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# The effect of the challenges experienced by nurses during the pandemic on their intention to leave work: the mediating role of the performance

Tuğba Öztürk Yıldırım<sup>1\*</sup> and Hilal Kuşcu Karatepe<sup>2</sup>

## Abstract

**Background** During the COVID-19 pandemic, negative working conditions in the nursing profession have worsened, and nurses have experienced various challenges that have increased their intention to leave work. Findings on the role of nurse performance under such conditions are limited.

**Aims** This study aimed to investigate the role of performance in the effect of the challenges experienced by nurses during the pandemic on their intention to leave work.

**Methods** This descriptive and cross-sectional study was conducted between July 2022 and August 2023 in Turkey using an online survey. A total of 462 nurses participated in the study, which employed the non-probability random and snowball sampling methods.

**Results** The mediating factors in the effect of the challenges experienced by nurses during the pandemic on their intention to leave work were task performance ( $\beta = 0.07$ ), contextual performance ( $\beta = 0.05$ ), and counterproductive work behavior ( $\beta = 0.12$ ), respectively.

**Conclusions** This study determined that task performance, contextual performance, and counterproductive work behavior played an important role in the effect of the challenges experienced by nurses during the pandemic on their intention to leave work. The present results may serve as a guide in determining effective strategies to be employed in possible pandemic situations.

**Keywords** Challenges, Intention to leave, Nurses' performance, Nursing, Pandemic

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## Introduction

Nurses' intention to leave work has become an increasingly urgent global issue [1]. The World Health Organization's report on the health workforce requirements for sustainable development goals predicts a shortage of more than 14.5 million healthcare workers by 2030, including 7.6 million nurses and midwives [2]. The context of intention to leave work among nurses refers to thinking about, planning, and making decisions concerning the possibility of leaving the profession, leading to actual resignation at the last stage [3]. When this process is not managed correctly, the loss of a trained nurse workforce can be quite costly for healthcare institutions [4]. Nursing Solutions, Inc. (NSI) have found that a single hospital in the United States loses between 6.6 and 10.5 million dollars on average per year due to nurse turnover [5]. One systematic review found that nurse turnover costs in Australia, South Korea, the USA, Brazil, and New Zealand are very high, ranging in amounts up to three times the average nursing salary [4]. Another study reported that nurse turnover rates result in costs between 0.31 and 1.3 times the average nursing salary [6]. Previous studies have shown that nurses' intention to leave is associated with factors such as performance [7], efficiency, profitability and sustainability of quality of care [3, 8], patient quality and safety, practice environment [9, 10], and increased working hours [11]. And also, nurse turnover is reported to be related to quality of care [12] and care outcomes in patients [4], as well as job stress [3], professional commitment, job satisfaction [3, 10], burnout, emotional labor [10], resilience and occupational stigma in nurses [11]. As such, the management of nurse retention has become a strategic necessity.

Nurse turnover has increased significantly due to the COVID-19 pandemic. One meta-analysis study found that approximately one third of nurses have thoughts of leaving the profession [1], while another study reported that one in five nurses consider leaving [13]. Playing a critical role while working on the front lines, nurses have faced many challenges during the pandemic [14]. They have been exposed to increased working hours, physical challenges such as fatigue and excessive amounts of stress, mental challenges such as feelings of burnout and deterioration of family integrity, social challenges such as role confusion, and institutional and managerial challenges such as lack of communication, lack of administrative support, and problems in the flow of information [14–16]. These challenges have undoubtedly affected nurse performance, as well [7, 17].

Performance is defined as the achievement of previously planned goals and objectives as a requirement of the job, as well as the fulfillment of assigned roles and responsibilities. In this context, Individual Work Performance (IWP) is evaluated according to three components

[18, 19]: task performance (TP) includes actions that achieve business goals (such as job-specific planning, organization, result-oriented behavior, and fulfillment of responsibility) [19]; contextual performance (CP) includes behaviors that benefit the institution but are not included in the job description (such as interpersonal relationships, organizational citizenship, extra role performance, peer support, and team relations) [20], and counterproductive work behavior (CWP) includes negative conduct that harms organization performance (such as disobedience, theft, drug use, and absenteeism) [21]. Nurse performance is the main criteria for organizational achievement [22]. The performance of nurses, who constitute the majority of human resources in health institutions, is essential to the achievement of positive patient, nursing, and organizational outcomes, as well as to the evaluation of the quality of healthcare services [20, 23]. While nurse performance has become even more important during the pandemic process. On the one hand, the challenges experienced during the pandemic have reduced nurse performance [24], while on the other, they have also forced nurses to increase their performance [25]. This dilemma constitutes the focus of the present study. Nurse performance is a fairly broad concept [26, 27].

