

Stress management and psychological resilience of healthcare workers: The role of job satisfaction, job performance, and continuance commitment

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Abstract

Introduction: The purpose of this study is to examine the role of job satisfaction, job performance, and continuance commitment in the relationship between psychological resilience and stress management among healthcare workers at İstanbul province public hospitals, in Turkey.

Methods: As the data collection and analysis method in this research, a cross-sectional study design was used on a sample of 848 healthcare workers. A simple random sampling method was used to collect data. Data were evaluated using IBM's statistical program SPSS Statistics 26.0 and Hayes Process Macro statistical program. In the research, data were examined using frequency analysis, explanatory factor analysis, reliability analysis, Pearson correlation analysis, and multiple regression analysis.

Result: The research's findings indicate that stress management, psychological resilience, job satisfaction, and job performance are significantly correlated. There is no statistically significant correlation between continuance commitment and other variables.

Discussion: The psychological resilience of health workers is effective on job performance. It is emphasized that the job performance of health workers can help them to have a better level of psychological resilience both personally and professionally. Healthcare workers with high job performance tend to have a more positive relationship with their jobs, which may increase their capacity to cope with stress. Stress management is very important, as healthcare professionals do not accept mistakes and have high risks while providing services. For this reason, stress management practices can be developed to alleviate the difficulties of working conditions in institutions and increase psychological resilience.

Take-home message: This study can be an important source of information to support healthcare workers -especially nurses and midwives- to have a better working environment and to cope with stress more effectively. It is recommended that the effect of employees' continuance commitment be examined in detail in future studies.

Keywords: Continuance commitment; healthcare worker; job satisfaction; job performance; psychological resilience; stress management.

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INTRODUCTION

Stress is a factor that negatively affects people's lives, but it is an indispensable part of daily life [1]. Stress is expressed as a non-specific reaction of the body to any situation or event [2, 3]. Stress negatively affects family, work, social life, and most importantly, the health of individuals. In the fast pace of life, some of the events that will cause stress are caused by personal factors, and some are caused by environmental factors. Today's aging and competitive conditions have caused stress to appear as a great danger threatening people due to reasons such as work tempo, time pressure, and productivity. The anxiety of not being able to adapt to the changes, developments, and developments in the world creates pressure and tension on individuals. At this point, the decisive role of 'coping' strategies has begun to attract the attention of researchers more and more every day. It is seen that the researchers in this field classify the related strategies as resources, styles, and efforts [4]. In the category of coping resources, there are skills to overcome existing problems, attitudes toward other people, behaviors, and some aspects of personality; behaviors applied by people in certain or similar situations express their coping style. On the other hand, coping efforts are behavioral or cognitive strategies that emerge in the face of felt pressure or strain and vary according to the context of the stressful event [5].

The stress that individuals are exposed to in the working environment leads them to experience psychological and physical problems and also paves the way for them to catch chronic diseases [6]. Stress negatively affects the family, social, and working life of the person. Therefore, stress becomes a social problem. Stress affects the performance of people in business life and causes a decrease in productivity. As individuals encounter stress, they learn the methods of coping with stress and develop psychological resilience. Psychological resilience, which is defined as the capacity to cope with the problems or difficulties faced by the person, is a personality trait that functions as a source of resistance to stress. Resilience was first defined by Kobasa (1979) as personality tendencies or qualities that distinguish managers who can stay healthy under heavy work stress from others [7]. These qualities were determined as commitment (strong belief that life is interesting and worth living), control (belief that one can control or influence outcomes), and challenge (adventurous and exploratory approach to life). Having these qualities is important in terms of turning stressful situations into an advantage [8]. Being psychologically resilient affects well-being by using effective coping strategies while reducing the perception of a difficult situation as a threat.

Psychological resilience is defined as one's strength to recover from difficult life experiences or the ability to successfully overcome bad events [9]. Originally the concept of psychological resilience was considered a genetic trait. Previous studies describe it as a learnable and improvable process [10,11]. Psychological resilience is the ability of individuals to survive emotionally, cognitively, and behaviorally by showing flexibility in difficult life events and stressful situations. Previous studies reveal that having this resilience, especially in healthcare workers, can increase their performance at work, reduce work-related stress, and improve their overall well-being [12]. In this context, the role of improving the skills of coping with stress and increasing psychological resilience in job satisfaction and quality service provision of health workers is becoming increasingly important. The healthcare industry is an important industry that responds to the most critical needs of people regarding their health and well-being. Health professionals in this sector perform several vital tasks, from the treatment of patients to the delivery and management of health services. The important role of healthcare professionals brings with it some challenges that require them to be exposed to various stressors and adapt to intense working conditions. The intense stress that healthcare professionals are exposed to affects not only their health and well-being but also the quality of services provided to patients [13]. Therefore, improving the coping skills of health workers with stress and increasing

their psychological resilience is of great importance for both the individual's well-being and the quality of health services.

This study aims to examine the relationship between the stress-coping skills of health workers and psychological resilience. The focus of our research is to understand the impact of stress management strategies on psychological resilience and to determine how different individual outcomes – job satisfaction, continuance commitment, and job performance – play a role as mediating variables in this relationship. This study aims to provide important information that can help healthcare administrators and professionals develop effective interventions to improve the well-being of healthcare workers.

