



Original Article

# The effect of psychological capital on resilience in nurses in coronavirus pandemic: The mediating role of empathy

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## Abstract

**Introduction:** Psychological capital is very important in the success of people in health care organizations. The present study aimed to analyze the effect of psychological capital on improving resilience in nurses in coronavirus pandemic with the mediating role of empathy.

**Materials and Methods:** The statistical population of this cross-sectional study was 150 nurses of Shahid Modarres Hospital of Saveh city, Iran. Using a simple random sampling method, 108 cases were selected. Research instrument included the Empathy Scale of Hajiani and Moslehi Nik, and Psychological Capital Questionnaire of Luthans. Data analyzed through Pearson correlation test, structural equation modeling method, bootstrap test and SPSS22 and LISREL8.8 software.

**Results:** The results showed that psychological capital has a significant effect on improving resilience and empathy of nurses and the research model has a good fit (GFI= 0.907, CFI= 0.965, RMSE= 0.079).

**Conclusion:** The results showed that increasing the psychological capital of nurses depends on increasing their level of empathy and resilience. Managers and head nurses should encourage nurses to believe.

**Keywords:** Empathy, Nurses, Psychological capital, Resilience

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## Introduction

Today, nursing is considered as one of the most important occupations in the field of health care, which, in addition to its key importance, also includes an important and large part of the population working in the field of health care; however, this profession has special physical consequences due to its special conditions such as lack of human resources, work shifts, a large number of patients, etc., and on the other hand, as a complex profession, in addition to having its level of excitement, it needs continuous interactions with different people (colleagues, patients, families) in an environment with high levels of stress and, if not addressed, will lead to significant problems

such as burnout. Nurses are in a unique position regarding their impact on the health phenomenon. Nursing is an assistant profession (1) and requires the ability of the nurse to assess the situation and predict the outcome. In order to perform such an action, the nurse must have knowledge and skills and be able to perform a purposeful mental activity, create new ideas and evaluate them so that he can use practical information in judging, decision-making, and problem-solving (2). A nurse does not only need knowledge and skills. It also matters how different people treat different people. Psychological capital is significant in the success of individuals in health care organizations, and these skills allow people to

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think better under difficult circumstances, avoid wasting emotional emotions such as anger, anxiety, and fear, and calm their minds. In this way, they open the way for inner insight and creative ideas (3). According to Lütans, psychological capital goes beyond social capital and human capital (4). While economic capital, what do you have? Human capital, what do you know about? Social capital, whom do you know? Who are you psychological capital on? (5). Thus, it can be said that nurses who have a high level of psychological capital, over time, always strive to achieve their "true self" to the "possible self" that will be necessary for the realization of such a process of social and human capital development; In other words, one who seeks to achieve his "possible self" must necessarily seek the development of knowledge and skills (human capital) and the development of his communication network (social capital) (6). Since psychological capital challenges people to search for who they are and thus achieve the better self-awareness necessary to achieve goals and success (4), it can be said that psychological capital is an important tool for success at work. Nurses with low psychological capital have severe problems in many areas. Psychological capital can be defined as the developmental status of positive psychology, which includes the four components of self-efficacy/self-confidence, hope, optimism, and flexibility (6).

Over the past decade, the stress in the workplace has attracted the attention of many researchers. This issue has increased in recent years and costs millions of dollars annually. In addition to economic costs, the stress in the workplace imposes indirect costs on organizations, such as damaging the reputation of the organization, increasing the rate of layoffs, and reducing employee motivation and commitment (7).

Many executives, managers, and social scientists see workplace stress as cancer of society in many organizations today. They argue that ethical crises can undermine the competitive power of organizations (8). One of the deterrents and stress relievers is empathy and improving resilience. Empathy is a powerful force for achieving the goals and plans of the organization and the most practical reason to promote personal growth and human relationships and relationships with others. In an organization, with the power of empathy, many complex knots can be untied, many

impossible things possible, and difficult paths of work and activity and the realization of goals and plans can be followed. Therefore, if we want to create "empathy" in the hospital environment, we must create an environment where both nurses can put themselves in place of nurses and understand them, and nurses can go inside the nurses and see issues and issues from their point of view.