Previous studies have found that challenges experienced during the pandemic have directly reduced nurse performance while increasing nurses' intentions to leave the profession [1, 3, 4, 13, 17]. However, no study has yet been conducted to comprehensively assess the impact of pandemic challenges (physical challenges, mental challenges, social challenges and institutional and managerial challenges) [15]. On the other hand in a qualitative systematic review study conducted by Bahlman-van Ooijen et al. (2023), the motivations of nurses to leave the nursing profession were revealed through studies conducted between 2010 and 2023. Accordingly, the reasons that increase the motivation of nurses to quit were reported under four headings: (1) Challenging working environment: poor working conditions, inadequate salary and contract, lack of opportunities for career development, lack of support; (2) Emotional distress: work-related stress, great responsibility and fear of failure; (3) Disillusionment with the reality of nursing: nursing as the second best career option, inconsistency between education and practice, social image of nursing; and (4) Hierarchy and discrimination culture: feeling subordinate, bullying behavior [28]. The additional challenges of the pandemic have exacerbated an already global shortage of nurses. Pandemics are unpredictable and their course can be volatile once they start. Similar processes can be experienced again as a result of pandemics with different names due to different reasons. In this context, it is unclear how health systems will respond when there is a shortage of

nurses in health institutions. Therefore, retaining the nurse workforce, especially in pandemic situations, is of great importance in ensuring the continuity of quality and safe nursing care and protecting public health [1, 9, 17, 29]. In this context, it was considered important to investigate the effect of the challenges experienced by nurses during the pandemic on their intention to leave work, as well as the role that nurse performance plays in this relationship.

### Theoretical framework

This study's model is based on Job Demand-Resource (JD-R) theory. JD-R theory separates the characteristics of a job into the categories of either job demands or job resources [30]. Job demands refer to the physical, psychological, social and organizational/managerial aspects of work that require effort (work overload, stress, etc.). Job resources, on the other hand, are factors that help to achieve job-related goals, reduce demands, and promote growth and development (development opportunities, participation in decisions, etc.) [31]. In other words, job demands include the job's requirements, while job resources include opportunities related to the fulfillment of these requirements [30]. The balance between increased job requirements and decreased resources leads to disadvantages such as work-family conflict, emotional exhaustion [32], decreased nurse well-being [33], and decreased organizational commitment [34]. Therefore, maintaining a balance between job requirements and resources can prevent negative outcomes such as nurse turnover. This study focused on the mediating role of performance in the effect of nurses' challenges during the pandemic on their intention to leave work.

The hypotheses were:

\*Nurses' TP mediates the effect of challenges experienced by nurses during the pandemic on their intention to leave work (H1),

\*Nurses' CP mediates the effect of challenges experienced by nurses during the pandemic on their intention to leave work (H2), and.

\*Nurses' CWP mediates the effect of challenges experienced by nurses during the pandemic on their intention to leave work (H3).

### Materials and methods

#### Research design, setting and sample

This study used a descriptive and cross-sectional design and followed STROBE guidelines. The study was conducted between June 2022 and August 2023 in Turkey using an online survey. A total of 462 nurses who had been working for participated in the study, which used snowball sampling method. G\*POWER analysis was performed to determine the sample's adequacy. According to the results of the analysis, a total of 416 participants

with an effect size of 0.20 at a power level of 80% (Critical F:1.85 ; df: 411) was found to be adequate [35, 36].

### Measures

This study's online survey consisted of four parts: (1) The Participant Information Form (containing participants' demographic and professional characteristics such as age, gender, marital status, educational level, professional experience in the institution, and type of institution/unit), (2) the Turnover Intention Scale (TIS), (3) the Individual Work Performance Questionnaire (IWPQ), and (4) the Scale for Challenges Faced by Nurses in Pandemics (SCFNP). The study's dependent variable was TIS, the independent variable was SCFNP, and the mediator variable was IWPQ.

#### Turnover intention Scale (TIS)

This scale, which evaluates employees' intention to leave work, was originally developed by Mobley, Horner, and Hollingsworth (1978). The one-dimensional, three-item, and 5-point Likert-type scale was adapted to Turkish by Örucü and Özafşarloğlu (2013). Its Cronbach's alpha value was found to be 0.904 in the adaptation study [37] and 0.929 in the present study. Responses in the scale range between "Strongly disagree=1" and "Strongly agree=5," without a cut-off point. Higher scores indicate a higher level of intention to leave work [37, 38]. Examples of items include "I often think about quitting my current job" and "I am actively searching for a position in other companies."

#### Individual Work Performance Questionnaire (IWPQ)

This scale, which determines the work performance level of nurses, was originally developed by Koopmans et al. (2016). The three-dimensional, Likert-type scale containing fourteen items was adapted to Turkish by Köroğlu Kaba & Öztürk (2021). The scale consists of three subscales, and responses range from: "1: Rarely" to "5: Always." The TP subscale consists of five items, the CP subscale consists of six items, and the CWP subscale consists of three items. Scale score is calculated by dividing the overall scale score by the number of items. Higher scores indicate a higher level of perceived work performance. Items 14 and 18 on the CWP subscale are reverse scored. In the adaptation study, Cronbach's alpha values of the overall scale and subscales of IWP (TP, CP, CWP) were found to be 0.80, 0.86, 0.78, and 0.72, respectively [18, 19]. In this study, Cronbach's alpha values of the overall scale and subscales of IWP (TP, CP, CWP) were found to be 0.919, 0.932, 0.917, and 0.819, respectively. Sample items include statements such as "I took on challenging tasks when they were available" and "I came up with creative solutions for new problems."

