

Journal of Interprofessional Care

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/ijic20

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To cite this article: Gökhan Yılmaz, Şafak Kıran & Hacer Kobya Bulut (2022): The mediating role of nurse–physician collaboration in the effect of organizational commitment on turnover intention, Journal of Interprofessional Care, DOI: 10.1080/13561820.2021.2004099

To link to this article: https://doi.org/10.1080/13561820.2021.2004099

Published online: 01 Jan 2022.

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JOURNAL OF INTERPROFESSIONAL CARE
https://doi.org/10.1080/13561820.2021.2004099

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The mediating role of nurse–physician collaboration in the effect of organizational commitment on turnover intention

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ABSTRACT

Despite extensive research having been carried out on nurse-physician collaboration, there remains a paucity of evidence on how collaboration interacts with organizational commitment and its effect on turnover intention. This study aims to determine the mediating role of nurse-physician collaboration on the effect of organizational commitment on turnover intention. We used a cross-sectional design based on voluntary paper surveys from the inpatient clinics of six public hospitals in the north of Turkey. Data including measures of nurse-physician collaboration, organizational commitment, and turnover intention were collected from a convenience sample of the nurses (n = 212) and physicians (n = 109). Pearson's correlation analysis was used to determine the relationships between variables, and the mediating effect was analyzed with PROCESS Macro "Model 4" for IBM SPSS. Statistical significance was specified at 95% confidence intervals and two-tailed *P* values of <0.05 for all tests. While most of the participants were nurses (66%), 34% were physicians. For both nurses and physicians, organizational commitment and nurse-physician collaboration negatively affected the turnover intention. However, the mediating role of nurse-physician collaboration was only significant for nurses (b = −0.025). The results demonstrate the importance of harmony, joint decision-making, and responsibility-sharing between nurses and physicians concerning dedication, engagement, and job satisfaction, especially for nurses.

ARTICLE HISTORY
Received 20 April 2021
Revised 22 September 2021
Accepted 4 November 2021

KEYWORDS
Organizational commitment; turnover intention; nurse; physician; nurse–physician collaboration

Introduction

Workforce shortages, of nurses in particular, have become a major issue for health systems all around the world (Heinen et al., 2013). The loss of a nurse harms the supply and continuity of patient care services, or may contribute to higher rates of adverse events, missed nursing care, and patient death (Labrague et al., 2020). Nurses are needed now more than ever due to the burden of disease and changes in the structure of the aging demographic, making it a key strategy for health institutions to retain nurses (Lo et al., 2018). On the other hand, physicians leaving their jobs or shifting to other institutions and sectors is a critical challenge that may also threaten the health-care system's ability to function (Tsai et al., 2016). In general, the loss of physicians can cause bad financial results, low patient satisfaction (Tsai et al., 2016), and a decrease in patients' trust in health institutions (Zhang & Feng, 2011).

Turnover intention is defined as the possibility of an employee quitting their job soon or an indication that they will leave (Galletta et al., 2016; Haydari et al., 2016; Jadoo et al., 2015; Richer et al., 2002; Tett & Meyer, 1993; Van Breukelen et al., 2004). According to researchers, turnover intention negatively affects the working environment, group dynamics, and group learning, resulting in critical medical errors in health institutions (Bae et al., 2010). They also claim that a dysfunctional turnover negatively affects both the quality of teamwork and patient's health (Galletta et al., 2016; Lankshear et al., 2005; Shields & Ward, 2001).

Previous research found that the work environment and inter-employee connections influence turnover intentions (Lo et al., 2018; Pathman et al., 2002; Richer et al., 2002). Workplaces, in reality, have a communal atmosphere in which employees are constantly interacting with one another, and this engagement has the potential to modify behaviors (D'Amour et al., 2005; Galletta et al., 2013). A healthy, fulfilling, and productive working culture depends on healthy relationships in this environment (Kramer & Schmalenberg, 2003). Organizational commitment, which is one of the determinants of turnover intention, is expected to rise in a healthy working environment with good relationships (Takase et al., 2008; Wagner, 2007).

According to organizational commitment theory, employees will have a set of expectations based on their job status, and their attitudes and behaviors will be a result of the gap between these expectations and what they have achieved. Employees who have fulfilled their primary expectations will be able to commit to their organization and achieve job satisfaction as a result (Chang, 1999; Hayes et al., 2006). Although job satisfaction is considered as an important determinant of turnover intention, it is stated that organizational commitment plays an important role in explaining turnover intention at least as much as job satisfaction (Hayes et al., 2006; Lu et al., 2002).

