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Burnout and Psychological Resilience in Nurses: A Structural Equality Modeling

Meryem Fırat[1], Burcu Demir Gökmen[2], Yalçın Kanbay[3], Mehmet Utkan[4]

[1]Department of Nursing, Erzincan Binali Yıldırım University Faculty of Health Sciences, Erzincan, Turkey
[2]Department of Nursing, Ağrı İbrahim Çeçen University Faculty of Health Sciences, Ağrı, Turkey
[3]Department of Nursing, Artvin Çoruh University Faculty of Health Sciences, Artvin, Turkey
[4]Department of Nursing, Kafkas University Faculty of Health Sciences, Kars, Turkey

Abstract

Background: It is important to identify the factors that affect burnout and examining psychological resilience, which is thought to have a positive impact on burnout.

Aim: This cross-sectional study was conducted to examine the effects of psychological resilience and other factors on nurses' burnout levels.

Method: Data were collected between June and August 2020 using the snowball sampling method. The sample consisted of 275 nurses working in different facilities across our country. The data collection instruments used were the "Demographic Characteristics Form," the "Brief Psychological Resilience Scale," and the "Burnout Scale Short Form." Data were analyzed with numbers, averages, percentages, and the structural equation model explaining the relationship between the observed/hidden variables.

Results: The goodness-of-fit values of the revised model for estimating factors influencing burnout in the nursing population were acceptable (χ^2 = 252.41, χ^2/df = 2.25, *NFI (Normed Fit Index)* = 0.92, *TLI (Tucker Leis Index)* = 0.94, *CFI (Comparative Fit Index)* = 0.95, *GFI (Goodness of Fit Index)* = 0.90, *AGFI (Adjustment Goodness of Fit Index)* = 0.88, *RMSEA (Root Mean Square Error of Approximation)* = 0.07, *RMR (Root Mean Square Residual)* = 0.14). Psychological resilience (t = −6.913; P < .001) in the model had 53% effect on burnout, while job satisfaction (t = −4.815; P < .001) had 31% effect. As can be seen, the level of "psychological resilience" and "job satisfaction" affected burnout in nurses by 59%. As the psychological resilience and job satisfaction levels of nurses increased, the burnout level decreased. However, the gender, age, marital status, family type, seniority, and educational status variables did not contribute significantly to the model.

Conclusion: According to the model obtained from the study, it was found that psychological resilience and job satisfaction were variables that influenced burnout levels in the opposite direction. Efforts can be made to enhance the psychological resilience of nurses.

Keywords: Nurse, burnout, psychological resilience, SEM

Introduction

The term "burnout" is defined as a decrease in workers' capacity to work, feeling worn out, and a decrease in their desires and aspirations related to work at the lowest level.[1] In the study, burnout is discussed in terms of the 3 dimensions of "depersonalization," "emotional exhaustion," and "lack of personal fulfillment." Burnout is a condition in which a person feels a lack of personal fulfillment. Emotional exhaustion is the feeling of emotional overload in relation to one's work. Depersonalization is the insensitive behavior of a person toward those he/she serves. Lack of personal success is explained by not being able to overcome the problem and perceiving oneself as inadequate.[1,2]

Many studies show that the negative situations experienced by nurses lead to a burnout phenomenon in the long term and have negative effects on emotional, physical, and mental aspects.[1,3-9] The study states that nurses who are satisfied with their jobs and find their work meaningful see themselves as competent in their jobs, have high intrinsic motivation, have good communication skills, and have good problem/conflict resolution skills, that is, nurses who embrace positive psychological characteristics experience less burnout.[7,10]

Psychological resilience is one of the variables in the framework of positive psychology that occupies an important place in the lives of people and workers. Psychological

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Corresponding author: Burcu Demir Gökmen
E-mail: burcudmr04@gmail.com