Stress management

Stress is defined as the response to physical or psychological strain caused by an action or situation. According to Hans Selye, stress is a general response of the individual to various environmental stressors. Additionally, stress is acknowledged as a dynamic phenomenon that is a part of everyone's life. It is a force created by internal and external factors that can lead an individual to abandon their needs or react. This force often results in negative consequences such as tension, sadness, and depression. In summary, stress is a state of tension that is accepted as a fact of life and often leads to negative outcomes. However, various strategies can be developed to cope with stress, and various techniques can be applied to reduce it. In the work environment, stress arising from numerous different causes is defined as a phenomenon that leads to various outcomes for employees and employers, such as decreased work efficiency, reduced focus on work, and behaviors that disrupt workplace harmony. Some authors even describe it as a disease. On the other hand, stress management is essential for maintaining mental and physical health and for leading a productive and efficient life. The aim of stress management is not to avoid all types of stress but to create a positive force in the realms of productivity, energy, and vitality. The goal is to achieve optimum stress. Through stress management, the positive effects of stress are supported, while efforts are made to reduce and eliminate its negative effects.

Previous studies on stress management are examined and one of the commonly used theories in this area belongs to Lazarus and Folkman (1984). For them overall stress management is explained in terms of its perception and how one responds to stressful situations. According to this theory, stress arises as a result of a person's perceived stress situation as threatening or challenging [14]. Again in this perspective, when a person encounters a stressful situation, they first evaluate the situation. This evaluation takes place in two stages. First, the person tries to determine whether the situation is threatening or challenging. Secondly, the person is evaluated on whether he or she can manage stress. As a result of these two stages, if the person thinks that he/she can control the situation, show psychological resilience, and have sufficient coping skills, the stress level remains low. However, if the situation is judged to be threatening or the person's level of resilience is insufficient, the stress level will increase. According to this theory, individuals can use several strategies to cope with stress. These strategies may include different approaches such as changing the situation or adapting to it. The strategy chosen by the person may vary depending on the characteristics of this situation, personal characteristics, and environmental factors. Lazarus and Folkman's theory of stress management emphasizes that stress is dependent on individual differences and personal evaluations. Therefore, it is argued that individual characteristics and personal evaluations should be taken into account in determining effective strategies to cope with stress [14].

Psychological resilience

In the study, Lazarus and Folkman's stress management theory was used to explain the relationship between stress management and resilience. Psychological resilience is defined as the ability to react flexibly to challenging and changing situations and to get rid of negative emotional experiences [9].

Çetin and Basım (2011) define psychological resilience as a person's ability to cope with obstacles, uncertainty, and negative situations and to be successful also it is considered as the positive

psychological capacity of the person to cope with setbacks, uncertainty, and conflicts, failures, lack of development and increasing responsibilities. This capacity helps the person to recuperate and cope with difficulties and stress. Health professionals also develop different approaches to cope with the difficulties they experience, and these approaches are closely related to psychological resilience. Healthcare professionals also use different methods to cope with stress because they have an intense and demanding job. These include recognizing stressful situations, receiving appropriate support, expressing their feelings, taking care of themselves mentally and physically, thinking positively, and setting goals. These approaches also help healthcare professionals to increase their psychological resilience [15].

Previous research has found that job stress can lead to psychological disorders such as burnout, anxiety, and depression in nurses [16], which may eventually deteriorate their physical and mental health, leading to a decline in their quality of life [17]. It has also been found a relationship between nurses' job resources, positive psychological capital, and their commitment to work [18]. Additionally, some studies found a relationship between nurses' self-efficacy, patient satisfaction, and job performance [19,20]. Relevant research has also demonstrated a positive relationship between nurses' work engagement and psychological capital [21-24]. The number of studies examining the effects of stress management and psychological resilience on job satisfaction, job performance, and continuance commitment is limited. In the literature, research that investigates the environmental factors promoting psychological resilience in nurses' work environments and develops an integrative theoretical model has identified key environmental factors that encourage psychological resilience [25-31].

The proposed integrative theoretical model assists in understanding and enhancing psychological resilience among nurses [32,33]. Another study analyzed the role of self-efficacy, agentic capacities, job satisfaction, and job engagement on the intention to leave the hospital. This research aimed to explain voluntary turnover among nurses and found that job satisfaction, job engagement, and self-efficacy play significant roles in reducing nurses' intention to resign [32]. Di Giuseppe et al, focusing on the predictors of stress and burnout among healthcare workers during COVID-19, reported that frontline workers scored higher in stress, emotional exhaustion, and depersonalization compared to their colleagues working in units not directly serving COVID-19 patients [34].

Considering the relevant literature review and the theoretical framework, the following hypotheses have been proposed.

H₁: Stress management has a significant and positive effect on job satisfaction.

H₂: Stress management has a significant and positive effect on job performance.

H₃: Stress management has a significant and positive effect on continuance commitment.

In addition, studies examining the relationship between psychological resilience and job performance also indicate that psychological resilience has a positive relationship with performance at work [35]. This means that employees with high psychological resilience in difficult working conditions can adapt to change more easily, cope better with obstacles, produce creative ideas, and exhibit a more challenging attitude, so their performance can also increase. Thus, it is possible to increase the work performance of the employees and to make the work environment more productive [36]. Psychological resilience developed in stressful working conditions also affects the level of job satisfaction [37]. Job satisfaction refers to the level of satisfaction and satisfaction that employees feel about their jobs [38]. This satisfaction is divided into two depending on internal and external factors. Intrinsic satisfaction arises depending on the nature of the job and the employee's feelings about the job.

