

Investigating the Structural Model of the Relationship between the Coherence Sense and Emotion Management with the Mediating Role of Ambiguity Tolerance in Nurses

Giuseppe Michele Masanotti^{1*}, Silvia Paolucci², Elia Abbafati², Claudio Serratore², Michela Caricato²

¹Director of Experimental Centre of Research for Health Promotion and Health Education (CeSPES), 06129 Perugia, Italy.

²School of Specialization in Hygiene and Preventive Medicine, University of Perugia, 06129 Perugia, Italy.

Abstract

The sense of coherence can affect the personal and professional performance of nurses, and it is essential to identify and investigate the factors effective in it. The current study was done to study the mediating role of ambiguity tolerance in the relationship between emotion management and sense of coherence in nurses. The current study was descriptive-correlational and structural equation modeling. Among the nurses, 189 people were selected through available sampling. Data collection tools included an ambiguity tolerance questionnaire, a sense of coherence questionnaire, and an emotion regulation questionnaire. The results of the research revealed that the correlation coefficient between emotion management and ambiguity tolerance, ambiguity tolerance and sense of coherence, and emotion management and sense of coherence is significant ($P < 0.05$). Also, ambiguity tolerance had a mediating role in the relationship between emotion management and a sense of coherence in nurses. Based on this, in the relationship between the management of emotion and a sense of coherence in nurses, ambiguity tolerance had a mediating role. Thus, emotion management through increasing the level of ambiguity tolerance in nurses can help to strengthen the sense of coherence in them.

Keywords: Nurses, Ambiguity tolerance, Coherence, Emotion management

Introduction

Sense of cohesion is a structure that shows a person's overall orientation towards life and the comprehensiveness of his endurance [1]. The sense of coherence expresses a person's continuous confidence and dynamism in life and makes people perceive the stimuli received in life in a more organized and explainable way [2, 3]. This concept includes three main features perceptibility, controllability, and meaningfulness [4]. People with high perceptibility see the stimuli from the internal and external environments as having a predictable and clear structure [5]. Controllability or management ability includes a situation in which a person has the perception that he has the necessary resources available to meet the demands of these stimuli [6]. Meaningfulness with importance means that a person can consider life's problems as unpleasant issues and avoid them, instead of considering them as opportunities that are worth engaging [7].

Nursing is one of the most difficult jobs in the world, and nurses are exposed to a lot of stress [8]. Therefore, nurses need to benefit from a sense of cohesion as people who have a stressful and difficult job position, and it can guarantee their physical and mental health [4]. The sense of coherence determines the level of a person's

Corresponding author: Giuseppe Michele Masanotti
Address: Director of Experimental Centre of Research for Health Promotion and Health Education (CeSPES), 06129 Perugia, Italy.
E-mail: ✉ giuseppe.masanotti@unipg.it
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resistance in facing stressful situations and helps people, including nurses, to identify the best coping behavior in stressful situations and maintain their health status [9]. After trying to identify the variables involved in the sense of coherence, it seems that tolerance of ambiguity is one of the key variables in predicting the sense of coherence. People perceive and process information related to ambiguous situations or stimuli in a different way when they are faced with a group of unknown, complex, or ambiguous signs. To what extent can he successfully deal with a situation whose end is uncertain [10]? Tolerance of uncertainty is the acceptance of uncertainty as a part of life, the ability to continue living with incomplete knowledge, and the willingness to do an activity without knowing whether one will succeed or not, therefore, it indicates one's ability to respond positively to ambiguous situations [11, 12]. In the state of ambiguity intolerance, a person appears with a set of negative beliefs about ambiguity and its implicit meaning and predicts unfortunate consequences, and these negative reactions are independent of the probability of the actual occurrence of those situations and the consequences associated with it [13]. Therefore, if a person with weak tolerance for ambiguity is faced with an ambiguous situation, he may suffer from worry and anxiety, which will endanger his health in the long run [14].

Many people with mental problems, including people with anxiety symptoms, believe that they need to know with absolute certainty that nothing bad will happen [15]. Research shows that intolerance of ambiguity is related to worry, obsession, and panic [16] and excessive worry and anxiety are associated with cognitive performance degradation [11]. Also, intolerance of ambiguity can weaken the controllability and meaningfulness of life's challenges as key components of a sense of coherence [17]. It seems that the ability to manage emotions through the tolerance of ambiguity can lead to a sense of coherence in people.