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resilience is defined as the ability to cope with sources of stress, recover, and bounce back quickly.[11-13] In other words, psychological resilience is a person's ability to successfully overcome negative conditions, recover, return to their previous functionality, and adapt to the new situation.[13] Psychological resilience is an important factor that enables individuals to adapt to new life conditions by initiating the positive adaptation process.[14] Thus, undesirable experiences that force the individual can be overcome by increasing the level of psychological resilience.[15,16] Psychological resilience plays an important role in developing positive psychology, increasing awareness, and protecting mental health.[17-19] Nurses with high levels of positive psychology knowledge and psychological resilience are found to have greater personal competence and tolerance of negative events. This is due to the fact that psychological resilience can be built upon and has a positive impact.[19]

Considering all this information, it is important to identify the factors that affect burnout in order to prevent burnout and for the individual and professional development of nurses who occupy a large place in the healthcare platform. Examining psychological resilience, which is thought to have a positive impact on burnout, is also important for planning efforts to reduce burnout and strengthen resilience. Reviewing the literature, one comes across numerous national and international studies on burnout.[3-6,8-10] However, most of them refer to nurses working in a single center in the same work environment. In addition, the methods of analysis used to evaluate the data resemble each other. In this study, we investigated the concepts of burnout and psychological resilience among Turkish nurses without any hospital restriction, and unlike other studies, structural equation modeling (SEM) was used to test the theoretically predicted relationship between these concepts. Unlike traditional multivariate methods, SEM can include unobservable variables in the analysis and is a confirmatory multivariate method that tests the fit of theory to data. Structural equation modeling explains the relationships between latent variables and observed variables through models. The measurement model reveals the relationships between latent/hidden variables and observed variables.[20] Therefore, the objective of this study was to use structural equation modeling to determine the extent to which nurses' psychological resilience influences their burnout levels.

Research Questions

- Does the level of psychological resilience influence the level of burnout in nurses?
- Do some sociodemographic characteristics affect the burnout level in nurses?

Materials and Methods

Type of Research Study

This cross-sectional study was conducted between June and August 2020.

Sampling and Data Collection

Data were collected online to avoid institutional constraints. Therefore, nurses who agreed to participate in the study were included in the sample using a snowball method. According to this method, after contacting one of the units belonging to the population, the sample size increases like a snowball by proceeding to the second unit with the help of the second unit and to the third unit with the help of the second unit.[21] First, the data collection forms prepared according to the research purpose were transferred to the online environment, and these transferred forms were transmitted to the nurses through various applications (WhatsApp. Bip, etc.). To contact nurses, each researcher distributed the study data collection form to nurses in the phone book in different cities and asked them to pass it on to their colleagues. A sample that includes 10 times the number of items in the question pool is a sufficient sample size for SEM studies. The aim of this study, considering this criterion, was to reach at least 220 samples because the questionnaire consisted of 22 statements. After the exchange with the nurses, a daily check of the data increment was performed. When there was no data increase for 15 days, the study was terminated with 275 data forms.

Data Collection Instruments

Data were collected using the Demographic Characteristics Form, the Brief Psychological Resilience Scale, and the Burnout Scale Short Form.

Demographic Characteristics Form

This is a questionnaire created by the researchers in the context of the literature on the topic.[3,5,10] The form consists of a total of 8 questions. The variables queried are age, gender, marital status, family type, education level, work system, job tenure, and job satisfaction. In the study, according to SEM, burnout was the latent/open variable, while psychological resilience, satisfaction, gender, age, marital status, family type, seniority, and education level were the observable variables.

Brief Psychological Resilience Scale (BRSS)

The Turkish validity and reliability of BRSS developed by Smith et al[22] were conducted by Doğan.[3] Brief Psychological Resilience Scale is a 5-point Likert-type, 6-item (2, 4, and 6 reverse items) instrument that measures psychological resilience in a self-report style. The questions were answered using the options “not at all true” (1), “not true” (2), “somewhat true” (3), “true” (4), and “completely true” (5). High scores on the scale indicate high levels of psychological resilience. In this study, the scale explained 74% of the total variance, and the Cronbach's alpha was 0.82.