The present cross-sectional study conducted cross-sectional in 2020 in Shahid Modarres Hospital in Saveh city, Iran. The statistical sample of the present study was estimated 108 nurses using Cochran's formula. Also, considering the possibility of non-return of some questionnaires, a sample of 110 people was selected from the members of the statistical community using a simple random sampling method. It should be noted that having at least one year of work experience in the above hospital was considered a condition for entering the study sample.

#### Research instrument

*A) The Empathy Scale of Hajiani and Moslehi Nik Questionnaire:* It has eight questions, which calculated Cronbach's alpha for the questionnaire with a value of 0.84 (8).

*B) The Psychological Capital Scale of Lütans Questionnaire:* It consisted with 26 questions in four dimensions (self-efficacy, hope, optimism, flexibility) whose Cronbach's alpha was calculated abroad by McGee (4,17) with a value of 0.95. In Iran, Golparvar et al. (18) calculated the consistency equal to 0.86. *C) The Resilience Scale:* It consisted 14 items (19). Hashemi et al. (20) calculated Cronbach's alpha to be 0.90.

In the above research, skewness-elongation test to determine the normality of variable distribution, Pearson correlation test to examine the relationship between variables, structural equation modeling method and bootstrap test to measure the fit of the research model and test hypotheses using SPSS 22 and LISREL 8.8 software.

It should be noted that out of 110 distributed questionnaires, 100 questionnaires were returned (95.23% response rate) and analyzed. Also, during the distribution of the questionnaires, the purpose of the research was fully explained to the participants, and they wrote informed consent to participate in the research. Furthermore, the confidentiality of the participants' information was maintained. In addition, this study has been morally approved

in Shahid Modarres Hospital of Saveh city, and all ethical issues have been observed according to the Helsinki Declaration.

### Materials and Methods

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### Renault

The results of the demographic characteristics of the sample members showed that 41% of the sample members were women and 59% were men. In terms of education, 9% of members had an associate degree, 64% had a bachelor's degree, 25% had a master's degree, and 2% had a doctorate, of which 62% had formal and contract employment, and 38% had a contract. In addition, the average age of participants in the study was estimated to be between 36-45 years.

To evaluate the normality of the studied variables, the skewness-elongation test was used using SPSS22 software. The results of this test are shown in Table 1.

**Table 1.** The results of normality

Variable	Skewness	Standard error	Kurtosis	Standard error
Psychological capital	-0.580	0.284	-0.183	0.503
Resilience	-0.265	0.254	-.0785	0.503
empathy	-0.036	0.130	-0.728	0.260

The normality of the data based on the skewness-elongation test is proved when the estimated values for the skewness and elongation of the data are in the range (2+ and 2-). Therefore, according to the numbers obtained in Table 1 and the placement of all numbers related to the degree of skewness and

elongation of the research variables in this interval, the assumption of normal data was confirmed.

In this study, the Pearson correlation test was used to investigate the relationship between indicators (Table 2).

**Table 2.** Correlation coefficient between research variables

independent variable	Dependent variable	r*	P**
Psychological capital	Resilience	0.478	0.00
Psychological capital	Empaty	0.330	0.00
Empathy	Resilience	0.432	0.00

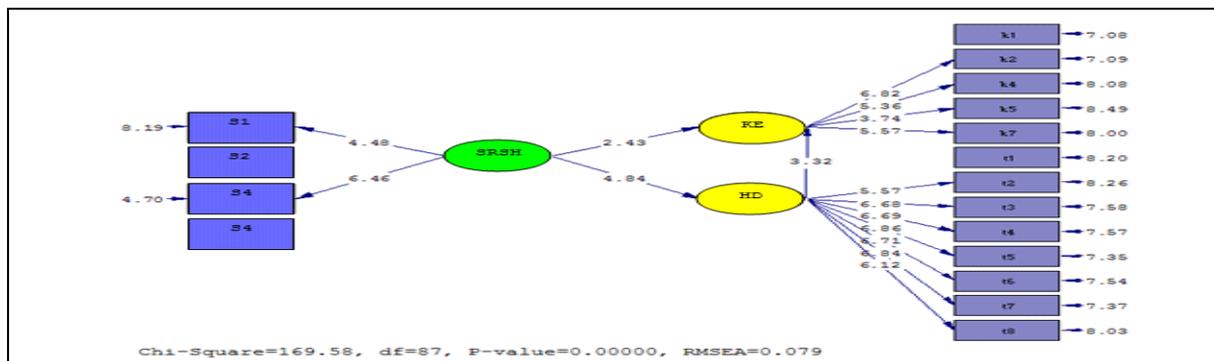
\*Pearson correlation test, \*\* P< 0.01

The correlation test results showed that there was a positive and significant relationship between psychological capital and improving resilience and empathy of nurses and between improving resilience and empathy of nurses.