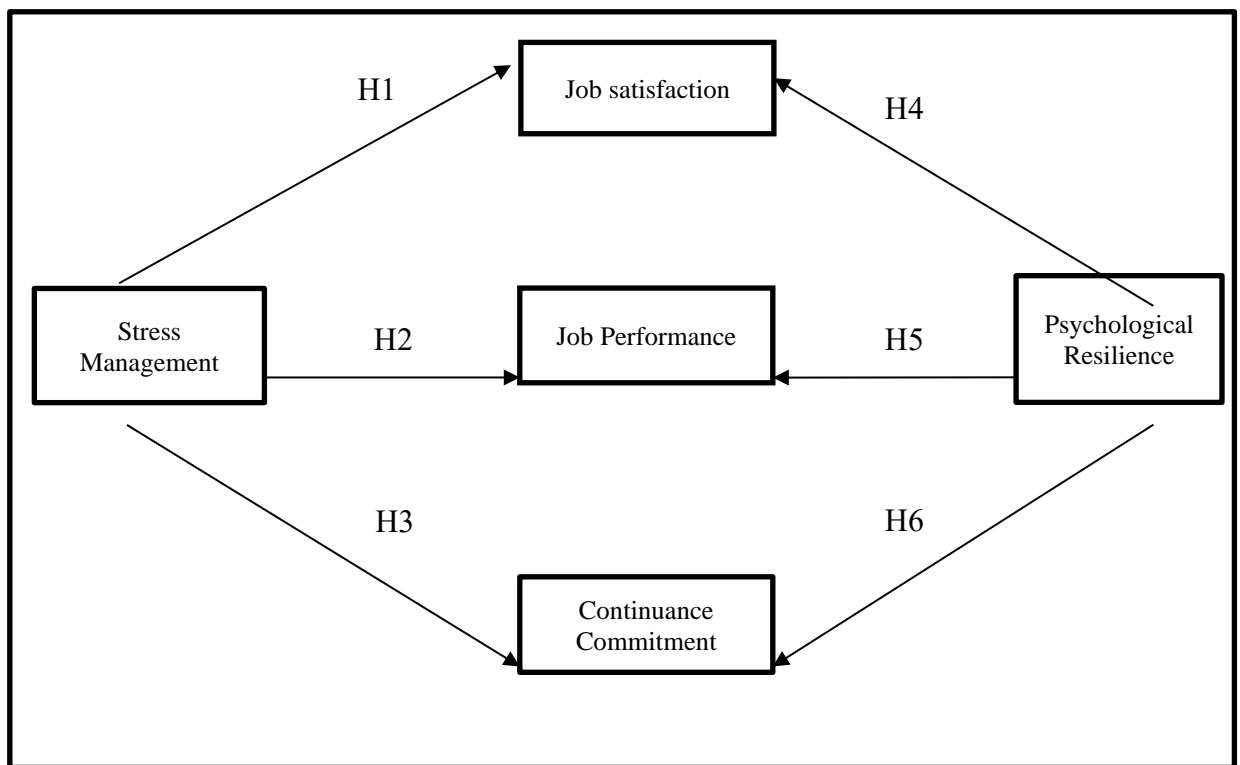
Factors such as success, appreciation, and responsibility are among the factors that affect internal satisfaction. External satisfaction, on the other hand, arises from factors related to the business environment such as business policies, working conditions, wages, and management style [39]. Employees' satisfaction levels in their jobs stem from the emotions and feelings they feel while

working, rather than the results they get after work [40]. Accordingly, the level of job satisfaction of the employee is also a determinant of the level of job commitment and psychological resilience. According to Lawler and Hall (1970), job commitment is “the degree to which the job situation is at the center of the self” [41]. On the other hand, continuance commitment is based on the preference of employees to stay in the company and their belief that the cost of leaving will be high [42]. Employees who experience high levels of continuous commitment may face challenges in their work environment or career that can impact their psychological well-being [43]. Previous research indicates that these employees may feel trapped in their current jobs, do not want to explore new opportunities, or may experience higher stress due to a perceived lack of control over their career paths [43-45]. It is thought that this may potentially reduce the resilience of employees who will have difficulty coping with these stressors. Considering the relevant literature review and the theoretical framework, the following hypotheses have been proposed.

- H4: Psychological resilience has a significant and positive effect on job satisfaction.
- H5: Psychological resilience has a significant and positive effect on job performance.
- H6: Psychological resilience has a significant and positive effect on continuance commitment

Research models (Figure 1) are presented below.

Figure 1. Theoretical model.



METHODS

Study design and participants

The population of this study consists of health personnel working in public hospitals operating in Istanbul, Turkey. The inclusion criteria for health professionals are as follows: (1) to be a professional doctor, nurse, midwife, physiotherapist, or health technician; (2) more than 6 months of continuous operation in the current position; and (3) voluntarily participate in this research. The exclusion criteria are as follows: (1) those who are studying or not working due to sickness or maternity leave, and (2) healthcare workers who are undergoing internships or training. The data

collected from 848 healthcare workers by snowball sampling method constitute the sample of this study. Snowball sampling is a non-probability sampling method because not all elements in the population have an equal chance of being selected. For this reason, this method was chosen because it was not possible to reach the list of all healthcare workers in this research [46].

Data collection

Data were collected by online and face-to-face survey methods between April and December 2022. Individuals who voluntarily participated in the survey filled out the questionnaire. Completed questionnaires have anonymously reached researchers and no information was provided to reveal e-mail addresses or identities of any respondents. The completion time of this survey is approximately 10 minutes. 1002 questionnaires were collected. 154 incomplete and missing data that were not included in the analysis. Additionally, validity and reliability analyses were applied to the collected data and standard deviations of the scales were calculated and those below 0.5 were not included in the analysis.