Burnout Scale Short Form (BC-SF)

The Burnout Scale (Short Form) was used to assess nurses’ burnout levels. Pines adapted the 10-item Short Form of Pines and Aronson’s 21-item Burnout Scale (BS) for ease of use. The 10 items selected for the Burnout Scale Short Form were created in accordance with the contextual basis of the 21-item Burnout Scale, which assesses the person's level of physical, mental, and emotional exhaustion.[23] The short form of the Burnout Scale is a 7-point (1-never and 7-always) Likert scale designed to measure the degree of occupational burnout. In scoring the scale, the points awarded for 10 items were added together and divided by 10. The higher the score, the higher the level of burnout. The Turkish validity and reliability of the scale were conducted by Çapri[2] in 2013. The Cronbach's alpha value of the scale was 0.91. In this study, the Cronbach's alpha value was 0.94 and the variance explained by the scale was 60%.

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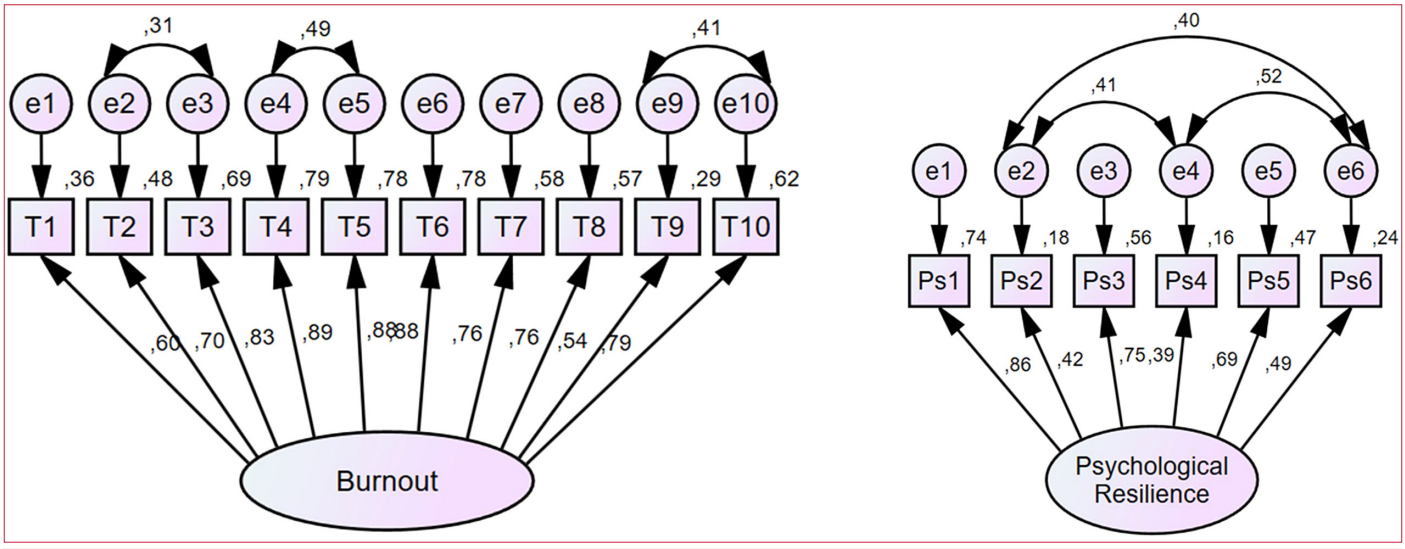

Figure 1. Path diagram for the measurement model of the burnout scale and the psychological resilience scale.

Measurement Model

The single-factor structure of the first-level burnout scale, which consists of 1 dimension and 10 items, was tested with CFA (Confirmatory Factor Analysis). Due to the normal distribution of the data, the maximum likelihood method was employed and found that the factor loadings of the items on the scale ranged from 0.54 to 0.89. In addition, when the fit indices of the scale were examined, the determined fit indices confirmed the measurement model of the burnout scale. Accordingly, the fit indices for the burnout scale were as follows: χ^2 = 86.18, χ^2/df = 2.69, NFI = 0.96, TLI = 0.96, CFI = 0.98, GFI = 0.94, AGFI = 0.90, RMSEA = 0.08, RMR = 0.09. The goodness-of-fit values obtained as a result of the first stage CFA showed that the proposed 1-factor model was compatible and agreeable with the data (Figure 1).

