

# Investigating the Relationship between Critical Thinking and Self-efficacy of Healthcare Managers of Ahvaz University of Medical Sciences

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## ABSTRACT

**Background:** Critical thinking and self-efficacy play an important role in achieving the workplace. This study aimed to determine the relationship between critical thinking and self-efficacy in healthcare managers of Ahvaz University of Medical Sciences.

**Methods:** This descriptive correlational study was conducted on 115 healthcare managers affiliated to Ahvaz University of Medical Sciences using census sampling method in 2019. Data were collected using standard Ricketts' Critical Thinking Questionnaire and Sherer General Self-Efficacy Scale and were analyzed by descriptive and analytical statistics (Spearman correlation coefficient) using SPSS 24 software.

**Results:** There was a significant relationship between mean scores of critical thinking and self-efficacy of health managers ( $P < 0.001$ ) and self-efficacy with the beta coefficient of 0.436 could significantly predict critical thinking. The mean critical thinking score of healthcare managers was  $125.96 \pm 10.62$ , and the mean self-efficacy score of healthcare managers was  $34.67 \pm 6.87$ .

**Conclusion:** According to the research findings, critical thinking has a direct and positive relationship with managers' self-efficacy. To apply these findings, it is recommended that authorities take necessary measures to strengthen and develop critical thinking among healthcare managers to establish a stronger foundation for enhancing their self-efficacy.

**Keywords:** Critical Thinking, Self-Efficacy, Managers, Healthcare

## Introduction

Critical thinking is one of the most fundamental skills in today's society, and the lack of this ability can prevent people from effective participation in society (Jahani et al., 2023). Human resources are the most important factor and capital for each organization. Critical thinking ability and its tendency to apply it has always been complex in organizations. Organizations need managers and employees with high critical thinking capabilities to achieve organizational success (Pourmohammadi et al., 2024). Today's organizations need personnel and manager to understand and use principles of critical thinking, to reform their mistakes, and to be targeted in thinking. Critical thinking is defined as the right way to think an important cognitive skill, a problem-solving. The foundation for critical thinking describes critical thinking as a discipline of thought that includes elements such as purpose and problem identification, concept clarity, discovery of assumptions, views, recognition of applications/consequences, evidence validation, and reflection (Seibert, 2021; Sharifi, 2024). Critical thinking almost means thoughtful and rational thinking that focuses on deciding to do something or belief (Heong et al., 2020). Critical thinking like reflective thinking helps people decide what to believe and what to do. A critical thinker has possible options in his/her mind and judges and decides with full knowledge of information validity (Willers et al., 2021). Also, according to the American Philosophy Association, critical thinking is defined as a set of cognitive skills and desires (M. H. Sadeghi et al., 2024). Critical thinking is the application of thinking skills, analyzing and combining information, identifying and solving problem and evaluating it, and each of these is through metacognitive skills and testing solutions suggested for problems (Pourmohammadi et al., 2024). This kind of thinking allows people to become active members of social groups by understanding their feelings and others as well as awareness of environmental needs. For this reason, many researchers believe that critical thinking is one of the most valuable skills to be acquired (Chen &

Chuang, 2021). Studies have shown that education and development of human and conceptual skills such as critical thinking for supervisors and managers in health centers can reduce job stress and improve efficiency (M. H. Sadeghi et al., 2024).

On the other hand, one of the individual factors that have been particularly considered in the field of successful work in organizations is self-efficacy. Human resources are the most important factor in the effectiveness and productivity of social systems such as health organizations and healthcare organizations cannot achieve success without having a self-efficacious workforce (Alavi et al., 2020). Self-efficacy is a vital factor in success or failure throughout human life and determines how much people take. On the other hand, it is one of the individual factors that have been particularly considered in the field of successfully doing their jobs, how to exercise in various situations, and to what extent they resist when faced with difficulties. These beliefs affect patterns of thought and emotional action. People with low self-efficacy may believe that problems are incomprehensible, and this view leads to stress, depression, and insecurity. On the other hand, the great efficiency of itself when approaching work and difficult actions helps to create a sense of easy work (Emine Derya, 2020; Kahe et al., 2018). Many human behaviors are aroused and controlled by self-influencing mechanisms, among which, none is more important than believing in personal self-efficacy. Self-efficacy is one of the practical concepts in Bandura's social learning-cognitive theory about professional behavior (Alavi et al., 2016). Self-efficacy reflects one's confidence and beliefs about their ability to perform behaviors that will have certain consequences. The high level of self-efficacy results in the effective use of cognitive, metacognitive, and subsequent functions in many areas (Alavi et al., 2017).