Measurements

This study used "Personal Information Form", "Stress Management", "Psychological Resilience", "Job Satisfaction", "Job Performance" and "Continuance Commitment" scales for collecting data.

- *Personal Information Form*: There are expressions to determine gender, marital status, age, education level, professional seniority, and positions of participants.
- *Stress Management*: The study employed a stress management scale originally developed by House and Rizzo [47], which has undergone prior validity and reliability testing. For this research, the scale was adapted based on Aslan's work [48] to better align with the specific objectives of the study. The scale consists of 4 items and follows a Likert-type format, with response options ranging from "1-Strongly Disagree" to "5-Strongly Agree." Higher scores indicate higher levels of stress management proficiency among participants. This unidimensional scale demonstrated a Cronbach's alpha of 0.67 in previous studies, indicating acceptable internal consistency. In the current study, Cronbach's alpha for the sample was found to be 0.71, reflecting a slight improvement in reliability, which further supports the scale's appropriateness for assessing stress management in this context.
- *Psychological Resilience*: The validity and reliability study was conducted by Durak's study [49]. The scale has 9 items and a Likert type. The range of its scores varies between "1-Strongly Disagree and 5-Strongly Agree". The scale consists of 9 items and the items 4,6,7, and 9 were reverse-coded. As the scores obtained from the scale increase, the psychological resilience levels of participants also increase. Cronbach Alpha value of the scale is 0.64. In the current study, the Cronbach alpha value of the sample was 0,68.
- *Job Satisfaction*: The validity and reliability study was conducted by Alnar's study [50]. The scale has 3-item and it is one-dimensional. The range of its scores varies between "1-Strongly Disagree and 5-Strongly Agree". There is no reverse coding in the scale. As the scores obtained from the scale increase, the job satisfaction levels of participants increase. Cronbach Alpha value of the scale was 0.85. The reliability coefficient of the Turkish version of this scale is 0.82.
- *Job Performance*: The study uses the scale prepared by Kirkman and Rosen [51] and later updated by Sigler and Person [52]. The scale has 4 items and is one-dimensional. The range of its scores varies between "1-Strongly Disagree and 5-Strongly Agree". There is no reverse coding in the scale. As the scores obtained from the scale increase, the job performance levels of participants increase. Cronbach Alpha value of the scale is 0.80. The reliability coefficient of the Turkish version of this scale is 0.79.
- *Continuance Commitment*: The study uses the sub-dimension of continuance commitment within the organizational commitment scale developed by Meyer, Allen, and Smith [53]. The scale is a 5-point Likert type. The range of its scores varies between "1-Strongly Disagree and 5-Strongly Agree", and as the scores obtained increase, continuance commitment increases. There is no reverse coding in the scale. In this study, Cronbach Alpha value for continuance

commitment is 0.73. The reliability coefficient of the Turkish version of this scale is 0.75.

Ethical aspects

This study was approved by the Institutional Review Board of Esenyurt University (Approval no. 2022/05-2). Necessary research permissions were obtained from the relevant health institutions. Participants were informed about the purpose and scope of this research on the first page of the questionnaire.

Statistical analysis

Data from 848 participants were analyzed in this study. Data were evaluated using IBM’s statistical program SPSS Statistics 26.0 and Hayes Process Macro statistical program. In the research, data were examined using frequency analysis, explanatory factor analysis, reliability analysis, Pearson correlation analysis, and multiple regression analysis. It is observed that Skewness and Kurtosis values for “Stress Management”, “Psychological Resilience”, “Job Satisfaction”, “Job Performance” and “Continuance Commitment” scales vary between -0.878 and 1.544 [54].

When Skewness and Kurtosis values of data are examined, it turns out that the normal distribution condition is met. Descriptive statistics (mean, standard deviation, minimum, maximum frequencies (n) and percentages) in the analysis of categorical variables, independent sample t-test to determine whether there is a significant difference between demographic variables and scales, one-way analysis of variance, Pearson correlation to determine relationships between scales analysis were used. Also, the multiple regression analysis method was used to test the aforementioned-research hypotheses.

RESULTS

Participants data

Socio-demographic characteristics of healthcare workers are shown in Table 1. As shown, female healthcare workers are higher than males, between 26-33 years higher than other ages, number of nurses and midwives is higher than in other positions.

Table 1. Socio-demographic characteristics of healthcare workers.

Variables	Category	N
Sex	Female	538
	Male	310
Marital status	Married	485
	Single	363
Age	18-25	180
	26-33	311
	34-41	234
	42-50	83
	51 and older	40
Education Level	High School	120
	Associate Degree	136
	Bachelor Degree	519
	Master Degree	73
Professional Seniority	6 month-1 years	125
	2-5 years	260
	6-10 years	165
	11-20 years	200
	21 and longer	82
Position	Doctor	130
	Nurse	397
	Midwife	234
	Physiotherapist	52
	Health Technician	35

Analysis of variables by socio-demographic characteristics of healthcare workers

The analysis of stress management, psychological resilience, job satisfaction, job performance, and continuance commitment by gender and marital status is shown in Table 2.

Table 2. Evaluation of the scales used in the study according to gender and marital status.