Ethical Aspects of the Research

The ethical approvals required for the research were obtained from the Ethics Committee for Scientific Research and Publications of Artvin Çoruh University (dated May 28, 2020 and meeting number 2020/8). Individual consent was obtained from nurse volunteers who agreed to participate in the study during the data collection phase, and the study was conducted in accordance with the principles of the Declaration of Helsinki 2008. On the first page of the forms prepared online, information about the study was provided, and participants were asked to check the statement "I agree to participate in the study" if they agreed to participate in the study. Nurses who completed the form online agreed to participate in the study.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences 23 (IBM SPSS Corp.; Armonk, NY, USA) and AMOS (Analysis of Moment Structures) 23 programs. Numbers, averages, and percentages were used to analyze the data. The data obtained in the study were analyzed using the structural equation model, which is a powerful statistical method and has many advantages over regression analysis. In the SEM model, we preferred the AMOS program because it has more practical utility.

Results

The demographic characteristics of the nurses who participated in the study are shown in Table 1. The mean age of the sample was 29.9 ± 7.7 years, 74.5% of the sample was female, about half of them were single (52.4%), and the majority of them had a nuclear family (82.5%).

Table 1. Demographic Characteristics of the Participants (n = 275)

Variable	Parameter	n	%
Gender	Woman	205	74.5
	Male	70	25.5
Marital status	Single	144	52.4
	Married	131	47.6
Family type	Nuclear	227	82.5
	Wide	48	17.5
Education level	High school	41	14.9
	Associate degree	41	14.9
	Undergraduate	176	64.0
	Graduate	17	6.2
Work system	Working hours (08:00 AM-04: 00 PM)	102	37.1
	Shift (04:00 PM to 08:00 AM)	173	62.9
	Mean (Min-Max)		**Standard deviation**
Age	29.9 (22-58)		7.7
Length of service	8.1 (1-32)		7.3
Professional satisfaction	5.3 (0-10)		2.2