### **Scale for Challenges Faced by Nurses in Pandemics (SCFNP)**

This four-dimensional, 38-item, and 5-point Likert-type scale was developed by Kuşcu Karatepe et al. (2022) to determine the challenges encountered by nurses during the COVID-19 pandemic. Responses on the scale range from “Strongly disagree=1” to “Strongly agree=5,” and the four dimensions are: Physical Challenges (PC) (9 items), Mental Challenges (MC) (14 items), Social Challenges (SC) (8 items), and Institutional and Managerial Challenges (IMC) (11 items). Scale score is calculated by dividing the overall scale score by the number of items. Higher scores indicate an increase in the perceived level of challenges. In the scale study, Cronbach’s alpha values of the overall scale and subscales of SCFNP (PC, MC, SC, IMC) were found to be 0.92, 0.88, 0.87, 0.86, and 0.80, respectively. In this study, Cronbach’s alpha values of the overall scale and subscales of SCFNP (PC, MC, SC, IMC) were found to be 0.944, 0.817, 0.896, 0.867, and 0.854, respectively [15]. Sample statements include “I’m physically struggling due to increased working hours” and “I think that administrative support is insufficient.”

### **Data collection**

Snowball sampling method was used to recruit nurses with whom the researchers were in contact through an online survey (Google form) shared in Whatsapp and e-mail groups. Accordingly, nurses with whom the researchers were in contact were invited to fill out the questionnaire. Other nurses were recruited upon the invitation of the first respondents who shared the online survey with them. According to the snowball sampling method, one of the units of the population is reached through the second unit with the help of the unit contacted, and the third unit is reached with the help of the second unit. Accordingly, the sample size continues to expand [39]. The inclusion criteria were as follows: (1) being actively working in the hospital, (2) having provided nursing care to a patient diagnosed with COVID-19, and (3) volunteering and being informed to participate in the study. The first question of the survey was: “Do you agree to participate voluntarily?” Those who answered “Yes” to this question were able to continue filling out the form. Each participant was authorized to fill out only one survey by restricting IP address. The study’s completed forms were accessed anonymously on the Google form database and did not reveal the email addresses or identities of the participants. The duration of time required to complete the survey was approximately 20 min.

### **Data analysis**

SPSS 26 and Process Macro (Model 4) were used for analysis of the data. The skewness and kurtosis values of the data ranged between  $-1$  and  $+1$ , showing conformity to normal distribution [40]. Descriptive statistics and

Pearson’s correlation analysis between scales were performed using the SPSS 26.0 program. The internal consistency of the scales was calculated using Cronbach’s alpha coefficient. Hayes’ PROCESS macro (Model 4) was used for mediation analysis [41], and statistical significance was set at  $p < 0.05$ .

### **Ethical considerations**

**Ethical approval** was obtained from the research ethics committee of a university in Turkey (date: 26/04/2022, no: E.65837), and permission to use the TIS, IWPQ, and SCFNP was obtained from the authors via email. Participation in the study was voluntary, and each participant was allowed to respond only once.

## **Results**

### **Description of the participants**

Participants are described in Table 1. 89.2% of the nurses were female and 10.8% were male. In marital status, 53.9% were married and 46.1% were single. 38.5% of the nurses were 30 years of age or younger and 61.5% were over 30 years of age. In total professional experience, 33.3% had 1–5 years and 66.7% had over 5 years. In terms of education level, 11.3% were below undergraduate, 56.7% were undergraduate and 32% were postgraduate. 88.5% of the nurses work in public and 11.5% in private institutions. In the units where they worked, 57.6% worked in inpatient units and 42.4% in outpatient units (Table 1). Sociodemographic variables were used as control variables in the study. There was no significant difference between sociodemographic variables and CFNP, ILW, TP, CP and CWP (Table 1).

### **Mean score analysis results of the scales**

The average scores obtained by the nurses are shown in Table 2.

The average score obtained from the SCFNP was 3.92, and the scores obtained from each dimension were 4.25 for physical challenges, 4.07 for mental challenges, 3.65 for social challenges, and 3.72 for institutional and managerial challenges. Nurses’ intention to leave work was found to be 2.86, IWP was found to be 3.18, TP was found to be 3.74, CP was found to be 3.80, and CWP was found to be 2.19 (Table 2).

### **Relationships between variables**

Pearson’s correlation results between the scales are shown in Table 3.

