensive definition of critical thinking in health care management. Then, the context of health care management was selected as a target discipline for this study. Articles and other informational resources were examined from 2005 to 2022.

*Collecting data and setting surrogated terms:* In this study, scholar databases such as Scopus, Science Direct, SID, ISI, PubMed, EBSCO, Magiran, Tarpaper, and Ovid were searched to find the related articles, books, and additional resources. English and Persian articles published during 2005 to 2022 in health care management context were allowed to be engaged in this study. After an extensive search, totally 164 original articles, 2 dissertations, were chosen. Among 164 related articles, 39 repeated ones were removed and finally, 123 articles, 2 dissertations, were included in this study. Rodgers et al. noted that at least twenty percent of the searched articles should be included in each concept analysis study. In consulting process with other members of research team, it was determined to inspect fifty percent of the whole related articles. Finally, 62 hot papers, two dissertations, were selected. In next step, surrogated terms were recognized. The terms which have the most similarities with the expected concept called; surrogated terms. They sometimes are used instead of the original ones due to their content or nominal similarities; although they are not the exact one.<sup>15</sup> Following terms have been used instead of critical thinking concept chronologically: probing

questioning, reflective thinking, problem definition, decision-making, problem solving, scientific process, skepticism, creative thinking, strategic thinking, critical appraisal, reflective judgment.

*Identification of related terms:* Related concepts include terms and phrases that have specific relations with expected concept. Although both are in touch with each other, there are some differences in their features. In this study, six related concepts including critical analysis, critical appraisal, strategic thinking, interpretation, inferring, and analysis and reflection were recognized. Burls considers the critical appraisal as subtle and systematic examination of research findings and makes a judgment about the usefulness of these results in a clinical situation.<sup>16</sup> One of the most important related terms to critical thinking is analysis. Chao et al. describe analysis as a process of systematic categorizing, examining, and comparing data from different perspectives and considering the possible outcomes of interventions.<sup>17</sup> Cottrell defines critical analysis as evaluating of documents and evidence, assigning their values, and clarification of methods, which leads to judgment.<sup>18</sup> Other extracted related terms from review of literature were inferring and interpretation. Facione explains interpretation as exploring objective and subjective data from informed resources to define problems and extract the meaning of different experience. However, inferring is the ability of reasoning from various data and resources.<sup>19</sup> Reflective thinking is a specific term that can be a related term and also a surrogated term with critical thinking. Akpur considers it as a mechanism clearing the rationality behind the operations, and then mistakes in thinking process tend to be amended effectively.<sup>20</sup>

The study was approved by the Ethics Committee of the Research Administration of Islamic Azad University, Sanandaj Branch,

Sanandaj, Iran (approval number and date: IR.IAU.SDJ.REC.1402.030-2023/07/01).

**Data analysis:** At this stage, the collected data were analyzed by using the content analysis approach. In order to determine the evolution of critical thinking concept along the time, all articles were sorted chronologically according to the year of publication, then the content of each article was read three times. The related terms and phrases were recognized regarding their fitness with the expected concept in the third re-reading. Meaning units were extracted systematically and coded. After the continuous process of reviewing and merging of subcategories, the main categories were produced. Results of assessments lead to extraction of 876 codes. Then, the similar and overlapped codes were eliminated. At last, 213 codes, 40 primary categories, 13 subcategories, and 6 main categories in three sections (antecedents, attributes, consequences) were extracted (Table 1).

## Results

Antecedents are situations that happen before the occurrence of the concept, but the consequences are the results or outcome of concepts.<sup>21</sup> Review of literature indicated that dynamism and complexity of patient's care knowledge and clinical situations, inadequacy of human and financial resources, increased demand for quality

of services, continual changes in health policies and patients' conditions, and emphasizing on quality assurance in delivered services are antecedents which play a major role in occurring the critical thinking.