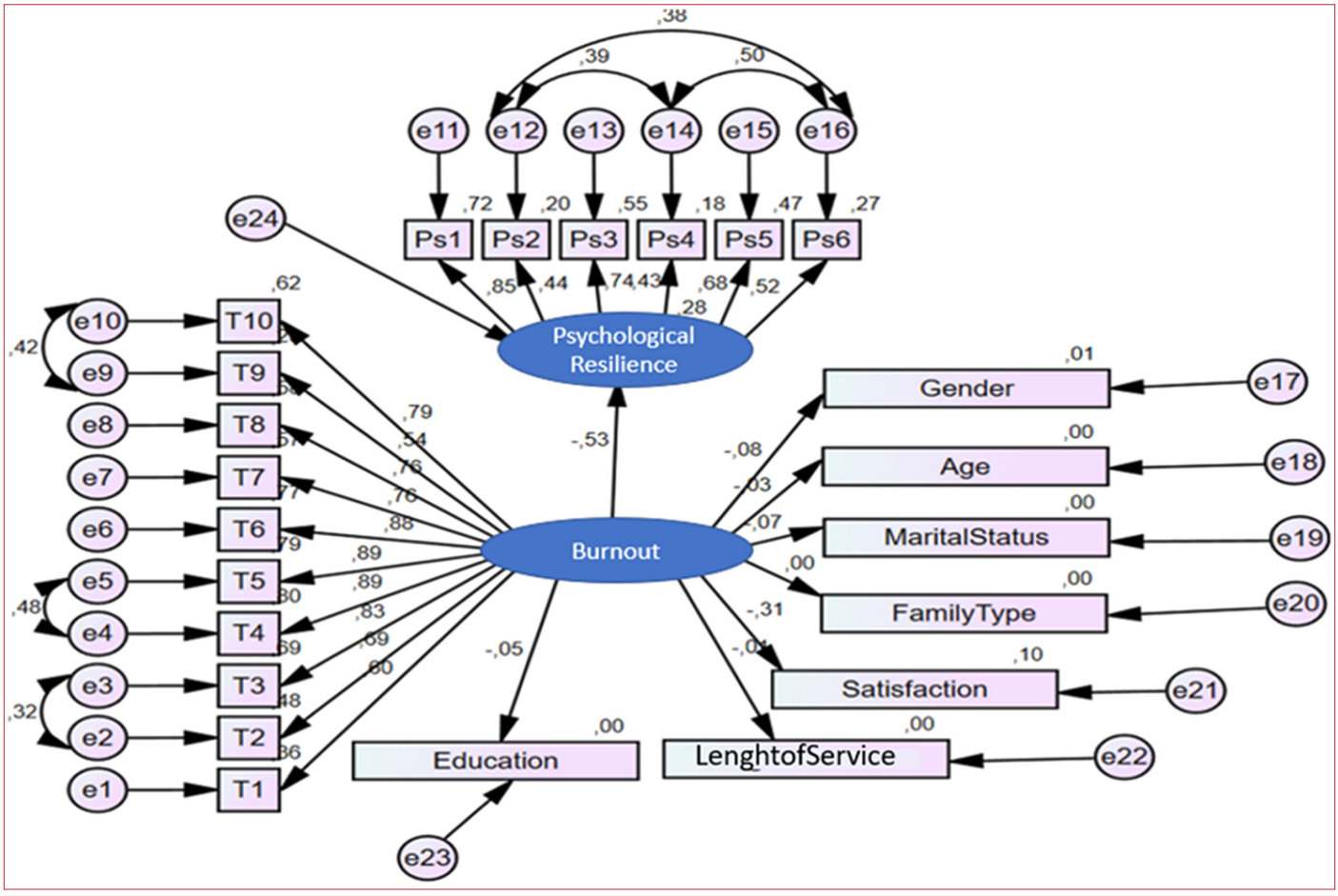

Figure 2. First structural model for predicting factors influencing burnout.

The sample consisted mainly of nurses with bachelor's degrees (64%), and a large proportion of them worked in shifts (62.9%). In addition, the average length of service was 8.1 ± 7.3 years, and the average job satisfaction rating (participants were asked to choose between 0 and 10 points) was 5.3 ± 2.2 out of 10 points.

To predict the factors that cause burnout in nurses, an initial structural model was constructed and the goodness of fit of this model was examined (Figure 2). Variables such as the sample mean score on the mental toughness scale, age, gender, marital status, family type, education level, length of service, and job satisfaction status were included in the model. When the goodness of fit of the model was examined, the values did not meet the minimum goodness of fit values required for a valid model (*χ^2 = 518.290, χ^2/df = 2.34, NFI = 0.86, TLI = 0.90, CFI = 0.92, GFI = 0.86, AGFI = 0.83, RMSEA = 0.70, RMR = 0.65).*

When examining the standardized regression weights of the variables included in the initial estimation model and the significance of their contribution to the model, it was found that the variables "psychological resilience" and "job satisfaction" had a significant relationship with the model (*P* = .000). On the other hand, the variables gender (*P* = .219), age (*P* = .603), marital status (*P* = .268), family

Table 2. Regression Weights for the Initial Model Defining the Factors Affecting Burnout

Parameter		Latent Structure	Standardized Regression Weight	Significance
Psychological resilience	<---	Burnout	-0.583	.000
Gender	<---	Burnout	-0.043	.219
Age	<---	Burnout	-0.309	.603
Marital status	<---	Burnout	-0.044	.268
Family type	<---	Burnout	0.002	.947
Length of service	<---	Burnout	-0.079	.871
Education status	<---	Burnout	-0.057	.384
Professional satisfaction	<---	Burnout	-0.902	.000