Nursing is one of the tough and stressful professions, they deal with many disturbing experiences. Various experiences, from observing pain and suffering and even death of people to the problem of lack of manpower and high-pressure work shifts, are among the factors that affect nurses' job stress and can create a context for them to experience negative emotions [8], so the skill Emotion management is necessary for these people. Emotion management refers to strategies that people use to moderate emotional experiences [18]. Emotion management is a special form of self-regulation through which people regulate their emotions to properly respond to environmental requests [19]. Adaptive emotional regulation is necessary for daily life functioning [20]. Adaptive emotional management helps people in better management of their emotions and emotional reactions [21]. Incompatible emotion management strategies have a destructive effect on mental health and life quality and are related to emotional disorders [22]. The job conditions of potential nurses are associated with many uncertainties, which can be the source of negative emotional experiences.

According to the findings of some studies, negative emotions can destroy a person's internal capabilities, and on the other hand, adaptive emotion regulation can help facilitate resilience in difficult situations [14-16]. On the other hand, the ability to manage emotions can help strengthen internal capabilities such as a sense of control, self-efficacy, and effective coping in stressful situations [19, 21]. Also, the findings of some studies show the role of ambiguity tolerance in mental health and increasing people's performance in various matters such as decision-making and problem-solving. It has been shown that people with mental problems report lower scores in ambiguity tolerance [10, 11, 17]. It seems that emotion management can help to increase the maintenance of coherence in nurses by influencing ambiguity tolerance. Based on this, the present study examines the mediating role of ambiguity tolerance in the relationship between emotion management and coherence sense in nurses.

Materials and Methods

The present study is applied in purpose terms, descriptive correlation in data collection method terms, and structural equation modeling. In this study, 189 people were chosen through available sampling and asked to answer the questionnaires. 120 people answered the questionnaires manually and the rest electronically. Before the implementation of the study plan, explanations were provided to the participants about the research objectives and their necessity. Also, participating in the research was completely voluntary and people could complete the tool without mentioning personal information, and the volunteers were also assured about the confidentiality of the data. Finally, if the eligible people agreed to participate in the research, the questionnaires were provided to them manually or electronically to complete. Regarding the electronic questionnaires, the link to the questionnaires was prepared and sent to people in the virtual space. Also, in the link of the questionnaire, explanations were given about the objectives and necessity of the research, the confidentiality of the personal information of the participants, the optionality of participation, and the conditions for entering the study. The criteria for entering the study included not having a history of acute illness, consent to participate in the research, and the criteria for exiting the study included being under certain conditions that make it impossible for the person to continue participating in the study, and unwillingness to continue participating in the study.

The research tools included the Sense of Coherence Questionnaire, Emotional Regulation Questionnaire, and Ambiguity Tolerance Questionnaire.

Sense of Coherence Questionnaire was created by Mortensen *et al.* [23]. This questionnaire is a 35-question test that is designed as 3 or 5 options. This questionnaire consists of three subscales comprehensibility (ability to

understand), management ability, and meaningfulness. The range of scores of this questionnaire fluctuates between 35 and 105. Mortensen *et al.* [23] stated Cronbach's alpha of the questionnaire as 0.89 and its test-retest reliability coefficient as 0.78, and also examined and confirmed its three-component structure. In the present study, Cronbach's alpha coefficient of the sense of coherence questionnaire was 0.79.

The emotional Regulation Questionnaire was introduced by Garnefski and Kraaij [18] with 10 questions to determine emotion regulation strategies. This questionnaire consists of two re-evaluation subscales with 6 questions and repression with 4 questions. Subjects respond on a 5-point Likert scale from completely disagree (score 1) to completely agree (score 5) and the range of scores for emotion regulation is from 10 to 50 and for reappraisal subscales from 6 to 30 and suppression from 4 to 20. Cronbach's alpha coefficient for suppression is 0.73, for reappraisal is 0.79, and the retest reliability after 3 months for the whole scale is 0.69. The internal consistency coefficient of this scale in civil servants and students of the Catholic University of Milan was obtained for reappraisal in the range of 0.48 to 0.68 and for suppression from 0.42 to 0.63. In the current study, Cronbach's alpha coefficient for the whole emotion regulation questionnaire was 0.74.

The ambiguity tolerance questionnaire was created by McLain in 1993 to evaluate ambiguity tolerance, which includes 13 items. McLain [24] reported the internal reliability of the ambiguity tolerance questionnaire with Cronbach's alpha of 0.820 and the convergent validity of the test with the correlation of this questionnaire with other questionnaires was confirmed. In the current study, the Cronbach's alpha coefficient for the ambiguity tolerance questionnaire was 0.81.

In the current study, the structural equation model and Pearson correlation coefficient methods were utilized to analyze the data using SPSS23 and AMOS software.