A significant and negative correlation was found between nurses’ IWP and the dimensions of physical challenges ( $r: -0.393$ ), mental challenges ( $r: -0.363$ ), social challenges ( $r: -0.361$ ), and institutional and managerial challenges ( $r: -0.352$ ).

**Table 1** Sociodemographic characteristics of nurses (N=462)

Sociodemographic characteristics	N	%	CFNP $\bar{x} \pm ss$	ILW $\bar{x} \pm ss$	TP $\bar{x} \pm ss$	CP $\bar{x} \pm ss$	CWP $\bar{x} \pm ss$
<i>Gender</i>							
Female	412	89.2	3.91 ± 0.69	2.86 ± 1.31	3.74 ± 1.06	3.80 ± 0.99	2.19 ± 1.40
Male	50	10.8	4.04 ± 0.69	2.85 ± 1.40	3.75 ± 1.03	3.82 ± 0.99	2.21 ± 1.40
<i>Test İstatistiği</i>			<i>T</i> :-1.239	<i>T</i> :0.046	<i>T</i> :-0.056	<i>T</i> :-0.146	<i>T</i> :-0.072
<i>P Değeri</i>			<i>P</i> :0.216	<i>P</i> :0.963	<i>P</i> :0.956	<i>P</i> :0.884	<i>P</i> :0.943
<i>Marital Status</i>							
Married	249	53.9	3.96 ± 0.71	2.91 ± 1.35	3.69 ± 1.08	3.74 ± 1.03	2.14 ± 1.36
Single	213	46.1	3.87 ± 0.68	2.79 ± 1.28	3.81 ± 1.04	3.88 ± 0.93	2.26 ± 1.43
<i>Test İstatistiği</i>			<i>T</i> :1.444	<i>T</i> :0.976	<i>T</i> :-1.163	<i>T</i> :-1.514	<i>T</i> :-0.939
<i>P Değeri</i>			<i>P</i> :0.149	<i>P</i> :0.330	<i>P</i> :0.245	<i>P</i> :0.131	<i>P</i> :0.348
<i>Age</i>							
≤ 30 years	178	38.5	3.91 ± 0.70	2.81 ± 1.32	3.77 ± 1.08	3.85 ± 0.97	2.32 ± 1.47
> 30 years	284	61.5	3.93 ± 0.69	2.89 ± 1.32	3.73 ± 1.05	3.77 ± 0.99	2.11 ± 1.35
<i>Test İstatistiği</i>			<i>T</i> :-0.193	<i>T</i> :-0.603	<i>T</i> :0.381	<i>T</i> :0.752	<i>T</i> :1.578
<i>P Değeri</i>			<i>P</i> :0.847	<i>P</i> :0.547	<i>P</i> :0.703	<i>P</i> :0.452	<i>P</i> :0.115
<i>Professional Experience in the Institution</i>							
1-5 years	154	33.3	3.89 ± 0.71	2.80 ± 1.37	3.83 ± 1.03	3.88 ± 0.98	2.32 ± 1.51
> 5 years	308	66.7	3.93 ± 0.69	2.88 ± 1.29	3.70 ± 1.07	3.76 ± 0.99	2.13 ± 1.33
<i>Test İstatistiği</i>			<i>T</i> :-0.618	<i>T</i> :-0.622	<i>T</i> :1.261	<i>T</i> :1.164	<i>T</i> :1.379
<i>P Değeri</i>			<i>P</i> :0.537	<i>P</i> :0.534	<i>P</i> :0.208	<i>P</i> :0.245	<i>P</i> :0.169
<i>Educational Level</i>							
Lower	52	11.3	3.90 ± 0.70	2.84 ± 1.35	3.85 ± 1.14	3.86 ± 1.05	2.31 ± 1.47
Undergraduate	262	56.7	3.92 ± 0.69	2.77 ± 1.32	3.78 ± 1.05	3.82 ± 0.98	2.24 ± 1.47
Postgraduate	148	32	3.93 ± 0.70	3.02 ± 1.28	3.63 ± 1.04	3.75 ± 0.98	2.07 ± 1.23
<i>Test İstatistiği</i>			<i>F</i> :0.050	<i>F</i> :1.638	<i>F</i> :1.221	<i>F</i> :0.303	<i>F</i> :0.864
<i>P Değeri</i>			<i>P</i> :0.951	<i>P</i> :0.195	<i>P</i> :0.296	<i>P</i> :0.739	<i>P</i> :0.422
<i>Institution</i>							
Public	409	88.5	3.91 ± 0.70	2.84 ± 1.32	3.73 ± 1.06	3.80 ± 0.98	2.22 ± 1.42
Private	53	11.5	4.01 ± 0.65	2.98 ± 1.29	3.82 ± 1.06	3.81 ± 1.01	2.00 ± 1.19
<i>Test İstatistiği</i>			<i>T</i> :-1.020	<i>T</i> :-0.737	<i>T</i> :-0.569	<i>T</i> :-0.031	<i>T</i> :1.104
<i>P Değeri</i>			<i>P</i> :0.308	<i>P</i> :0.462	<i>P</i> :0.570	<i>P</i> :0.975	<i>P</i> :0.270
<i>Unit</i>							
Inpatient units	266	57.6	3.92 ± 0.71	2.88 ± 1.33	3.80 ± 1.05	3.83 ± 0.98	2.23 ± 1.41
Outpatient units	196	42.4	3.92 ± 0.68	2.82 ± 1.30	3.67 ± 1.08	3.77 ± 0.99	2.15 ± 1.38
<i>Test İstatistiği</i>			<i>T</i> :0.066	<i>T</i> :0.487	<i>T</i> :1.329	<i>T</i> :0.673	<i>T</i> :0.616
<i>P Değeri</i>			<i>P</i> :0.947	<i>P</i> :0.626	<i>P</i> :0.185	<i>P</i> :0.501	<i>P</i> :0.538