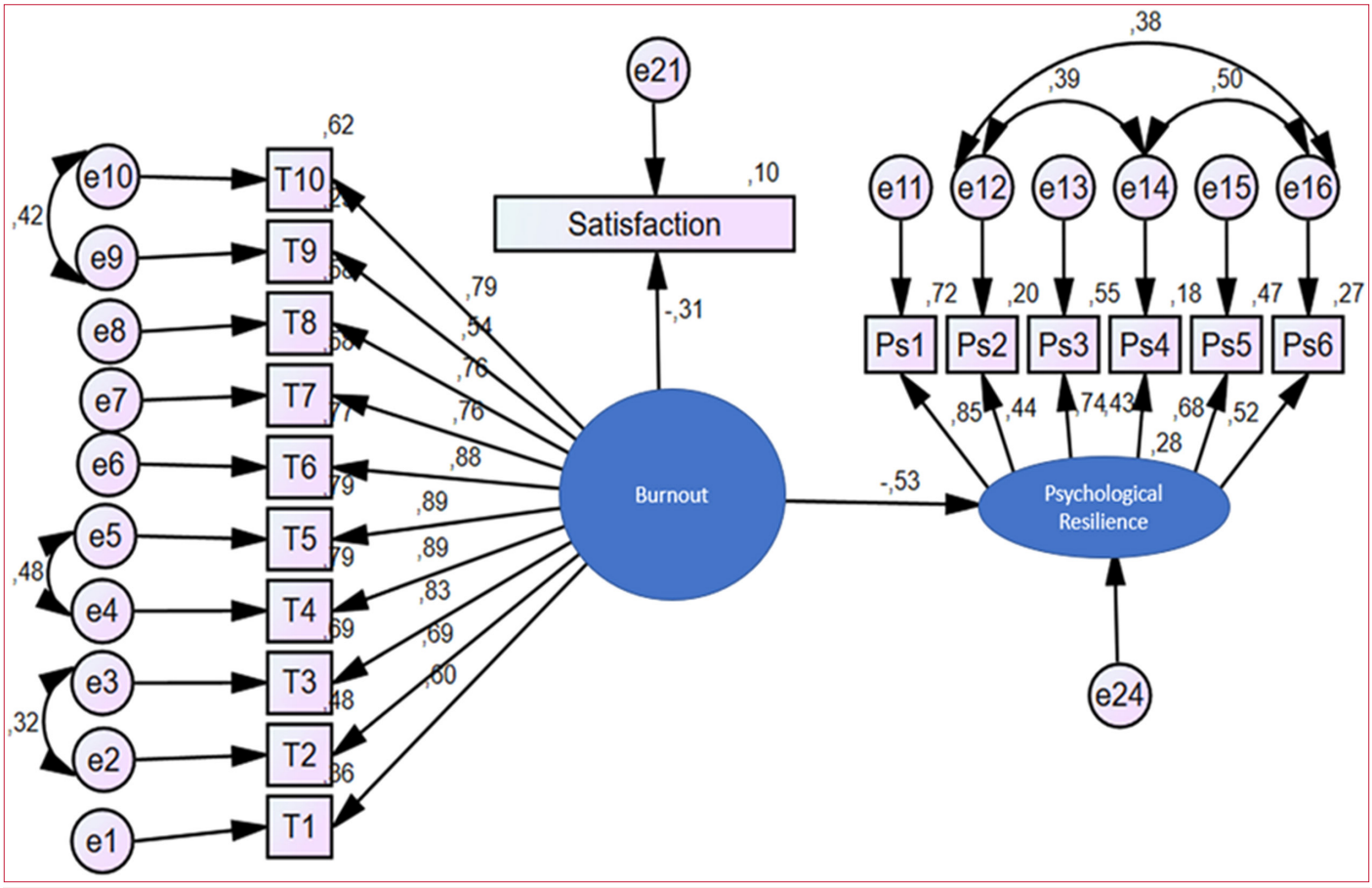

Figure 3. Revised model predicting factors influencing burnout.

type ($P = .947$), length of service ($P = .871$), and educational background ($P = .384$) did not show a significant relationship with the model. Moreover, the goodness-of-fit values of the original structural model as a whole were not acceptable. For these reasons, a new structural model was created by removing the variables "gender," "age," "marital status," "family type," "length of service," and "educational status" from the analysis to obtain a model with higher goodness-of-fit values or to improve the fit of the model to the data set (Table 2).

Looking at the revised model for predicting factors influencing burnout in nurses and the goodness-of-fit values, the goodness-of-fit values of the model were at an acceptable level ($\chi^2 = 252.41$, $\chi^2/df = 2.25$, $NFI = 0.92$, $TLI = 0.94$, $CFI = 0.95$, $GFI = 0.90$, $AGFI = 0.88$, $RMSEA = 0.07$, $RMR = 0.14$) and we decided on the final shape of the model. Psychological resilience ($t = -6.913$; $P < .001$) and job satisfaction ($t = -4.815$; $P < .001$) were found to have a significant impact on burnout. Among these independent variables, which were found to be significant using the model's standardized regression coefficients, the effect of "psychological resilience" (47%) was naturally much higher. As nurses' psychological resilience increased, the level of burnout decreased. Another effective factor for burnout in nurses was "job satisfaction." The effect of job satisfaction on burnout was found to be 20%. As nurses' job satisfaction increased, burnout decreased. According to the determined model, "psychological resilience" and "job satisfaction" together had 59% effect on burnout Figure 3.