Attributes are phrases frequently used to describe and identify specific concept's dimensions. Results of this study lead to extraction of 7 main categories including: responsibility for strategic planning and thinking, making accurate and hesitant decisions and problem solving skills, using professional and inter-professional communication skills, applying knowledge in managing of clinical settings, organizing human and financial resources, growing of mindsets and disposition for better performances in health care managers, and supervision for assurance of health quality. The extraction process of primary and main categories is summarized in table 2.

Regarding the results of this study, using critical thinking by health care managers makes their performances more effective, advances cooperative leadership, develops the profession, and improves job environment.

**Introducing hypothesis and recommendations:** Data analysis showed that critical thinking in health care management was a complex and logic process consisting of a collection of skills, dispositions, processes, standards, values, and assumptions.

**Table 1. Extracted main categories**

Antecedents	Attributes	Consequences
Dynamism and complexity of patient's care knowledge and clinical situations	Responsibility for strategic planning and thinking	Effective performances
Inadequacy of human and financial resources	Making accurate and hesitant decisions and problem solving skills	Professionalism
Increased demand for quality and quality insurance	Using professional and inter-professional communication skills	Advances of cooperative leadership
Changes in health policies and patients' condition	Applying knowledge in managing of clinical settings	Improvement of job environment
Emphasizing on quality assurance in delivered services	Organizing human and financial resources	-
-	Growing of mindsets and disposition for better performances in health care managers	-
-	Supervision for assurance of health quality	-

**Table 2. The extraction process of 3 main attributes**

Meaning units	Primary categories	Main categories
Knowledge co-creation/combining of knowledge/knowledge accumulation and transformation/identification of hidden knowledge/validation/knowledge analyzing/coding of organizational knowledge	Knowledge processing	Applying knowledge in managing of clinical settings
Share of knowledge and experiences/team work/lifelong learning/habit formation and support/conduction of motivation system	Retention of knowledge in employee	
Making an organizational decision/focusing on new products and services/evaluation of decision based on organization's knowledge	Application of knowledge in organization	
Problem detection/relevant data collection about the problem/credibility of information sources/analyzing the problem (root cause)	Problem assessment	Making accurate and hesitant decisions and problem solving skills
Having a critical perspective/evaluating the problem situation from different perspectives/preventing negative effects of emotions on decisions/negotiation with people affected by decision/considering moral and ethical outcomes of decisions/having enough knowledge to recognize threats/determining the functional tasks: simple decision-making, (ii) complex decision-making, and (ii) specific decision-making/attention to two challenges: need for rapid decision-making and the limits of human rational information processing capacities	Establishing an effective decision environment	
Choosing the mode of decision: analytical decisions, intuitive decision, analytical-intuitive decision/providing the alternatives/innovative thinking methods for alternative solutions/comparing alternatives/attention to the best alternatives which generally best fit the overall goals, values of the enterprise, providing desired results, and using the least resources/making a sensible choice among the multiple alternatives/anticipating the decision outcome/implementation of decision/evaluation of the impact of decision in real situation	Formulation of decision	
Meaningful questioning/articulating idea with clarity/accessing relevant information/organizing ideas/prioritization/considering more than one point of view/evaluation and appraisal/mapping a process/self-reflection	Cognitive dispositions	Growing of mindsets and disposition for better performances in health care managers
Involving in challenges/communication skills/listening actively/motivation/courage/risk taking/resisting unnecessary urgency/persuasion/insistency	Affective dispositions	

Due to the dynamicity of healthcare settings and complexity of clinical situations, inadequacy of human and financial resources, increased demand for quality and quality insurance, continual changes in health policies, and request for a profession-oriented system, leaders need to have holistic skills such as responsibility for strategic planning and thinking, making accurate and hesitant decisions, problem solving skills, using professional and inter-professional

communication skills, applying knowledge in managing of clinical settings, organizing human and financial resources, growing of mindsets and disposition for better performances in health care managers, and supervision for insurance of health quality. Acquiring and applying these skills empowers health care managers in delivering effective and patient-centered services which creativity and evidence are at its core, and finally leads to professionalism, as well as job satisfaction.