$p > 0.05$ ; T: Independent Sample T Test; F: One-Way Analysis of Variance. CFNP: Challenges Faced by Nurses in Pandemics; ILW: Intention to Leave Work; TP: Task Performance; CP: Contextual Performance; CWP: Counterproductive Work Behavior

A significant and positive correlation was found between intention to leave work and the subscales of PC ( $r: 0.361$ ), MC ( $r: 0.425$ ), SC ( $r: 0.428$ ), and IMC ( $r: 0.424$ ) (Table 3).

### Mediation effect analysis results

In the mediation effect analyses; with the inclusion of TP in the model, it was determined that the direct ( $\beta: 0.402$ ) and indirect effect ( $\beta: 0.076$ ) of the difficulties experienced during the pandemic process on turnover intention was statistically significant (Fig. 1).

With the inclusion of CP in the model, the direct ( $\beta: 0.423$ ) and indirect ( $\beta: 0.054$ ) effects of the difficulties

experienced during the pandemic on turnover intention are statistically significant (Fig. 2). With the inclusion of CWP in the model, the direct ( $\beta: 0.348$ ) and indirect ( $\beta: 0.129$ ) effects of the difficulties experienced during the pandemic on turnover intention are statistically significant (Fig. 3).

Direct and indirect effects are statistically significant. The approach of Zhao et al. (2010) was taken into consideration based on the standardised  $\beta$  coefficient for the full or partial mediating role of the mediating variable. Significant  $\beta$  coefficients in direct and indirect effects and positive products of  $\beta$  coefficients of all three linear paths in the mediation model indicate that the mediating

**Table 2** Average scale scores of nurses (N=462)

Variables	Min-Max	$\bar{x} \pm ss$	Skewness	Kurtosis	Cronbach Alpha
CFNP	1–5	3.92±0.69	0.170	−0.987	0.944
PCD	1–5	4.25±0.60	−0.302	−0.806	0.817
MCD	1–5	4.07±0.72	−0.313	−0.870	0.896
SCD	1–5	3.65±0.93	−0.057	−0.843	0.867
IMCD	1–5	3.72±0.96	−0.263	−0.870	0.854
ILW	1–5	2.86±1.32	0.269	−0.167	0.929
Individual Performance	1–5	3.18±1.06	0.256	−0.412	0.919
TP	1–5	3.74±1.06	−0.403	−0.986	0.932
CP	1–5	3.80±0.98	−0.347	−0.886	0.917
CWP	1–5	2.19±1.40	0.215	−0.007	0.819

$\bar{x}$ : Mean, ss: Standard deviation; CFNP: Challenges Faced by Nurses in Pandemics; PCD: Physical Challenges Dimension; MCD: Mental Challenges Dimension; SCD: Social Challenges Dimension; IMCD: Institutional and Managerial Challenges Dimension; TP: Task Performance; CP: contextual performance; CWP: Counterproductive Work Behavior

variable shows a partial mediation role [42]. According to this approach, it was revealed that TP, CP and CWP showed partial mediation (Figs. 1, 2 and 3; Table 4).

## Discussion

The mediation effect helps to explain the effect of the independent variable on the dependent variable by another variable. It is a variable that helps to understand how and why the relationship between two variables occurs [43]. This study examined the mediator role of work performance in the effect of the challenges experienced by nurses during the pandemic on their intention to leave work. The study's model was based on JD-R theory, and all research hypotheses were supported. Despite the limited number of variables, the study examines more than direct relationships between variables.

Simple bivariate analyses may not be enough to unravel the mechanism. Determining how the hypothesized relationship is influenced by other variables can be achieved with the advanced statistical methods used in the study. This study may allow future research to examine the variables that predict nurses' turnover intentions in a single picture, identify their relationships and explore mediating effects.