Discussion

In this study, we explained the relationships between burnout in nurses and psychological resilience, age, gender, marital status, educational status, family type, and seniority by structural equation modeling and discussed the results in accordance with the literature. According to the research data, the variables age, gender, marital status, family type, education level, and seniority had no influence on burnout. When analyzing domestic and foreign literature, we came across different results. For example, there were studies showing that sociodemographic variables were related to burnout: Özer et al,[1] Çam and Engin,[7] and La Fuenta-Solona et al[9] were just some of these studies. However, in addition to these sources, there were also studies with similar results to the present study. For example, Uzun and Mayda[24] found that age, marital status, educational status, and seniority were not related to burnout; Akyüz[5] found that age, gender, and educational status were not related to burnout; Altay et al[25] found that marital status, educational status, and seniority were not related to burnout. Thus, the relationship between sociodemographic variables and burnout levels varied. The reason for these different results

in the literature could be the differences between the groups studied, that is, the fact that the studies were conducted in different regions. However, since this study collected data that are not tied to a specific location, it can serve as a basis for further studies.

This study found that psychological resilience influenced the extent of burnout and that resilience had a strong predictive effect on burnout, and the extent of burnout decreased as psychological resilience increased. The literature contains similar studies examining burnout and psychological resilience conducted on nurses working in a hospital setting and sharing similar environments.[6,9,10,19,26] These studies found an association between burnout and psychological resilience using similar analyses. This is a further reflection of the fact that nurses living in different cities and working in different hospitals with different administrations have almost the same characteristics. Increasing resilience is an effective way to reduce burnout regardless of where the nurse works or who they work with. This study reaffirmed the importance of psychological resilience in individual coping.

The present study found that job satisfaction affected the extent of burnout, that satisfaction had a strong predictive effect on burnout, and that the extent of burnout decreased as job satisfaction increased. Some studies in the literature have examined nurses' job satisfaction, and parallel results to this study have been reported.[5,10,19,27] These studies reported that nurses who were satisfied with their jobs had lower levels of burnout. We can argue that the more satisfied the nurses are with their job, no matter the time period, no matter where they work, and no matter how strenuous the process they go through, the lower the burnout level.

Conclusion

According to the results of the study, which analyzed the effective factors for burnout in nurses, psychological resilience and job satisfaction were found to be effective for burnout. In contrast, the variables “gender,” “age,” “marital status,” “family type,” “length of service,” and “education level” were not related to burnout.

Consistent with these results, we recommend that studies be conducted to examine nurses' psychological resilience and how to improve it. Because job satisfaction has a positive effect on burnout among nurses, we also recommend that studies be conducted to examine the factors that increase job satisfaction. Administrators should consider this factor because job satisfaction among nurses has a negative effect on burnout levels.

Ethics Committee Approval: Ethics committee approval was received for this study from Artvin Çoruh University Scientific Research Ethics Committee (date and number: May 28, 2020, 2020/8/15.05.2020-E 5459).

Informed Consent: Informed consent was obtained from the participants who participated in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – Y.K., M.F.; Design – M.F., Y.K.; Supervision – M.F., B.D.G., Y.K., M.U.; Funding – M.F., B.D.G., Y.K., M.U.; Materials – M.F., B.D.G., Y.K., M.U.; Data Collection and/or Processing – M.U., M.F., B.D.G., Y.K.; Analysis and/or Interpretation – Y.K.; Literature Review – M.F., B.D.G., Y.K., M.U.; Writing Manuscript – M.F., B.D.G., Y.K.; Critical Review – M.F., B.D.G., Y.K., M.U.

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Declaration of Interests: The authors have no conflicts of interest to declare.

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