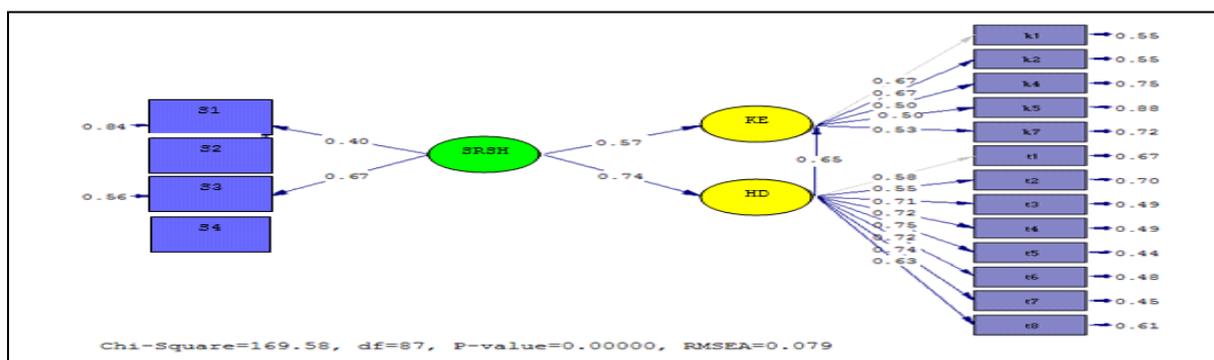
The results of Figures 1 and 2, along with the partial index p, were checked to test the acceptability of the factor load related to each variable and the amount of appropriate factor loads (more than 0.40), and the partial p-value was less than 0.05, so it can be He concluded that the dimensions of the studied structures are well able to explain the hidden variables. In the next step, in order to know the effect of the studied variables on each other, the research hypotheses were tested using the method of structural equations and data analysis using LISREL 8.8 software, the final results of which can be seen in the form of diagrams (1) and (2). Therefore, in this research, the structural equation modeling method with the help of LISREL 8.8 software has been used to confirm

or refute the hypotheses. In order to confirm or refute the hypotheses, standard coefficients and significant numbers are used. The meaning of the significant number in LISREL software is the same as the concept of sig in SPSS software, with the difference that for a coefficient to be significant, its significant number must be greater than 96 1.1 or less than -1.96 and is generally used to confirm or disprove the research hypotheses.

The greater the significance number, the greater the indication that the independent variable has a stronger effect on the dependent variable. The standard coefficient of factor loads means that the larger the factor load and the closer to one, the observed variable (question) can better explain the hidden variable and means that the independent variable has a more significant effect on the dependent variable. If this value is less than 0.3, the average is good if it is between 0.3 to 0.6 and excellent if it is above 0.6 .



**Figure 1.** Significant values obtained from structural equation modeling



**Figure 2.** Values of standardized coefficients obtained from structural equation modeling

According to the chart above, the significant numbers between psychological capital and resilience improvement are 2.43, between psychological capital and empathy are 4.84, and between empathy and resilience improvement are 3.32, which is greater than 1.96, so there is a difference between psychological capital and resilience improvement. Furthermore, there is a significant relationship with the mediating role of empathy. According to Figure 2, the standard coefficient between psychological capital and resilience improvement is 0.57 because this number is between 0.3 and 0.6, which indicates

the good and direct effect of psychological capital on resilience improvement. The standard coefficient between psychological capital and empathy is 0.74 because this number is greater than 0.6, which indicates the strong and direct effect of psychological capital on empathy. The standard coefficient between empathy and resilience improvement is 0.65 because this number is greater than 0.6, indicating a strong and direct effect on resilience improvement. A summary of the structural equation modeling results is presented in Table 3.

**Table 3.** Results of structural equation modeling

Relationships of research variables	t	(R)	Indirect effect	Total
Psychological capital - resilience	2.43	0.57	-	0.57
Psychological capital-empathy	4.84	0.74	-	0.74
Empathy - resilience	3.32	0.65	-	0.65
Psychological capital-empathy-resilience	-	-	0.74*0.65=0.48	0.48

Table 4 presents the model fit indices in structural equation modeling. As can be seen,

the research model has a good fit, and the level of acceptance of the indicators has been met.