Variables**	Gender		F value	P value
	Women (n:538)	Men (n:310)		
Stress Management	2,66±0,85	2,56±0,91	0,814	0,416
Psychological Resilience	3,60±0,53	3,61±0,48	-0,125	0,900
Job Satisfaction	3,70±0,98	3,87±0,92	-1,243	0,215
Job Performance	4,20±0,61	4,14±0,63	0,691	0,490
Continuance Commitment	3,17±0,85	3,42±0,79	-2,156	0,032*

Variables**	Marital Status		T value	P value
	Married(n:485)	Single (n:363)		
Stress Management	2,66±0,82	2,61±0,92	0,546	0,585
Psychological Resilience	3,62±0,51	3,57±0,54	0,879	0,380
Job Satisfaction	3,76±0,98	3,70±0,95	0,596	0,551
Job Performance	4,22±0,59	4,15±0,66	1,061	0,289
Continuance Commitment	3,19±0,80	3,27±0,91	-0,887	0,376

Note: * $p < 0,05$ **Independent/unpaired sample t-test was applied (the symbol " ± " represents the standard deviation)

It was determined that there was no significant difference between stress management, psychological resilience, job satisfaction, job performance, and gender among healthcare workers ($p > 0.05$; Table 2). According to these findings, there was a significant difference between gender and continuance commitment in healthcare workers ($p = 0.032$), and continuance commitment was significantly higher among men (Table 2).

No significant difference was found between stress management, psychological resilience, job satisfaction, job performance, continuance commitment, and marital status ($p > 0.05$; Table 2).

The evaluation of stress management, resilience, job satisfaction, job performance, and continuance commitment by age, education level, and position are presented in Table 3.

Table 3. Evaluation of scale scores by age, education, and job position.

Variables	N	Stress Management	Psychological Resilience	Job Satisfaction	Job Performance	Continuance Commitment
Age*						
18-25 years ¹	180	2,56±0,88	3,67±0,51	3,77±1,00	4,15±0,68	3,45±0,92
26-33 years ²	311	2,54±0,91	3,54±0,54	3,60±1,01	4,12±0,65	3,27±0,85
34-41 years ³	234	2,68±0,80	3,61±0,47	3,72±0,91	4,27±0,50	3,14±0,81
42-50 years ⁴	83	2,73±0,83	3,66±0,52	3,87±0,96	4,25±0,62	3,04±0,80
51 and older ⁵	40	3,34±0,40	3,60±0,51	4,24±0,53	4,36±0,42	3,29±0,64
Test value		F:2,631	F:1,031	F:1,768	F:1,204	F:2,289
Statistical value		P:0,034*	P:0,391	P:0,135	P:0,309	P:0,060
Education Level*						
High School	120	2,54±0,70	3,39±0,53	3,84±0,94	4,06±0,85	3,30±0,75
Associate Degree	136	2,77±0,99	3,62±0,63	3,99±0,89	4,33±0,64	3,31±0,99
Bachelor Degree	519	2,62±0,83	3,59±0,47	3,64±0,95	4,17±0,58	3,24±0,81
Master Degree	73	2,64±0,93	3,66±0,60	3,89±1,04	4,21±0,68	3,10±0,88
Test value		F:0,350	F:0,910	F:2,159	F:0,842	F:0,722
Position*						

Doctor	130	3,32±0,99	3,54±0,57	3,94±0,99	3,88±0,90	2,87±0,55
Nurse	397	2,21±0,85	3,62±0,51	2,73±0,96	3,20±0,60	3,27±0,82
Midwife	234	2,53±0,90	3,55±0,41	3,45±1,11	4,18±0,53	3,04±0,89
Physiotherapist	52	2,30±0,87	3,49±0,59	3,45±0,95	3,94±0,42	3,00±0,93
Health Technician	35	2,63±0,69	3,68±0,53	4,00±0,88	4,32±0,63	3,25±0,83
Test value		F:1,188	F:0,441	F:1,658	F:1,725	F:1,201
Statistical value		P:0,031*	P:0,851	P:0,131	P:0,114	P:0,305

Note: *p<0,05 **One-way analysis of variance (ANOVA) was applied.

Our findings indicate no significant differences between psychological resilience, job satisfaction, job performance, continuance commitment, and age (p>0.05; Table 3). However, a significant difference was observed between stress management and age (p=0.034), with individuals aged 51 years and older demonstrating significantly higher stress management levels. The Post Hoc Tukey test revealed that this difference was significant between the 51+ age group and the 18-25 and 26-33 age groups, with the older group displaying superior stress management skills (p<0.05; Table 3). Regarding education level, no significant differences were found in stress management, psychological resilience, job satisfaction, job performance, or continuance commitment (p>0.05; Table 3). A one-way analysis of variance (ANOVA) was conducted to assess potential differences in stress management, resilience, job satisfaction, job performance, and continuance commitment based on professional seniority (position). The analysis showed no significant differences across these variables and professional seniority (p>0.05; Table 3). However, a significant difference was detected between stress management and position (p=0.031), with nurses exhibiting lower stress management levels compared to doctors, who scored higher on stress management.

Correlation and regression analyses

Pearson correlation analysis, reliability analysis of scales, and mean score statistics between stress management, psychological resilience, job satisfaction, job performance, and continuance commitment are shown in Table 4.

Table 4. Pearson correlation analysis and mean score statistics between stress management, psychological resilience, job satisfaction, job performance, and continuance commitment.

