

# The Mediating Role of Stress-Coping Strategies on the Relationship between Thinking Styles and Mental Health of Nursing and Midwifery Students

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## ABSTRACT

**Background & aim:** Mental health of medical students is important for working in clinical settings; therefore, it is necessary to know effective mediators in mental health. This study aimed to investigate the mediating role of coping strategies on the relationship between the thinking styles and mental health of nursing and midwifery students.

**Methods:** In this descriptive correlational study, a total of 180 nursing and midwifery students were selected from Islamic Azad University of Birjand, Iran in 2018. Data were collected using valid and reliable questionnaires including personal and social data, general health, as well as thinking styles and coping strategies of Lazarus-Folkman. The questionnaires were completed on a self-report basis by the students. Data were analyzed by AMOS software 20 version and statistical tests, including t-test and correlation matrix.

**Results:** Legal thinking did not have a significant effect on mental health through a problem-oriented strategy ( $P=0.217$ ); however, it had a significant negative relationship with mental health through an emotional-oriented strategy ( $P=0/006$ ). The executive thinking had a positive effect on mental health through a problem-oriented strategy ( $P<0.001$ ), and a negative relationship with mental health through an emotional-oriented strategy ( $P<0.001$ ). Furthermore, judicial thinking had a positive effect on mental health through a problem-oriented strategy ( $P=0.046$ ), and a significant negative relationship with mental health through an emotional-oriented strategy ( $P=0.048$ ).

**Conclusion:** Thinking styles had a meaningful relationship with the mediation of coping strategies with mental health. Emotion-Oriented and problem-oriented strategies created negative and positive relationships between thinking styles and mental health of the students, respectively.

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## Introduction

Student age is stressful due to entering a new educational environment, engaging in economic issues and future of the job, and sometimes being away from the family (1). Student health and attention to mental-psychological needs are very important because students are at risk due to some stressors and impact of the environment (2). Mohammadi et al. (2012) in a study titled "Relationship between Sleep Quality and Mental Health among Dormitory Students" concluded that there was a significant

relationship between sleep quality and mental health among students. In the aforementioned study, the prevalence rates of unsatisfactory sleep quality and maladaptive status were reported as 73.3% and 34.3%, respectively (2).

Mental health of medical students is important for working in the clinical setting and their major role in dealing with patients (3). According to the evidence, it was shown that medical students, such as nursing and midwifery students, experience several

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stressors during studying years. Medical students, especially the students of Nursing and Midwifery Faculty face numerous stressful factors due to their high psychological demands and low decision-making range in their profession and need to learn a variety of knowledge and skills for their various roles (4, 5). Other stressful effects on the students include absenteeism, physical complaints, and loss of professional skills (6).

In a study conducted by Ambari et al. (2013), it was also pointed out that stressors, such as the environment of clinical education, exposure to patients, and intensiveness of curriculum units in internships, lead to an increase in mental and emotional distress. In addition, there has been a negative impact on the mental health of these students (7). In the long run, the combination of these factors has resulted in lowering self-esteem among students, affecting their academic success, and ultimately endangering the personal and professional development of individuals (8).

In general, stress is experienced by all people, and it should be noted that some levels of stress can be effective in the improvement of performance (9, 10). However, high-stress levels have many consequences, including physical and psychological illnesses, such as anxiety, depression, sleep disorders, restlessness, irritability, forgetfulness, abnormal fatigue, loss of resistance and frequent infections, headache, decreased concentration, memory impairment, and reduced ability to solve a problem (11, 12).

Coping with stress is a dynamic and ongoing process that helps with the growth, survival, preservation, and integrity of individuals (13). Stress-Coping strategies are cognitive and behavioral efforts that people use in stressful situations to cope with their problems and play an essential and decisive role in their physical and mental health. Effective coping strategies make the individual's response to high levels of stress decrease, and its harmful effects are tempered. In addition, each person responds to a specific style in dealing with stressful situations (8, 14, 15). Choosing suitable coping strategies against psychological pressures can reduce the impact of stress on mental health leading to greater personal adjustment (16, 17).