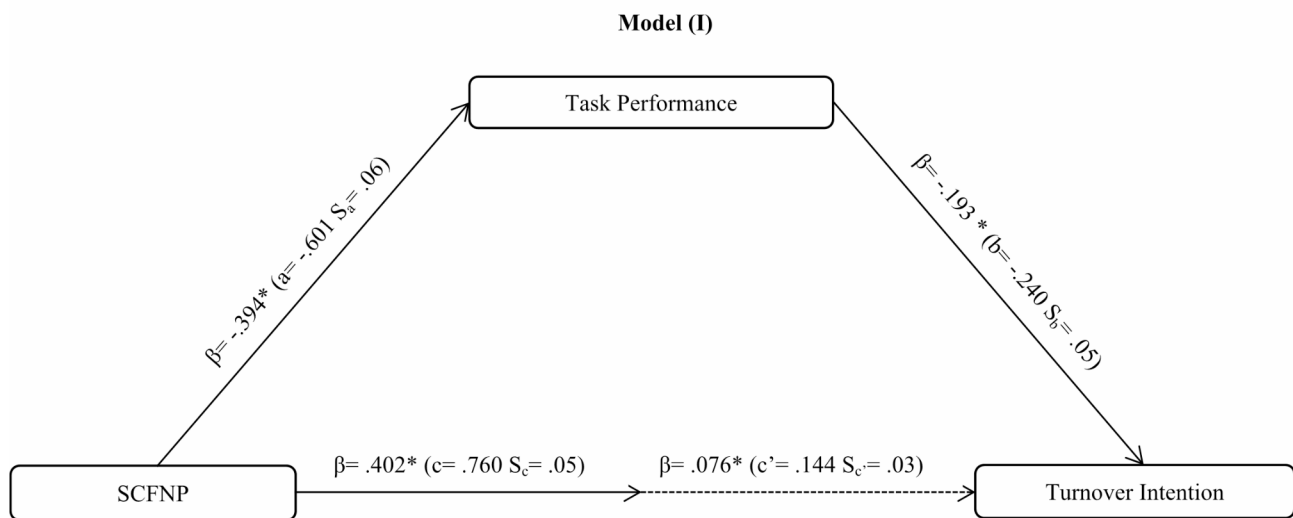
According to the results, nurses' TP was mediated by the effect of pandemic challenges on intention to leave work, supporting H1. TP showed a partial mediation role. The study's results revealed that pandemic challenges it increases the intention to leave the work, and this effect decreased in nurses with high TP. This finding may be related to nurses' result-oriented attitudes towards task responsibility, despite the various challenges faced by nurses during the pandemic. Varasteh et al. (2022) also reported that despite the presence of such challenges, nurses have taken their responsibilities to the profession and their colleagues seriously and therefore did not consider leaving their jobs [29].

This study also found that nurses' CP was mediated by the effect of pandemic challenges on intention to leave work, supporting H2. CP was found to play a partial mediating role. Considering the relationship of CP with factors such as team relations, peer support, and organizational commitment [20], nurses who exhibit high commitment to their profession, colleagues, or organization may not want to quit their jobs, despite the presence of challenges. Kadiresan et al. (2015) and Maden Eyiusta (2015) have found that the developed commitment among employees reduces their intention to leave work [44, 45]. In addition, previous studies have shown that includes dimensions such as interpersonal assistance and dedication to work, with CP associated with interaction

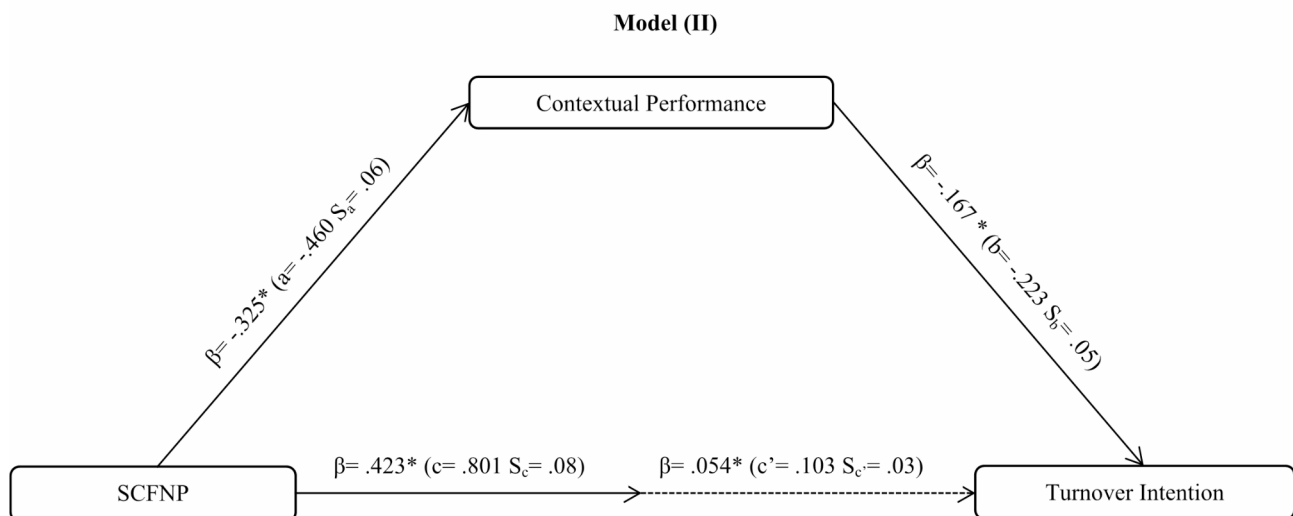
**Table 3** Pearson's correlation results (N=462)