**Table 4.** Conceptual model fit test results

CIMN/DF	P	GFI	NFI	CFI	RFI	IFI	RMSE
1.94	0.00	0.907	0.926	0.965	0.900	0.965	0.079

In explaining the values of the fit indices of the above table, it is necessary to mention that the CIMN / DF index (Chi-square normalized to the degree of freedom), if the number is between 1 and 3, indicates the high approval of the model. The other three indices are CFI (Adaptive Fit Index), IFI (Incremental Fit Index), NFI (Bentler-Bount Normalized Fit Index), which always have a number between 0 and 1, which the closer to 1 this number indicates RMSEA (root mean square of estimation error) is another fit of the model that the appropriate value for this index is less than 0.1. According to the values obtained in Table 4, the conceptual model of the research can be obtained. From the point of view of fit indicators, it has a favorable situation.

**Discussion**

Health care providers are affected by various stressors due to their responsibility to provide

health and treatment to patients. These long and continuous stresses lead to a physical-psychological syndrome and cause issues such as absenteeism, resignation, loss of energy, and work efficiency is achieved in these people. On the other hand, mental health care and health care are essential to prevent the spread of coronavirus. Fear, stress, and avoidance of indifference are necessary to prevent illness and observe health principles to some extent, but these negative emotions should not turn into a problem and damage the soul and psyche and disrupt people's lives. Coronary heart disease can cause mental disorders in the community. The risk of death from coronary heart disease is only 2%, but mental illness and psychological problems due to mental disorders are higher than physical risks. This study aimed to investigate the effect of psychological capital on improving resilience in coronary conditions with the mediating role of empathy between

nurses of Shahid Modarres Hospital in Saveh. Some of the findings of this study indicated the effectiveness of psychological capital on increasing the resilience of nurses.

The obtained results are consistent with the findings of Mokhtari et al. (21) study on 30 persons using the Lutans Psychological Capital Questionnaire showed that psychological capital-based intervention could be used as an effective way to increase the strengths of hope, self-efficacy, resilience, and optimism., Sadeghi and Karimi (22), On a sample of 30 people using the Dennis and Vanderva Cognitive Flexibility Questionnaire and Conner and Davidson Resilience Questionnaire showed that psychological capital training is effective in increasing flexibility and resilience in individuals. Lutans et al. (5) By designing a psychological capital questionnaire and implementing it on a sample of 242 management students, through educational interventions, the positive effect of psychological capital on improving their performance and resilience was identified., Pinkwart (23) On a sample of 1221 German adolescents, the Wagnild Resilience Questionnaire stated that high levels of stressors predict a decrease in self-efficacy beliefs, which is a critical component of the Wagnild Resilience Scale. (24). Explaining this finding, it can be said that with increasing resilience in nurses, cognitive flexibility increases, stubbornness increases, and instead of passive confrontation in the face of stressful events, more active, focused, and task-oriented confrontations are used (25). Resilient people have a purpose in life and absorb and use social support. Resilient people are creative and innovative people and can help others. Also, resilient people tend to be extroverted due to their strong social connections (26), and extroversion helps reduce anxiety and depression, which has also improves nurses' resilience.

Part of the results of this study confirmed the effectiveness of psychological capital on increasing nurses' empathy. This finding is in line with the results of the researches of Azimi Abarqoui (27) on 132 employees in the education districts of Yazd with the tool of psychological capital Lutans. The results showed a positive and significant relationship between psychological capital and employee empathy. Also, Rashid and Bayat studied 205 high school students in Tuyserkan using the

Lutans and Olivo Psychological Capital Questionnaire concluded that the relationship between psychological capital and empathy was significant and showed that with a change in each of the components of psychological capital, the components are cohesive (28). Hashemzadeh (29) studied 200 high school teachers in Fasa city and confirmed the role of empathy in predicting psychological capital in teachers. Explaining this finding can be said to be positive psychological factors such as self-efficacy (having the confidence to commit and strive to succeed in challenging tasks), hope (perseverance in the direction of the goal and, if necessary, change the direction of achieving the goal to achieve success), optimism (having a positive citation of current and future successes) and resilience (perseverance in the face of difficulties and difficulties to achieve success), when combined, jointly increase nurses' empathy; In this regard, nurses have personal resources such as self-efficacy and active coping style that help them to control and influence their work environment and achieve career success (30). Nurses also try to use personal resources (such as positive psychological experiences) to help them increase empathy and thus develop more professional and personal resources for them (31). Therefore, nurses who believe in their ability to perform job-related tasks and find alternative ways to solve problems, even when faced with work problems, will not lose their energy and enthusiasm, and a level of optimism and hope in future successes.