Variables	Min-Max	Mean	Stress Management	Psychological Resilience	Job Satisfaction	Job Performance	Continuance Commitment	
Stress Management	1-5	2,64±0,86	R P	1				
Psychological Resilience	1-5	3,60±0,52	R P	,369** ,000	1			
Job Satisfaction	1-5	3,73±0,97	R P	,376** ,000	,577** ,000	1		
Job Performance	1-5	4,19±0,62	R P	,594** ,000	,505** ,000	,486** ,000	1	
Continuance Commitment	1-5	3,22±0,84	R P	,115* ,031	,026 ,623	,143** ,007	,028 ,605	1
Cronbach Alpha				,676	,643	,857	,807	,734
Skewness				-0,509	-0,092	-0,621	-0,878	-0,244
Kurtosis				-0,147	0,160	-0,159	1,544	-0,151

Note: *p<0,05 **p<0,01

Cronbach’s alpha values for the study’s variables indicated acceptable reliability across most scales: stress management (α=0.67), psychological resilience (α=0.64), job satisfaction (α=0.85), job performance (α=0.80), and continuance commitment (α=0.73). A significant positive correlation was found between stress management and job satisfaction (r=0.376), job performance (r=0.594), and continuance commitment (r=0.115). Additionally, a significant positive relationship emerged between psychological resilience and both job satisfaction (r=0.577) and job performance (r=0.505).

However, no significant relationship was identified between psychological resilience and continuance commitment ($p > 0.05$; Table 4). Mean scores were as follows: stress management (2.64 ± 0.86), psychological resilience (3.60 ± 0.52), job satisfaction (3.60 ± 0.52), job performance (4.19 ± 0.62), and continuance commitment (3.22 ± 0.84) (Table 4). The effects of stress management on job satisfaction, job performance, and continuance commitment are presented in Table 5.

Table 5. The effect of stress management on job satisfaction, job performance, and continuance.

Model	Independent Variable	Dependent Variable: Job Satisfaction				95% Confidence Interval	
		Non-standardized coefficients	Standardized coefficients	T	Sig.	LL	UL
		B	Std. Error	Beta (β)			
Model 1	(Constant)	2,621	,156		16,815	,000	
	Stress Management	,423	,056	,376	7,552	,000	,312 ,534
<i>R = ,376; R² = ,142; Adjusted R² = ,139; F = 57,033; p = ,000**</i>							
		Dependent Variable: Job Performance					
Model 2	(Constant)	3,068	,086		35,528	,000	
	Stress Management	,426	,031	,594	13,738	,000	,357 ,490
<i>R = ,594; R² = ,353; Adjusted R² = ,351; F = 188,745; p = ,000**</i>							
		Dependent Variable: Continuance Commitment					
Model 3	(Constant)	2,928	,145		20,161	,000	
	Stress Management	,113	,052	,115	2,162	,031*	-,010 ,229
<i>R = ,115; R² = ,013; Adjusted R² = ,010; F = 4,674; p = ,031*</i>							

Note: * $p < 0,05$ ** $p < 0,01$

The analysis revealed that stress management has a significant and positive effect on job satisfaction among healthcare workers ($\beta = 0.376$). The variance explained by stress management on job satisfaction is $R^2 = 0.142$ (Model 1), indicating that 14.2% of the variability in job satisfaction is accounted for by stress management. Similarly, stress management was found to have a significant and positive effect on job performance ($\beta = 0.594$), with the explained variance for job performance being $R^2 = 0.353$ (Model 2), indicating that 35.3% of the variability in job performance is explained by stress management.

In the regression analysis examining the effect of stress management on continuance commitment, a significant p-value ($p = 0.031$) was identified. However, despite the statistical significance, a closer examination of the confidence interval (LL = -0.010; UL = 0.229) revealed that the β coefficient did not fall within the desired range, suggesting that stress management does not have a substantial effect on continuance commitment in this context (Model 3; Table 5).

The effects of psychological resilience on job satisfaction, job performance, and continuance commitment are presented in Table 6.

Table 6. The effect of psychological resilience on job satisfaction, job performance and continuance commitment.

Model	Independent Variable	Dependent Variable: Job Satisfaction				95% Confidence Interval	
		Non-standardized coefficients	Standardized coefficients	t	Sig.	LL	UL
		B	Std. Error	Beta (β)			
Model 1	(Constant)	-,141	,298		-,471	,638	
	Psychological Resilience	1,075	,082	,577	13,141	,000**	,894 1,234
<i>R = ,577; R² = ,333; Adjusted R² = ,331; F = 172,697; p = ,000**</i>							
		Dependent Variable: Job Performance					
Model 2	(Constant)	2,030	,201		10,086	,000**	