Variables		CFNP	PCD	MCD	SCD	IMCD	IWP	Intention to leave work
CFNP	r	1	0.815**	0.883**	0.891**	0.859**	−0.422**	0.478**
	p		0.000	0.000	0.000	0.000	0.000	0.000
PCD	r		1	0.735**	0.597**	0.601**	−0.393**	0.361**
	p			0.000	0.000	0.000	0.000	0.000
MCD	r			1	0.754**	0.615**	−0.363**	0.425**
	p				0.000	0.000	0.000	0.000
SCD	r				1	0.670**	−0.361**	0.428**
	p					0.000	0.000	0.000
IMCD	r					1	−0.352**	0.424**
	p						0.000	0.000
IWP	r						1	−0.355**
	p							0.000
ILW	r							1
	p							

\*\*p<0.01; CFNP: Challenges Faced by Nurses in Pandemics; PCD: Physical Challenges Dimension; MCD: Mental Challenges Dimension; SCD: Social Challenges Dimension; IMCD: Institutional and Managerial Challenges Dimension; IWP: Individual Work Performance



**Fig. 1** The mediating role of task performance

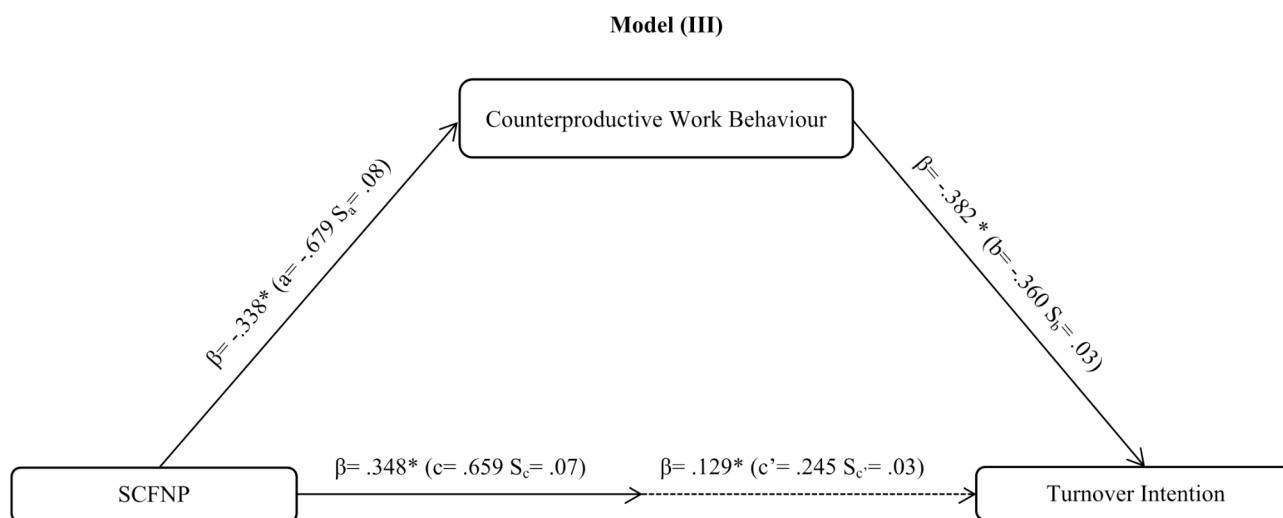


**Fig. 2** The mediating role of contextual performance

with employees, positive thoughts, positive emotions, and satisfying and motivating behaviors experienced towards one's own roles [46].

This study determined that nurses' CWP played a mediator role in the effect of pandemic challenges on intention to leave work, supporting H3. In this case, nurses' CWP may have reduced their intention to leave work because of their motivation to either consciously and systematically protest, or to sabotage and harm the organization or its members. A study by Saad Saleh Ali and Abdelwahab Ibrahim Elsayed (2022) reported that organizational cynicism is a factor that increases the incidence of CVB s among nurses [47]. However, one should not consider CWP s only within the context of physical harm. Other behaviors such as gossip, retaliation, condescension, absenteeism, lateness, early departure from

work, and unnecessarily long breaks have also been identified as CWP [48]. A study by Babaei Aghbolagh and Sattari Ardabili (2016) has found that nurses' participation in environmental gossip reduces work anxiety and stress [49]. In addition, it is important to distinguish between voluntary and involuntary absenteeism. Voluntary absenteeism refers to absenteeism under the control of the employee, while involuntary absenteeism refers to the opposite [50]. If a nurse is unable to go to work for reasons beyond her/his control, arrives late, or leaves early, she/he is expected to perform better to compensate for such situations and her/his intention to leave the job may decrease. However, in cases of arbitrary absence from work, she/he does not make an effort to perform and may go as far as leaving the job. In this context, the