Results and Discussion

The average age of the participant group was 31.36 ± 6.52 . Of the total group of participants out of 189 participants, there were 167 (88%) women and 22 (12%) men. Also, out of these 189 people, 152 people (80%) were married and 37 people (20%) were single. The results related to the mean and SD (standard deviation) and the correlation matrix of emotion management, ambiguity tolerance, and sense of coherence are shown in **Table 1**.

Table 1. Mean and SD (standard deviation) and correlation matrix of emotion management, ambiguity tolerance, and sense of coherence.

Variables	Mean	SD	1	2	3
Emotion management	30.88	7.73	1	-	-
Tolerance of ambiguity	48.32	9.92	0.67**	1	-
A sense of coherence	74.13	16.65	0.65	0.76**	1

**Significant difference at the level of 0.01

As the results of **Table 1** show, the mean and SD (standard deviation) of the emotion management, ambiguity tolerance, and sense of coherence scores of the participant group were 30.88 ± 7.73 , 48.32 ± 9.92 , and 74.13 ± 16.65 , respectively. In addition, the correlation coefficient between emotion management and ambiguity tolerance (0.67), ambiguity tolerance and sense of coherence (0.76), and emotion management and sense of coherence (0.65) was significant at 0.01 level.

To test the proposed model of the mediating role of ambiguity tolerance in the relationship between emotion management and sense of coherence, the structural equation modeling method was used. At first, the underlying assumptions of the model of the structural equation were examined. To check the variable's normality, the kurtosis and skewness of the variables and the Kolmogorov-Smirnov test were utilized. The findings of the elongation coefficient and skewness coefficient revealed that based on the normality criterion, the study variables all have the absolute value of the elongation coefficient and skewness coefficient smaller than 3, and thus, no violation of the data normality was visible. The findings of the Kolmogorov-Smirnov test also revealed the normality of the dispersion distribution of the study variables ($P > 0.05$). In the proposed model, emotion management is a predictor variable (independent), sense of coherence is a criterion variable (dependent), and ambiguity tolerance is a mediating variable. The suitability of the proposed model was used based on a combination of suitability measures to specify the adequacy of the proposed model's fit with the data, the findings of which are presented in **Table 2**.

Table 2. Model fit indices of the mediating role of ambiguity tolerance in the relationship between emotion management and sense of coherence.

X2	df	P	X2/df	RMSEA	GFI	AGFI	CFI	TLI	IFI	NFI
13.26	6	<0.5	2.21	0.004	0.90	0.98	0.91	0.86	0.97	0.92

Based on the information in **Table 2**, the value of X^2 is equal to 13.26 and is significant at the level of $P > 0.05$. Because of the high sample size of the study, the value of the X^2/df ratio was calculated, which was equal to 2.21, and based on the fact that this index should not be more than 3 for the model to be approved, it can be said that the obtained data are consistent with the assumed pattern. Based on the value of model suitability evaluation indices including the GFI index, AGFI index, CFI index, TLI index, IFI index, NFI index, and RMSEA index equal to 0.90, 0.98, 0.91, 0.86, 0.97, 0.92 and 0.004, respectively, it can be said that the model has a good fit.

In the conceptual model, it is assumed that emotion management is related to the sense of coherence through ambiguity tolerance. In the hypothesized model paths, the mediating role of ambiguity tolerance is in the relationship between emotion management and a sense of coherence.

After examining and verifying the model to test the hypothesis's significance, two partial indicators of the critical ratio CR and P have been used. According to the significance level of 0.05, the critical value must be > 1.96 or < -1.96 , and the parameter value other than this is not considered essential in the model. In addition, values < 0.05 for the P value show a significant difference between the value determined for the zero value and the regression weights at the 95% level. According to the mentioned indicators, as the findings of **Table 3** show, the regression weights associated with the findings of this table were all significant at the 0.001 level.

Table 3. Standard and non-standard coefficients of direct paths of the hypothesized model of the mediating role of ambiguity tolerance in the relationship between emotion management and sense of coherence.

Routes	B	β	Standard error	Critical ratio	P
The direct effect of emotion management on ambiguity tolerance	0.72	0.67	0.014	12.66	0.001
The direct effect of emotion management on the sense of coherence	0.46	0.31	0.021	5.18	0.001
The direct effect of ambiguity tolerance on the sense of coherence	0.76	0.54	0.045	9.10	0.001

As can be seen in **Table 4**, the indirect effect of emotion management on the sense of coherence was statistically significant at the 0.001 level. Also, the evaluation of the indirect effect using the method of bootstrap shows the indirect effect of emotion management on the sense of coherence, considering that the lower and upper limits do not include zero (zero does not fall within this confidence interval), they are mediated by tolerance of ambiguity. Thus, the indirect relationship between emotion management and a sense of coherence through tolerance of ambiguity is significant. The total path coefficient between emotion management and coherence sense is significant at the 0.001 level ($P \leq 0.001$, $\beta = 0.68$). Also, the coefficient of determination of this path was equal to 0.29, in other words, emotion management and ambiguity tolerance explain a total of 29% of the variance of the sense of coherence variable.