The literature emphasizes structural and cultural organizational factors as explaining why physicians and nurses leave their jobs. Various studies have linked job stress, a heavy

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workload, and job dissatisfaction to physician turnover (Abou Hashish, 2017; Heponiemi et al., 2019; Masselink et al., 2008). It has been reported that factors such as burnout, an unsupportive working environment (Heinen et al., 2013), low wages, long working hours, and a poor management style (Shields & Ward, 2001; Steinmetz et al., 2014) cause nurses to leave their jobs. Furthermore, researchers discovered that nurse and physician turnover is influenced by dissatisfaction with coworkers (Linzer et al., 2017; Pathman et al., 2002; Tsai et al., 2016) and poor employee interactions (Galletta et al., 2013). This highlights the importance of the nurse-physician collaboration.

In light of recent events, most research demonstrates that nurses and physicians have fundamentally divergent perspectives on interprofessional collaboration (Haddara & Lingard, 2013; Matziou et al., 2014; Muller-Juge et al., 2014; Tang et al., 2013). Despite the common goals between nurses and physicians, such as improving the quality of care and assisting patients, the traditional structure in which physicians dominate nurses still exists in some nations (Pakpour et al., 2019).

The issue of nurse-physician collaboration has received considerable critical attention in the literature. The concept is defined as an interpersonal and interprofessional relationship in which nurses and physicians share work-related goals and responsibilities (Petri, 2010; Sollami et al., 2015; Zhang et al., 2016). Effective collaboration is associated with improved quality of care, safety and improved patient outcomes, increased physician and nurse satisfaction, reduced work-related stress, and reduced care costs (Bowles et al., 2016), while low collaboration is associated with high job dissatisfaction (Zhou et al., 2019). On the other hand, it is stated that ineffective collaboration between nurses and physicians may cause a lack of autonomy and a higher probability of turnover (Nelson et al., 2008; Robinson et al., 2010; Thomson, 2007; Van Bogaert et al., 2013).

Despite extensive research having been carried out on nurse-physician collaboration, there remains a paucity of evidence on how collaboration interacts with organizational commitment and its effect on turnover intention. Rather, most research on nurse-physician collaboration has focused on nurses' or physicians' perspectives. A search of the recent literature revealed several empirical studies on the effect of nurse-physician collaboration on turnover intention (Galletta et al., 2016; Zhang et al., 2016), job satisfaction (Pakpour et al., 2019; Zhou et al., 2019), organizational culture, job stress, fatigue (Lee & Jang, 2020), and moral distress (Hou et al., 2021).

No published national study in Turkey has explored the nature of the explicit relationship that could exist among nurse-physician collaboration, organizational commitment and turnover intention. The specific objective of this study was thus to examine the effect of organizational commitment on turnover intention, and the mediating role of nurse-physician collaboration in six public hospitals in Trabzon, the northern province of Turkey. We also sought to gain a broader perspective on the relevance of the nurse-physician collaboration by involving both nurses and physicians in the study.

Method

Research design and sampling

This study used a cross-sectional design based on voluntary paper surveys. A convenience sample of registered nurses and physicians was recruited from the inpatient units of six public hospitals in Trabzon, Turkey. The statistics departments of the hospitals provided the total number of nurses and physicians. The department reported that there were 1828 nurses and physicians (1263 nurses and 565 physicians). However, due to the rotation schedule, reaching the entire population was not possible. Therefore, nurses and physicians were not surveyed if they were out of rotation. Using a sample size calculation engine, we determined a sample size of 318 for the 1828 population, with a 5% margin of error and a 95% confidence interval (Roasoft, n.d.). In 107 inpatient clinics, the questionnaires were administered to 526 nurses and 183 physicians. The response rate was 44% for nurses (231 questionnaires) and 70% for physicians (129 questionnaires). Thirty-nine questionnaires were discarded physicians (19 for nurses and 20 for physicians) as they had less than a year of experience. This was suggested by Robinson et al. (2010) who stated that more experience is needed to identify effective and ineffective interprofessional communication practices. Thus, questionnaires were analyzed for those participants with at least one year of experience (Zhang et al., 2016). Data analysis was performed using responses from 212 nurses and 109 physicians.