The positive effect of empathy on increasing nurses' resilience was another result of the present study. The obtained results are in line with the findings of Jahidi and Derakhshani studies (32). They assessed 100 soldiers of one of the military training units of the country who came to this conclusion: empathy and altruism predict resilience (33). Mohammad Aminzadeh et al. (34) assessed 120 mothers of children with physical disabilities using the Connor and Davidson Resilience Scale and concluded that resilience has a positive and significant relationship with empathy. This means that the more resilient mothers with children with disabilities are in dealing with the situation in which they find themselves and positively evaluating and interpreting such a situation, the more effectively they will be able to communicate and empathize with their surroundings. It is one factor that significantly

impacts the development of interpersonal relationships and indicates a person's mental health. In explaining the present findings, it can be said that empathy is one of the primary and important elements in social relations between individuals, which helps a person to understand others more and better and creates desirable social relations. These desirable relations seek a kind of social support. Social support acts as a mediator between life stressors and physical and psychological problems. It strengthens people's cognition by reducing the experienced stress, increasing survival, and improving the quality of life. Cope with the current unfavorable conditions and maintain the quality of life despite the existing tensions (35). Also, social relationships and empathy with people in different living environments create opportunities to discuss and investigate stressful events. People can express their feelings and receive and understand each other's feelings and experiences in dealing with similar stressful situations. Use each other's positive experiences, and these shared experiences can reduce the annoyance of these events and enable people to care about their positive aspects and look at their abilities and life issues with a more positive and optimistic view (36). Also, the present study results showed that empathy has a mediating role in the relationship between psychological capital and improving resilience in nurses. The results of the research on the role of empathy mediation are consistent with the findings of Manjiri and Namni (37) through an exploratory study of correlational schemes on 217 nurses (165 females and 52 males) working in hospitals of Sabzevar with the help of Lutans et al. psychological scales and Baron-Cohen empathy scale showed empathy could improve psychological capital with clinical symptoms of depression, hospital anxiety, and resilience, as well as, Vandergraf et al. (38) examined the mediating role of empathy and the effect of parental support and resilience on aggression and delinquency in a sample of 323 adolescents (158 boys and 168 girls), it was concluded that empathy has a moderating role in the relationships between these variables and also and Sahoo (39) assessed 276 employees using confirmatory factor analysis confirmed the mediating role of empathy in the relationship between psychological capital and resilience. It can be said that empathy creates a set of

behavioral readiness and inclinations in the individual, and people with higher empathy have higher emotional and behavioral readiness to improve resilience. In this regard, Reife et al. (40) point out that empathy is a fundamental capacity of individuals and helps to regulate relationships, support joint activities and group cohesion, and plays a key role in controlling negative emotions; Because it leads to the promotion of social self-confidence and consequently, the reduction of negative thoughts in individuals (41). Briefly, about the moderating role of empathy in nurses, it can be said that empathy in nurses stems from motivation in one direction and the other, and each of these motivations has specific consequences. Self-directed responses are generated to increase resilience.

On the other hand, as a stressful profession, nursing always faces serious challenges. Therefore, it can be said that empathy is an essential factor in understanding the emotional state and emotional sharing, especially in reducing adverse emotional reactions such as depression and anxiety and increasing positive emotions. So, empathy has a mediating role in the relationship between psychological capital and improving resilience in nurses.

The present study had some limitations. This research has been done on the nurses of Shahid Modarres Hospital in Saveh city. The use of self-report tools, lack of control over some variables affecting the results, such as self-confidence and family status of nurses, and the lack of purposeful follow-up and sampling are other limitations of this study.

### **Conclusion**

Psychological capital promotes hope, optimism, resilience, and self-efficacy in nurses. So, the nurse can set new goals in life and strive to achieve their goals with higher motivation. Also, considering the spread of the corona epidemic, clinical psychologists and counselors should pay attention to the mediating role of empathy to improve nurses' resilience considering the psychological capital of nurses.

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