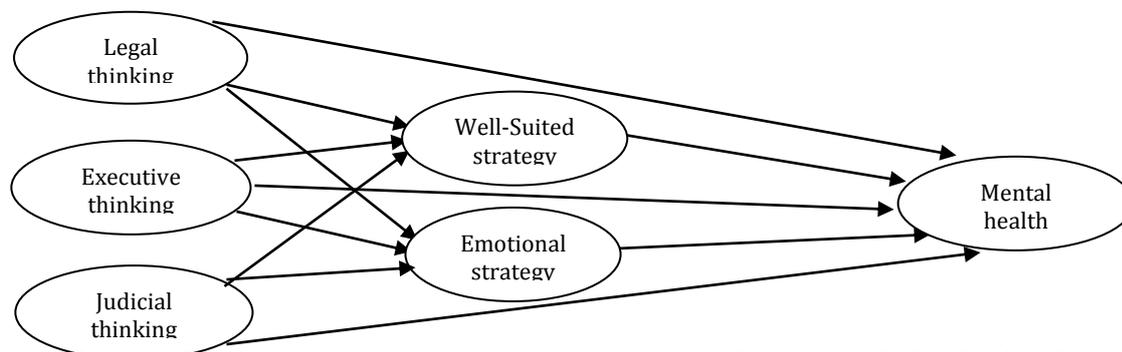
New insights on stress, instead of focusing on

the nature of stress, emphasize the role of individual psychological resources in confronting stressors (4), one of which is the thinking style of a person. The thinking style is not an ability but refers to how individuals use their abilities. People may be practically the same in their abilities but different in thinking styles (18, 19, 20). Briefly, in the context of functionality, a person with a legislative style tends to create, invent, design, and perform things in his own way. A person with an executive style performs what is said to him/her, and a person with a judiciary style tends to judge and evaluate people and things (14, 21). On the other hand, people with different thinking styles use different methods to deal with issues, which can also be generalized to stress-coping strategies.

In a study carried out by Omidvar et al (2008), in order to investigate the relationship between thinking styles and coping strategies in students of Shiraz University, the results indicated a significant relationship between these two variables in students (14). In different studies, the relationship between thinking style and coping strategies and relationship between coping strategies and mental health have been separately addressed.

Determination of the effective mediator variables on mental health can be a great help in developing educational programs for the improvement of mental health, especially in the students of Nursing and Midwifery who are at risk of losing mental health due to special circumstances. However, up to now, no study has been performed on the mediating role of coping strategies. In addition, other psychiatric disorders can reduce the academic performance of this valuable group (22). Therefore, the present study aimed to investigate the mediating role of coping strategies in the relationship between thinking styles and mental health of nursing and midwifery students of Islamic Azad University of Birjand, Iran.

As mentioned above, this study aimed to investigate the mediating role of coping strategies in the relationship between thinking styles and mental health of nursing and midwifery students of the Islamic Azad University of Birjand (Figure 1).



**Figure 1.** Hypothetical model

## Materials and Methods

The present study was fundamental in terms of the purpose and descriptive correlational considering the method. In this study, path analysis was used to investigate the role of mediators of coping strategies with stress in the relationship between mental styles and mental health. Size of the community (i.e., all the undergraduate students in the field of nursing and midwifery of the University of Birjand, from the third semester onwards) was 300. According to Morgan Table, 180 students were selected based on the size of the students of each of the two disciplines.

The tools used in this study were as follows:

**Individual and Social Information Questionnaire:** It contains 10 items that will be completed by research units at the beginning of the study.

**General Health Questionnaire:** It consists of 28 items provided by Goldberg and Hiller (1979), as well as four subscales, and each scale has 7 items. The scales include 1) Physical symptoms scale, 2) Anxiety and sleep disturbance scale, 3) Social functioning scale, and 4) Signs of depression scale. Validity of this questionnaire was confirmed using the Middlesex Hospital Questionnaire (correlation coefficient of 0.55), and correlation coefficients between the subscales of this questionnaire and total score varied from 0.72 to 0.87.