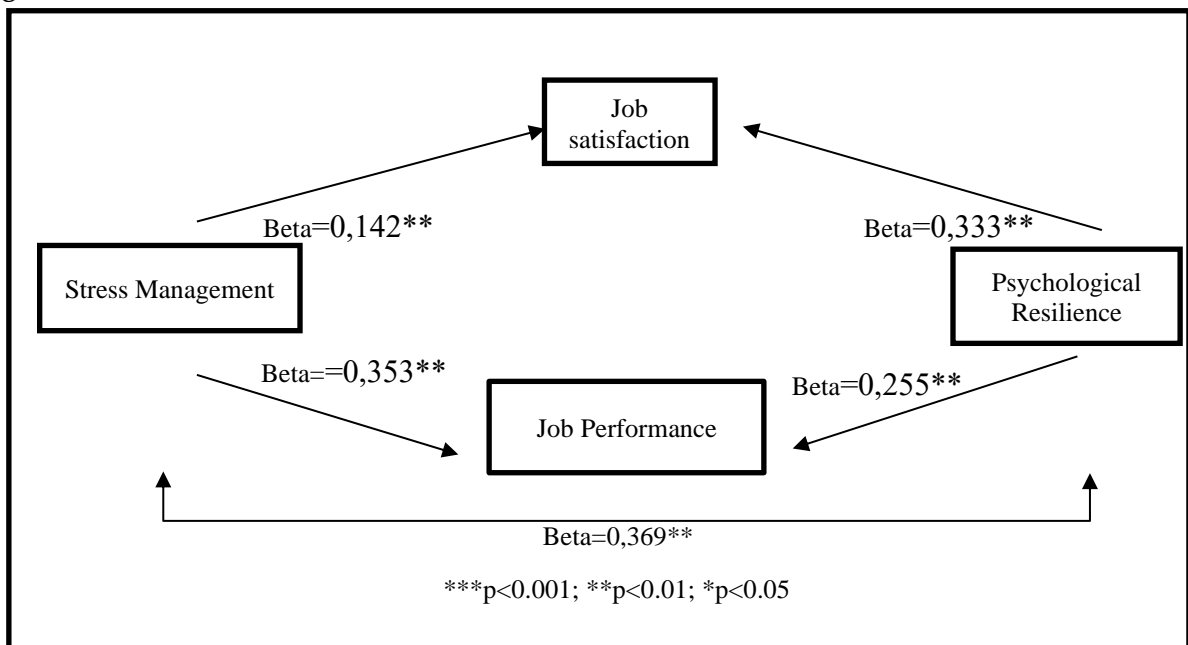
	Psychological Resilience	,600	,055	,505	10,874	,000**	,469	,745
	<i>R= ,505; R2=,255; Adjusted R2 = ,253; F=118,242; p=,000*</i>							
	Dependent Variable: Continuance Commitment							
	(Constant)	3,071	,317		9,679	,000**		
Model 3	Psychological Resilience	,043	,087	,026	,493	,623	-,162	,243
	<i>R= ,026; R2 =,001; Adjusted R2 = ,002; F=0,243; p=,623</i>							

Note: * $p < 0,05$ ** $p < 0,01$

Our findings indicate that psychological resilience has a significant and positive effect on job satisfaction among healthcare workers ($\beta=0.577$). The variance explained by psychological resilience for job satisfaction is $R^2=0.333$ (Model 1), meaning that 33.3% of the variability in job satisfaction is accounted for by psychological resilience. Additionally, psychological resilience was found to have a significant and positive effect on job performance ($\beta=0.505$), with the variance explained by psychological resilience for job performance being $R^2=0.255$ (Model 2), indicating that 25.5% of the variability in job performance is explained by psychological resilience.

However, psychological resilience did not have a significant effect on continuance commitment ($p=0.623$) (Model 3; Table 6).

Figure 2. Modified research model.



Multiple regression analyses were conducted to assess the significance of the theoretical model (Figure 1). As shown in Tables 4, 5, 6, and Figure 2, stress management has a significant impact on both job satisfaction and job performance. Consequently, H1 ($R^2=0.142$) and H2 ($R^2=0.353$) are supported. However, the effect of stress management on continuance commitment was not significant (Table 4), and thus, H3 is not supported.

Similarly, psychological resilience demonstrated a significant positive effect on job satisfaction and job performance (Table 6), providing support for H4 ($R^2=0.333$) and H5 ($R^2=0.255$). In contrast, no significant effect was found for psychological resilience on continuance commitment (Table 6), leading to the rejection of H6.

DISCUSSION

Psychological resilience is commonly defined as an individual’s capacity to cope with obstacles, uncertainty, and adverse situations while maintaining success. In the context of positive organizational behavior, resilience refers specifically to an individual’s positive psychological

capacity to manage setbacks, uncertainty, conflicts, failures, limited development opportunities, and increased responsibilities. The literature on organizational behavior identifies resilience as a core competency essential for modern employees, particularly in today's business world, where adaptability and perseverance are key to professional success. Employees who can adapt to professional responsibilities, workplace challenges, and unexpected changes demonstrate a high capacity for resilience. Moreover, the psychological resilience of employees is a key determinant of an organization's overall resilience.

This study aimed to assess the perceptions of healthcare personnel, who work in highly stressful environments, regarding individual outcomes related to their resilience capacity. We explored variables such as job satisfaction, continuance commitment, and job performance, with the premise that healthcare workers with strong psychological resilience are better equipped to overcome the stress and challenges associated with their roles. These resilient workers are foundational to building resilient organizations.

Although employee resilience is widely studied from a psychological perspective, research on resilience within the field of organizational behavior remains limited. Existing studies focus on measuring employee resilience [55], the relationship between resilience and employee behaviors [56], and employees' perceptions of organizational resilience [57]. Additionally, previous research has explored the connection between psychological resilience and job satisfaction, organizational commitment, and performance [15,58]. However, to the best of our knowledge, no studies have comprehensively analyzed the relationship between stress management, resilience, job satisfaction, continuance commitment, and job performance in a holistic model [58].

Research on psychological resilience across various occupational groups reveals risk and protective factors that influence resilience, such as among nurses [62]. For example, stress management is linked to resilience in tourist guides [63], while psychological resilience in teachers has been shown to influence professional burnout [64-66]. Additionally, resilience has been linked to organizational commitment and retention among public sector employees [67], and stress management has been found to play a role in resilience among teachers. Studies have also identified a mediating role for resilience in the relationship between job satisfaction and organizational stress among academics [68-72].