Critical thinking in organizational management has been introduced as a necessity in recent decades. This necessity is in fact a modern and multifaceted skill that helps managers accurately evaluate the

positions and make quality decision-making, especially in resolving emerging challenges and managing uncertainty space, and critical thinking is more than ever needed by managers at different organizational levels to help them more compatible and flexible (I. sadeghi et al., 2024). The importance of critical thinking awareness and its effects on managers is that it can increase favorable changes in the environment of organizations. Therefore, being aware of the effects of critical thinking on self-efficacy is essential, given that self-efficacy plays an important role in professional performance. Given the position and role of managers in medical universities, especially in planning, training, monitoring, and implementing health and community-related programs and issues, and considering that studies have rarely addressed critical thinking and its relevance to self-efficacy in managers, especially health managers, this study aimed to examine the relationship between critical thinking and self-efficacy in health managers of Ahvaz University of Medical Sciences.

### Methods

This descriptive correlational study was carried out on 115 healthcare managers in three different levels of Ahvaz University of Medical Sciences management in 2019 selected by census sampling method. Finally, 93 managers responded to the questionnaires. Sample entry criteria included having a minimum associate degree, minimum work experience, having a management post, and a desire to participate in the study. After receiving a letter from Islamic Azad University of Shahrekord Branch and referring to the Deputy Director of Research of Ahvaz University of Medical Sciences, questionnaires were distributed. Before starting the study, the subject, the method of implementation, and the purpose of the study were explained to the participants and their informed consent was obtained. It was also assured that the private and personal information of volunteers would be protected.

Data gathering tools in this study were a demographic questionnaire (age, sex, education, years of work experience, management level) and standard questionnaire: Ricketts' Critical Thinking Questionnaire (2003) to measure critical thinking. This questionnaire has 33 items with a 1 to 5 Likert rating scale (I fully agree, I agree, I do not know, disagree, and completely disagree). The range of scores is from 33 to 165. The low limit of the scores is 33, the average score is 99, and the high score is 165. The validity and reliability of this tool has been approved. This questionnaire was translated and psychometrically tested by Pakmehr et al. in Iran and the instrumental validity was approved using content validity and construct validity and the reliability of Cronbach's alpha coefficient was 0.7 (pakmehr et al., 2013). Also in the study of Moein et al., the reliability coefficient of this tool was reported 0.69 (Moein et al., 2021).

The Sherer General Self-Efficacy Scale has 17 questions and is based on a 5-point Likert scale (score 1 to 5). Questions 1, 3, 8, 9, 13, and 15 are scored from right to left and the rest of the questions are scored from left to right. The range of scores is from 17 to 85. The validity and reliability of this questionnaire have been confirmed in many studies in Iran. The Iranian sample showed that the validity and reliability of the Sherer Self-efficacy questionnaire were acceptable, with a coefficient of alpha 0.81 (Gangi & Farahani, 2010).

Data analysis was done by SPSS24 software using descriptive statistics (mean, standard deviation, percentage) and inferential methods (Spearman correlation coefficient).

### Results

Data analysis showed that 51 (54.8%) samples were female. The mean age of participants was  $43.56 \pm 6.56$  and their mean work experience was  $17.45 \pm 6.45$  years. The majority of the participants at the operational level of management (48 people) (51/6%) (Table 1).

**Table 1.** Demographic properties of health managers

		Frequency	Percent
Management level	Top	8	8.6
	Middle	37	39.8
	Operational	48	51.6
Education	Associate	3	3.2
	BSN	54	58.1
	MSc	24	25.8
	MD/PHD	12	12.9

The mean critical thinking score of healthcare managers in the present study was  $125.96 \pm 10.62$

and the mean self-efficacy score of healthcare managers was  $34.67 \pm 6.87$  (Table 2).

**Table 2.** Mean critical thinking and self-efficacy score in health managers

	Mean	SD	Min	Max
Critical thinking	125.96	10.62	86	154
Self-efficacy	34.67	6.87	18	50

The results of colmogorov-samirnov test showed that the data had abnormal distribution. Spearman correlation test results showed that there was a

positive and significant relationship between critical thinking and self-efficacy ( $r = 0.452$ ,  $P < 0.001$ ) (Table 3).

**Table 3.** Correlation coefficient between critical thinking and self-efficacy score in health managers

		Self-efficacy
Critical thinking	N	93
	Spearman Correlation	0.452
	P value	0<001

Based on the results of simultaneous regression test, self-efficacy with beta coefficient of 0.436 could significantly predict critical thinking in Ahwaz University of Medical Sciences managers.

However, the variable of management levels could not significantly predict critical thinking in Ahwaz University of Medical Sciences managers (Table 4).