**Thinking Style Questionnaire:** This questionnaire is based on Sternberg and Wagner's Thinking Styles Questionnaire (1997) that measures the modes of thinking, including three types of legislative, executive, and judicial thinking styles. The questionnaire has 24 items in which each style is measured with 8 items (i.e.,

legal thinking: 1, 3, 6, 10, 13, 18, 19, and 22; executive thinking: 2, 4, 5, 9, 11, 16, 17, and 20; judicial thinking: 7, 8, 12, 14, 15, 20, 23, and 24.). Shokri et al, (2006) have reported Cronbach's alpha coefficients as 0.78, 0.64, and 0.62, for legislative, executive, and judicial thinking styles in Tarbiat Moallem University students, respectively. In the present study, the reliability of this questionnaire with Cronbach's alpha coefficient was calculated at 0.82, 0.79, and 0.88 for legal, executive, and legal thinking styles, respectively.

**Lazarus-Folkman Coping Strategies Questionnaire:** The questionnaire was prepared by Lazarus and Folkman (1984) with 66 articles that cover the following eight levels classified into two clusters of problem-oriented and exciting circuit-coping strategies:

A) Problem-Oriented strategies: Search for social support, responsibility, positive reassessment, and problem-solving

B) Emotion-Oriented strategies: Confrontation, keeping away, restraint, and escape-avoidance

Lazarus has reported a credit of 0.66 to 0.79 for each of the confrontational procedures. Moreover, Aghajani (1996) announced a credit of 80% for each of the approach methods. In the present study, the reliability of this questionnaire for problem-oriented strategy and emotional strategy was calculated to be 0.88 and 0.90, respectively.

After referring to Birjand University of Medical Sciences and obtaining information about the number of male and female students in Nursing and Midwifery Faculty, the population size was estimated at 300. Then, through observing the ratio of each of the nursing and midwifery students the subjects were selected based on the convenience sampling. After a brief

interview, justification of the students, and ensuring them of the confidentiality terms, the questionnaires of thinking style and stress-coping skills were given to the students with a mental health questionnaire. In addition, they were asked to respond to the questionnaire to the fullest extent.

Data analysis was conducted using descriptive statistics (i.e., mean and standard deviation) and inferential statistics (i.e., path analysis). Data were analyzed by AMOS software (version 20) and statistical tests, including t-test and correlation matrix.

**Table 1.** Matrix of correlation coefficients of main study variables

Mental health	Emotional strategy	Well-Suited strategy	Judicial thinking	Executive thinking	Legal thinking	Variable
Legal thinking	1.000					
Executive thinking	-0.640**	1.000				
Judicial thinking	0.762**	0.624**	1.000			
Well-Suited strategy	0.127*	0.138*	0.138*	1.000		
Emotional strategy	0.111*	0.105*	0.171*	-0.725**	1.000	
Mental health	-0.326**	-0.262*	-0.299**	0.192*	-0.402**	1.000

At 0.01% level \*\*

At 0.05% level\*

The obtained results showed a relationship between the styles of thinking (i.e., legal, executive, and judicial) and coping strategies (i.e., problem-oriented and emotional) and mental health based on the output of Amos software (version 20). All calculated factor loads were higher than 0.3, and therefore the main variables were well explained by the studied items (Figure 2).

Results of fitting goodness indices were high in structural equations. Several of the most important indicators were examined in this study (Table 2).

The Chi-squared statistics index was divided by its degree of freedom with a value of 981/1 lower than 3. In addition, a very important root mean square error of approximation index with a value of 0.074 was lower than 0.08, and its evaluation was in desirable condition. Other indices, including comparative fit index, goodness fit index, and incremental fit index, were in the optimal situation. Therefore, the fit of goodness of this research model was confirmed.

## Results

Results of correlation coefficients between the main variables, namely legal thinking, executive thinking, judicial thinking, problem-solving strategy, emotional strategy, and mental health, showed that there was a positive and significant correlation among all these variables. The highest correlation was between legal thinking and judicial thinking ( $r=0.76$ ), as well as emotional strategy and problem-oriented strategy ( $P=0.72$ ) (Table 1).

One of the most important findings of the present study was that legal thinking did not have a significant effect on mental health through a problem-oriented strategy ( $P=0.217$ ). However, through an emotional-oriented strategy with a value of -347%, legal thinking had a significant negative relationship with mental health ( $P=0/006$ ). The results also indicated that executive thinking had a positive effect on mental health through a problem-oriented strategy with a value of 0/483 ( $P<0.001$ ).