Table 4. Coefficients of the indirect paths of the hypothesized model of the mediating role of ambiguity tolerance in the relationship between emotion management and sense of coherence.

Routes	b	β	Lower limit	Upper limit
The indirect effect of emotion management on the sense of coherence	0.55	0.37	-0.261	-0.106
	b	β	P	R ²
The overall effect of emotion management on the sense of coherence	1.02	0.68	0.001	0.29

The purpose of this study was to study the mediating role of ambiguity tolerance in the relationship between emotion management and sense of coherence in nurses. According to the results of the present study, emotion management had a significant positive relationship with the sense of coherence, which is consistent with the results of previous studies [19, 21]. In a study on adults, Radtke *et al.* [21] showed that managing emotions by reducing stress and increasing cognitive performance can help increase the level of integrity in these people in challenging situations and better decision-making power. Bradley *et al.* [19] in another study on students showed that the ability of these people to adjust their adaptive emotions during exams can help maintain physical and mental integrity in them and as a result, reduce exam anxiety and improve academic performance.

According to the nature of their job and profession, nurses are working in an environment that can generate many stressful stimuli, from illness to death. Therefore, they are exposed to many stressful stimuli that potentially cause disturbing emotional experiences and anxiety in them [3], while emotional experiences and the management of these emotions have a profound effect on maintaining and improving the sense of coherence [2]. Meanwhile, the ability of nurses to effectively deal with negative events in their work environment in the form of using adaptive emotion regulation strategies can make them organize, predict, and explain the internal and external stimuli received in their work life be able to perceive and in other words, maintain a sense of coherence. On the other hand, negative emotion regulation strategies such as suppressing emotions and not expressing them appropriately in the situation due to their incompatible nature can lead to the intensification of negative emotions and thus

expose the sense of coherence to harm [19]. If a person is not able to properly manage his emotions and feelings, the sense of cohesion can be subject to disintegration and instability under the influence of negative emotions [20].

The utilization of adaptive emotion regulation strategies, like re-evaluation for managing emotions, makes a person logically and rationally evaluate the various aspects of the issue at hand, look at the issue from a different perspective, and provide a new interpretation of it. Such a person, being aware of the existing conditions and the emotions experienced, considers the challenging conditions as an opportunity for the growth and evolution of his inner coherence, and as a result, this view helps to moderate the internal emotional load, and finally, this process is a constructive step in the direction of Maintaining a sense of individual cohesion [21]. In this regard, Katsaros and Nicolaidis [15] in a study on the employees of a company showed that in these people, using adaptive emotion regulation strategies, especially reappraisal, in the long run, can improve personality traits, including flexibility and resilience affect and increase the tolerance capacity of these people for unpredictable conditions in the work environment.

Another finding of the current study showed that emotion management has a positive and significant relationship with ambiguity tolerance, which was consistent with the findings of previous studies on the role of adaptive emotion regulation in facilitating flexibility and resilience in difficult situations [14-16]. It was also shown that ambiguity tolerance has a mediating role in the relationship between emotion management and sense of coherence. In explaining this finding, it should be stated that people with adaptive emotion regulation strategies have the skill to make sense of the ambiguous situation in case of being in ambiguous situations, and by facing their emotions, they can transform those emotional experiences into processes in their cognitive system and by placing it in a meaningful framework and reconceptualizing it, reduce the severity of the negative burden of that ambiguous issue and make it easier for them to bear that ambiguity [11]. Ambiguity tolerance helps a person to be able to understand ambiguous stimuli by maintaining the balance of his emotional system and coping with these stimuli if necessary [16]. Brendel *et al.* [16] in a study on a group of managers showed that regular mindfulness practice based on emotion regulation through increasing skills in managing negative emotions including anxiety and stress can increase performance, creativity, resilience, and reduce anxiety.

Conclusion

According to the results of this study, ambiguity tolerance had a mediating role in the relationship between emotion management and a sense of coherence in nurses. Therefore, emotion management through increasing the level of ambiguity tolerance in nurses can help to strengthen the sense of coherence in them. The results of this study can be used in planning to improve the mental health of nurses.

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