**Fig. 3** The mediating role of counterproductive work behaviour

**Table 4** Mediation analysis test results ( $N=462$ )

Variables		TP	CP	CWP	P value
SCFNP → ILW	Direct	0.402	0.423	0.348	$P < 0.001$
	Indirect	0.076	0.054	0.129	$P < 0.001$
SCFNP → ILW	Total	0.478	0.457	0.477	$P < 0.001$

SCFNP: Scale for Challenges Faced by Nurses in Pandemics; ILW: Intention to Leave Work

correct evaluation of such behaviors may contribute to effective management.

Lastly, healthcare providers, especially nurses, need to be ready to intervene immediately when mass events occur that profoundly affect large populations, such as pandemics, wars, terrorism, natural disasters, etc [51, 52]. In addition, nurses face various challenges (physical, psychological, social, institutional and managerial) at all stages of the process due to the suddenly increasing patient load in the healthcare system [15, 53]. Regardless of the cause of the mass incident, it is vital to keep nurses in the system and to ensure that the nursing services provided to individuals are of high quality, safe and continuous. As Jabbur et al. (2021) stated in their study on the 2020 explosion in Beirut, what motivates nurses to stay at work and perform their nursing performance despite all the difficulties experienced may be related to their values such as professional sacrifice, self-sacrifice, and putting the lives and well-being of others before themselves [54]. The vital role nurses play in responding to mass incidents, especially epidemics, and their experiences may enable them to learn from the past when faced with similar events once again. The results of this study, like the results of other studies in the literature on the difficulties experienced by nurses in mass incidents, may guide health managers and policy makers in developing strategies to improve nurse performance [52–55].

### Limitations

While this study has provided some important evidence, it also has limitations. This study used an online survey, which may have limited accessibility for people with less ability or inclination to use the internet. Therefore, using a printed questionnaire may yield different results. The use of snowball sampling may have limited access to some samples. Bias associated with giving the desired response may have skewed the results of the study. Variables were measured using self-assessment scales. The resulting data are subjective and depend on the honesty and openness of the participants. Future studies are recommended to conduct performance evaluations with the participation of nursing managers and/or patients. In addition, future clinical observational studies may result in more objective findings. The relationship between difficulties experienced by nurses during the pandemic, turnover intention, and performance deserves further investigation because performance cannot fully explain this relationship. Future studies could examine more variables to uncover the mechanism of this relationship. Another limitation of this study was its cross-sectional design and future studies are recommended to use longitudinal designs. Longitudinal designs may be more effective in revealing the causal link between variables. Finally, this study is limited to questionnaires with specific response options. Quantitative and qualitative methods (mixed method) could be used to obtain more objective and detailed data on performance. Finally, the findings of this study are limited to nurses who volunteered to participate in the study; those who declined participation may have different perceptions.

## Conclusions and recommendations

This study determined that task-related, contextual, and CWP s play an important role in the effect of the challenges experienced by nurses during the pandemic on their intention to leave work. In addition, it was determined that CFNP, ILW, TP, CP and CWP had no significant effect on gender, marital status, age, total professional years, educational level, type of institution and unit of employment. This study's results concerning the effects of the challenges experienced by nurses during the pandemic, as well as knowledge of the factors that reduce these effects, may guide managers in better planning and improvements when faced with similar events in the future. Identifying and improving the causes that reduce nurse performance is key to increasing nurses' task and CP. Accordingly, in order to improve nurses' attitudes toward their work, organizations should create healthy and safe work environments, as well as provide supportive and fair working climates. In addition, this study found that CWP reduced nurses' intention to leave work. Further examinations of the relationships between CWP and different variables, using various and larger samples, are recommended. We also call on nurse researchers to study the effect of nurses' CWP on organizational outcomes.

## Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12912-024-02413-x>.

Supplementary Material 1

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## Author contributions

Study conception and design: TÖY, HKK Data collection: TÖY, HKK Data analysis and interpretation: TÖY, HKK Drafting of the article: TÖY, HKK Critical revision of the article: TÖY, HKK.

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## Data availability

No datasets were generated or analysed during the current study.

## Declarations

### Ethics approval and consent to participate

Ethical approval was obtained from the research ethics committee of Osmaniye Korkut Ata University in Turkey (date: 26/04/2022, no: E.65837), and permission to use the TIS, IWPO, and SCFNP was obtained from the original authors of the scales via email. The nurses participating in the study were informed and their consents were taken. Participants gave consent after being informed in the online questionnaire and voluntarily participated in the study and answered the questionnaire. The survey was limited to a single response for each user. All methods were performed in accordance with relevant guidelines and regulations.

## Consent for publication

Not applicable.

## Competing interests

The authors declare no competing interests.

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