Furthermore, executive thinking had a significant negative relationship with mental health through an emotional strategy with a value of -0/418 ( $P<0.001$ ). The findings also revealed that judicial thinking had a positive effect on mental health through a problem-oriented strategy with a value of 0/267 ( $P=0.046$ ). Moreover, through an emotional strategy with a value of -0/252, judicial thinking had a significant negative relationship with mental health ( $P=0.048$ ) (Table 3).

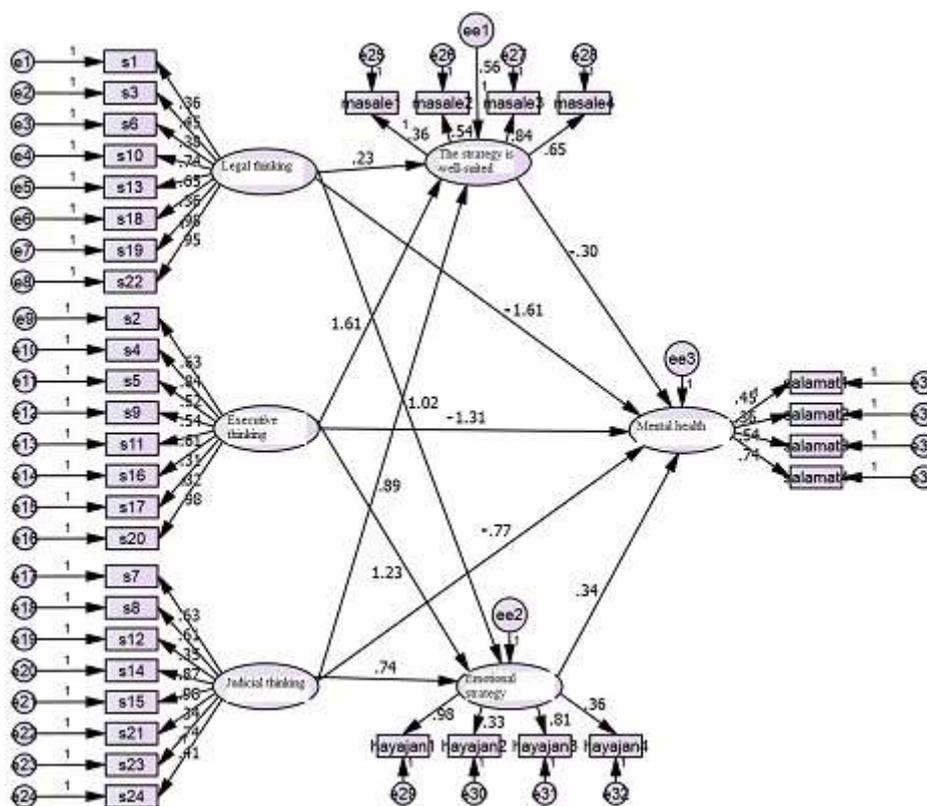


Figure 2. Standard model of coefficients

Table 2. Indices of model fit

Fit index	Acceptable range	Observed value	Evaluated fit index
$\chi^2/df$	$\leq 3$	1.891	Suitable
RMSEA	$< 0.08$	0.074	Suitable
SRMR	$< 0.08$	0.045	Suitable
Comparative fit index	$> 0.90$	0.919	Suitable
Goodness fit index	$> 0.90$	0.940	Suitable
Incremental fit index	$> 0.90$	0.924	Suitable

RMSEA: Root Mean Square Error of Approximation

Table 3. Path coefficients of thinking styles through coping strategies toward mental health

route	Standard factor	t	P-value
Legal thinking → Well-Suited strategy → Mental health	0.069	1.236	0.217
Legal thinking → Emotional strategy → Mental health	-0.347	2.741	0.006
Executive thinking → Well-Suited strategy → Mental health	0.483	3.899	$< 0.001$
Executive thinking → Emotional strategy → Mental health	-0.418	3.789	$< 0.001$
Judicial thinking → Well-Suited strategy → Mental health	0.267	2.002	0.046
Judicial thinking → Emotional strategy → Mental health	-0.252	1.980	0.048

## **Discussion**

Purpose of this study was to determine the mediating role of stress-coping strategies in the relationship between thinking styles and mental health of the nursing and midwifery students. Although the results of previous studies have been linked in thinking styles and mental health, no study has directly studied the relationship between mental health and thinking style considering the mediating role of coping strategies up to now. For this reason, the present study, by the presentation of a hypothetical model, attempted to explain the relationship between thinking styles, mental health, and coping strategies.