## Discussion

The aim of this study was to provide a clear and comprehensive explanation of critical thinking in the context of health care management. Findings show that dynamicity of clinical situations, continual changes in health policies or the patient's condition, inadequacy of human and financial resources, and increased demand for quality and quality insurance and critical thinking will guide leaders' practices. Critical thinking is a complex and logical concept which comes from integration of a collection of skills, standards, values, and dispositions. We also perceived that there were 7 attributes for critical thinking in health care management context, including: responsibility for strategic planning and thinking, making accurate and hesitant decisions and problem solving skills, using professional and inter-professional communication skills, applying knowledge in managing of clinical settings, organizing human and financial resources, growing of mindsets and disposition for better performances in health care managers, and supervision for insurance of health quality. Utilization of critical thinking leads to effective services, professional development, job satisfaction, and cooperative leadership.

Critical thinking in health care management is usually considered as a skill concentrating on the problem solving. It provides an opportunity for professional leaders in order to solve the patient's problem.<sup>22</sup> Haase showed that many indicators and features of critical thinking was similar to various stages of decision-making and problem solving process in management.<sup>23</sup> Professional communication skills were another extracted attribute found in this study. Health care management is a profession which needs effective communication of managers with other health members and patients and acquiring a high level of emotional intelligence skills is essential.<sup>24</sup> Madadkhani and Nikoogoftar

indicated that there was a positive correlation between critical thinking dispositions and emotional intelligence. They also perceived that elements of emotional intelligence and emotional transparency could be used for predicting the critical thinking in health professions.<sup>25</sup> Hester pointed out that critical thinking was a requirement for successful leadership in 21<sup>st</sup> century. He listed a mindset including adopting different perspectives, seeking potentials, managing ambiguities, focusing on growth, and being goal-oriented as the most important dispositions which leaders must acquire.<sup>26</sup> Ricci declared that executives could take following steps in pursuing critical thinking including: being aware of situational context, evaluating decision implication, listening to the responses, using open mindedness and flexibility in decision-making, and evaluating others' assumption before challenging them.<sup>27</sup> Matthews theorized that critical thinking was the brick and mortar aspect of strategic planning process. Company strategy is a grandstand for achieving company purpose with available and critical resources.<sup>28</sup> Profetto-McGrath has shown that one of the most important outcomes of critical thinking is evidence-based practice occurring in a context that analytical skills and open mindedness is encouraged.<sup>29</sup> Indrasiene *et al.* defined the knowledge management as the clear strategy, tools, and practices used to make knowledge part of an organization's resources.<sup>30</sup> World Health Organization (WHO) declared knowledge management was clearly focused on fact-based policies and decision-making. Therefore, critical thinking is used as a tool to achieve this goal.<sup>31</sup> Brooks and shepherd believed that critical thinking brought out advanced diagnostic abilities and choosing the best interventions. Indeed, it causes the utilization of evidence in practices. Then the quality of services will be improved and the theory-practice gap will be decreased.<sup>32</sup> Health care managers with critical

thinking abilities are much more interested to use their research findings in practice which leads to knowledge utilization.<sup>33</sup> Critical thinking also improves delegation, interpersonal communications, and team working among health care managers.<sup>34</sup> By using critical thinking skills, nurse managers will be able to create a positive job environment, then job satisfaction, staff retaining, and practices will be improved.<sup>35</sup> According to research findings, health care managers which think critically have a crucial role in building this discipline as a profession and if it is replaced with passive or reactive thinking, the growth opportunities for staffs will be appeared.<sup>36</sup>

Excluding of non-English and Persian articles, elimination of forty percent of searched articles according to recommended framework, considering a timeframe for searching of resources, and release of some codes which did not have capability to be included in categories were the main limitations of this study.

### Conclusion

The findings can correct many misconceptions and misuses of critical thinking concept in health care management context. This conceptual definition of critical thinking can help policy maskers to develop a framework and guideline for effective performance of managers in practice. This framework also can be used for evaluation of competency in health care management.

### Conflict of Interests

Authors have no conflict of interests.

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