**Table 4.** Regression coefficient of self-efficacy and level management with critical thinking of healthcare managers of Ahwaz University of Medical Sciences

	B	S.E	Beta	t	Sig
Constant	156.205	6.725		23.228	0.001
Self-efficacy	-0.730	0.155	-0.436	-4.427	0.001
Management level	-2.354	1.611	-0.143	-1.461	0.148

### Discussion

The results of the present study showed that there was a significant relationship between critical thinking and self-efficacy score, and self-efficacy, with a beta coefficient of 0.436, could significantly

predict critical thinking in managers at Ahwaz University of Medical Sciences. According to the results of the present study, managers with higher critical thinking had more self-efficacy. The findings also showed that the mean critical

thinking score was higher than the average. The mean self-efficacy score of health managers in this study was lower than the average. In this regard, the findings of the research by Pérez et al. showed the critical thinking of nursing managers at high level (Zuriguél- Pérez et al., 2018). Unfortunately, a study that has precisely examined the relationship between these two variables in the community of healthcare managers was not found by the author. But in this context, the study of Khoshamiaw et al. (2022) showed that there was a positive relationship between critical thinking and professional self-efficacy of the staff of Petro Niroo ( Khoshamia et al., 2022). Based on the findings of Khajuvand et al. (2020), it can be acknowledged that organizational managers are more successful by strengthening factors that contribute to the formation and promotion of critical thinking in the organization (Khajevand et al., 2020). Self-efficacy beliefs were mediated in the relationship between critical thinking style and clinical decision-making in the nursing staff and self-efficacy beliefs increased the relationship between critical thinking style and clinical decision-making (Nejati et al., 2023). In this regard, the results of the study by Eisanazar et al. (1401) showed that there is a positive and significant correlation between critical thinking and self-efficacy of medical students (Eisanazar et al., 2022). Lin et al. (2022) also showed that self-employment education enhances critical thinking (Lin et al., 2020). In this regard, the study showed that critical thinking was able to significantly predict student self-efficacy (Motaghi et al., 2018). There was also a positive and significant statistical correlation between critical thinking skills with self-efficacy of nursing students, and this study emphasized that nurturing high-level thinking skills as one of the important missions of higher education requires the use of appropriate approaches that lead to the development of this thinking (Orujlu & Hemmati Maslakkpak, 2017). In this context, the results showed that high critical thinking of nursing managers could create a positive and good work environment and provide

good opportunities to improve leadership and effectiveness in nursing managers to enhance the quality and safe care of the patient (Zori et al., 2010). Btoush et al. (2025) reported that there is a relationship between self-efficacy and clinical decision-making of nurses (Al Btoush et al., 2025). On the other hand, critical thinking is also associated with decision-making, which indirectly confirms the results of the present study. In fact, critical thinking as a consequence of a multifaceted skill plays a central role in the success of managers in dealing with complexities and uncertainties of the environment, and helps to succeed in everything that results in judging and making decisions on beliefs, actions, and subjects, and enables the individual to consider the individual as a matter of fact (Moshtaghi khozani et al., 2023; Wang & Jia, 2023; Yücel, 2025).

When managers possess critical thinking skills, they do not remain indifferent to their organizational environment. Instead, they are considered dynamic and proactive individuals, enhancing their self-efficacy. Through learning critical thinking, individuals develop greater proficiency in various areas and demonstrate improved performance. Consequently, it is likely that by recalling personal experiences, generalizing them to similar situations, and achieving favorable outcomes, they reinforce their critical thinking abilities through positive feedback. Managers with strong critical thinking skills, relying on reasoning and personal capabilities, can guide themselves and others toward making rational decisions.

One of the limitations of this study is non-randomization sampling and therefore it should be cautious in generalizing the results to the same community. Therefore, it is recommended to do similar research in larger environments and by random sampling method, which may have different results.

### Conclusion

Based on the research findings, it can be concluded that there is a link between mean score of critical thinking with self-efficacy in health

manager at different levels of Ahvaz University of Medical Sciences. Accordingly, the position and criticism of critical thinking in health organizations are increasingly prominent. Given that critical thinking can be learned, it is suggested that the Educational and Human Capital Management of the University of Medical Sciences increase critical thinking of managers by conducting interventions such as problem-based learning teaching and other new teaching methods, and by improving critical thinking to enhance managers' self-efficacy.

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### Conflicts of interest

The authors declare no conflict of interest.

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### Authors' Contributions

A. P. and A. A.; conceptualized the study, A. A.; conducted methodology, A. P., A.A., A.T; made formal analysis, A. P; did the investigation, A. P; did data curation, A. A; wrote the original draft, A. A; conducted review and editing, A. T; found the resources and, A. A, A.T; did the supervision. All the authors read and approved the final manuscript.

### Ethical Considerations

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of Isfahan (Khorasgan) Islamic Azad University.

### Code of Ethics

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