In this study, the hypothesized model based on stress-coping strategies was considered a mediator variable in the relationship between mental health and thinking styles. Results of this study showed that problem-oriented and emotional-oriented coping strategies had a significant intermediate role in the relationship between mental health and thinking styles. In order to explain the aforementioned findings, to some extent, previous studies and theoretical models have been used in terms of the nature and relationship of these variables.

Robert Sternberg, in his theory of subjective government, explains the styles of thinking and notes that thinking styles are of special importance. However, less attention has been paid to staying focused on the performance of individuals due to unknowns (23). Considering that thinking styles or preferences of thinking are different in people, naturally the actions and abilities of each individual will also vary according to his preferential styles. Therefore, recognizing the concept of thinking styles and understanding the relationship between these styles and abilities of individuals are very important.

Studying the thinking styles helps the person to understand why some activities are appropriate for him/her, and some others are not. In addition, why an individual enjoys doing a profession, while in doing something else, the person does not feel the same (23). Considering what mentioned before, it seems that thinking styles or learning styles are more than intelligence that explains the quality and level of learning of students. Moreover, success in

different academic disciplines depends on learners' thinking styles.

Results of the present study are consistent with the findings of Omidvar et al. (2008). However, the results are inconsistent with the finding that legal thinking has no meaningful relationship with emotional and problem-oriented coping strategies. People with a legal thinking style tend to work alone and independently. In addition, they are able to organize their efforts in carrying out projects and solving problems, and they want to determine their own goals (24). Moreover, the results of the present study showed that both problem-oriented coping strategies and excitement are reliable predictors for mental health that is consistent with the results of studies by Hasanzadeh et al. (2014) and Kamali et al. (2013) (25, 26). Nevertheless, Lyvarjany et al. (2015) in their study concluded that only emotion-oriented coping strategies could predict mental health, which is inconsistent with the results of the present study.

To explain the results of the present study, it can be said that some people create some of these maladaptive coping strategies in order to cope with the problems and negative events of childhood. This makes it possible for a person to negatively assess one's position and ability to deal with it leading to engaging in a passive and maladaptive coping strategy, such as an excitement counterpart. Because people use maladaptive coping strategies when they are in stressful situations as uncontrollable and manipulative. On the other hand, the activation of early maladaptive pattern produces a huge amount of negative and unpleasant emotions. An inconsistent coping style is used to cope with the turbulent excitement caused by the arousal of the schemes since one feels comfortable with his/her designs and needs cognitive coordination for the survival and continuity of his/her scheme. One of the employed mechanisms is the use of an incompatible coping style. Following the use of maladaptive coping strategies, they experience more psychological disturbances and reduced quality of life. Improvement of people's coping strategies during short-term psychological therapies is easier than the alteration of

maladaptive schemes. Furthermore, this way enhances the quality of life and reduces emotional distress in a shorter time (24).

In justifying the prediction of a general public health problem with the use of an excitement strategy, it can be stated that, as a rule, individuals can use problem-solving strategies when they think they can solve the problem. However, if they feel that the condition is beyond their skills and abilities they will benefit from the exciting circuit-coping strategy. Therefore, people experiencing severe or out-of-control events are more likely to use emotional strategy. As a result, the repeated experience of stressful situations and repeated use of the strategy of coping with excitement endangers their public health.

### Conclusion

Considering that human resource training is the most important element of higher education and most important factor in national development and given the importance of mental health for students, especially nursing and midwifery students who often deal with clients, who need strong support, mentally and psychologically, nursing and midwifery students are ready to take this role with adequacy and trust. Therefore, the findings of this study can be the basis for performing further studies to improve the mental health of students and levels of the community and prevent mental disorders. Finally, it should be added that the results of this study were the findings related to the nursing and midwifery students of the Azad University of Birjand and are generalized to other students with caution.

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### Conflicts of interest

The authors declare no conflicts of interest.

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