This study employed Lazarus and Folkman's (1984) theory [13], a widely used framework in stress management literature, to explain the relationship between stress management and psychological resilience. Our findings align with studies conducted in Sri Lanka [73] and Korea [74], which show that psychological resilience among healthcare workers (particularly nurses) positively impacts job performance. Additionally, studies in Singapore [75] and Australia [76] highlight a significant relationship between stress management and resilience. Research conducted in Milan hospitals supports the effectiveness of Mindfulness-Based Stress Reduction (MBSR) programs in reducing emotional exhaustion and enhancing attention among healthcare professionals [77,78].

Organizational behavior literature further demonstrates the link between resilience and job satisfaction in psychiatric nurses [79], resilience and burnout among Japanese psychiatric hospital nurses [80], and well-being and resilience in palliative care nurses [81]. Additionally, resilience training programs have proven effective in managing stress in nursing education [82]. In Australia, resilience among operating room nurses is best explained by factors such as hope, self-efficacy, and a sense of control [76]. According to Okito et al. (2022) [83], resilience is associated with lower depression and anxiety scores among parents of preterm infants in NICU settings.

Our findings reveal a significant positive correlation between psychological resilience and job satisfaction among healthcare workers. This suggests that employees with higher resilience levels experience greater job satisfaction and are better equipped to handle challenging work environments [84]. Notably, the COVID-19 pandemic has exacerbated mental health issues among healthcare workers, particularly nurses, who have higher rates of anxiety and depression than physicians [85]. Resilience plays a critical role in helping healthcare professionals manage these challenges, protecting them from the adverse effects of stress [13,86]. Furthermore, resilience and job satisfaction have been shown to positively influence organizational commitment, as demonstrated in studies of Korean-American nurses [87].

The “Health Services Workplace Environmental Resilience Model” identifies factors such as counseling, clinical surveillance, education, and self-care as key determinants of resilience [88]. Chusak et al. [89] also found that the “Stress Management and Resilience Training” program positively impacted nurses’ job performance. Our research supports these findings, revealing that stress management significantly enhances job satisfaction among healthcare workers. This is consistent with previous research by Sullivan and Bhagat [90], Adamopoulos and Syrou [91], and Fairbrother and Warn [92], which demonstrates a positive relationship between stress management and job satisfaction.

Furthermore, our results indicate that stress management positively influences job performance. The relatively high job performance among healthcare workers in this study may explain these findings. No significant differences were observed in job performance across socio-demographic factors such as gender, marital status, age, education level, or professional seniority. However, we did identify a significant gender difference in continuance commitment, with men reporting higher levels. Notably, our study did not find a significant effect of resilience or stress management on continuance commitment. Nevertheless, age was a determining factor, with older healthcare workers demonstrating higher stress management capabilities.

Study limitations and practical implications

Our findings suggest a strong relationship between effective stress management strategies and higher psychological resilience among healthcare workers. Implementing comprehensive stress management interventions can enhance the well-being of healthcare workers, resulting in improved job satisfaction, performance, and continuance commitment. Moreover, job satisfaction emerged as a critical predictor of psychological resilience. Creating a positive work environment, offering professional development opportunities, and recognizing healthcare workers’ efforts are essential steps in fostering both job satisfaction and resilience.

The reciprocal relationship between job performance and psychological resilience highlights the need for organizations to strengthen the resilience of their workforce, leading to higher productivity and improved patient care [22]. Continuance commitment, as a dimension of organizational commitment, also plays a crucial role in the well-being of healthcare workers. Organizations should invest in strategies that foster employee attachment and loyalty, ultimately contributing to greater resilience and job satisfaction [93-100].

Resilience is crucial in enhancing healthcare workers’ job performance, particularly in environments where mistakes carry high risks. Institutions should prioritize stress management practices to prevent burnout and psychological disorders [101-108]. Strategies such as stress awareness, exercises, and relaxation techniques are expected to reduce stress levels effectively [102-112]. Additionally, fostering a supportive organizational environment and encouraging strong social networks can further enhance employees’ resilience.

CONCLUSION

This study highlights the multifaceted interplay between stress management, psychological resilience, job satisfaction, performance, and continuance commitment among healthcare workers. Addressing the mental health needs of healthcare professionals is essential to maintaining a resilient workforce and ensuring high-quality care. Further research and evidence-based interventions will be crucial in enhancing the well-being of healthcare workers and the overall functioning of healthcare systems globally.

As with all quantitative studies, the primary limitation of this research lies in its data collection methodology. The study was conducted in a single hospital in Istanbul, Turkey, over a limited timeframe, which may affect the generalizability of the results. Additionally, the low participation rate, influenced by the stressful working conditions of healthcare workers, may have impacted the significance of the findings. The time constraints also limited the ability to collect data through semi-structured interviews, which could have enriched the analysis.

Author Contributions:

Conceptualization: H.K.A; Methodology H.K.A; Software: H.K.A; E.Ö Validation: H.K.A; E.Ö. Formal analysis: H.K.A; E.Ö Investigation H.K.A; M. T. D.; Resources H.K.A; M. T. D.; E.Ö Data curation: H.K.A; E.Ö Writing—

original draft preparation: H.K.A; Writing—review and editing H.K.A; M. T. D.; Visualization: H.K.A. All authors have read and agreed to the published version of the manuscript.

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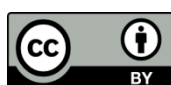
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