Instruments

The data for the study came from a four-part questionnaire. Five questions were asked in the first section to identify the socio-demographic characteristics of the participants, such as age, sex, marital status. The others sections consisted of three scales detailed in the following three sections.

We used the organizational commitment scale developed by Pearce et al. (2000). There are six items on the scale that represent attractive commitment. Akbolat et al. (2015) conducted the Turkish validity and reliability test of this scale. All the items administered had five possible response options, ranging from strongly agree (5) to strongly disagree (1) (Likert rating scale). The higher mean score indicate a more positive result thus more committed to their organization. Cronbach's alpha reliability coefficient was reported as 0.86 by Akbolat et al. (2015).

The turnover intention scale was developed by Mobley et al. (1979). It consists of three items. Karabay (2015) conducted the Turkish validity and reliability studies on this scale. The scale has one dimension, and the items are five-point Likert-type (ranging from "1 = Strongly Disagree" to "5 = Strongly Agree"). The higher mean score implies that they are more likely to leave. Cronbach's alpha reliability coefficient was found as 0.93 by Karabay (2015).

Hojat et al. (1999) developed the nurse-physician collaboration scale, and Yildirim et al. (2005) conducted the Turkish validity and reliability testing of this scale. The scale consists of fifteen items and four dimensions. The dimensions are "joint education and collaborative relationship," "care versus treatment," "nurse autonomy," and "physician authority." Items are

scored on a four-point Likert-type scale (ranging from "1 = Strongly Disagree" to "4 = Strongly Agree"). The higher mean score indicate a more positive attitude to collaboration. Two of the scale items (item 8: "Physicians are the dominant authority in all health matters" and item 10: "The primary duty of the nurse is to follow the physician's orders") were scored by reverse coding because they indicated negativity. Yildirim et al. (2005) found the Cronbach's alpha reliability coefficient of the scale to be 0.75.

Statistical analyses

Data were analyzed using IBM SPSS Version 22 and PROCESS Macro. Statistical significance was specified at 95% confidence intervals and two-tailed *P* values of <0.05 for all tests. Descriptive analyses summarized the average scores of demographic characteristics, organizational commitment, turnover intention, and nurse-physician collaboration. The internal consistency coefficients of measuring tools were computed using Cronbach's alpha. The correlations between organizational commitment, turnover intention, and nurse-physician collaboration were investigated using Pearson's correlation analysis. The mediating effect of nurse-physician collaboration was determined using the PROCESS Macro "Model 4" plugin developed by Hayes (2013) for IBM SPSS.

Data collection

The hospital inpatient service to be surveyed was preplanned by two researchers. Thus, deciding who would be responsible for each hospital. The nurses and physicians on rotation were given the questionnaires in a sealed envelope. We provided the participants time to complete the surveys after explaining the research's goal. In most cases, the questionnaires were completed within fifteen minutes. Then, on the same day, the completed questionnaires were gathered.

Ethical approach

Ethical approval was obtained from the Karadeniz Technical University Faculty of Medicine Ethics Committee (IRB: 24237859-209). The health institutions provided the rest of the necessary permissions for the study (No: 29330515-604.01.02).

Results

Participants

Most of the participants were nurses (66%), and 34% were physicians. We found that 93% of the nurses were female, the average age was 36.3 ±7.95 years, and 75.9% were married. The nurses' average experience was 14.7 ±8.16 years. Among the physicians participating in the study 62% were men. The average age of the physicians was 35.8 ±9.36 years, and 68% were married, and average experience was 9.8 ±9.52 years.

Table 1. Correlation analysis and descriptive statistics.

Groups	Variables	1	2	3	Mean	Sd	Cronbach's alpha
Nurses	Organizational commitment (1)	1			2.92	.87	.88
	Turnover Intention (2)	−.394 **	1		2.18	.98	.79
	Nurse–physician collaboration (3)	.172 *	−.195 **	1	3.43	.32	.78
Physicians	Organizational commitment (1)	1			2.86	.91	.88
	Turnover Intention (2)	−.316 **	1		1.99	.88	.75
	Nurse–physician collaboration (3)	.276 **	−.279 **	1	3.11	.35	.78

** Correlation is significant at the 0.01 level. * Correlation is significant at the 0.05 level.

Relationships among organizational commitment, nurse-physician collaboration, and turnover intention

The findings were evaluated separately for nurses and physicians. Table 1 shows the mean, standard deviation, internal consistency coefficients, and correlation analysis results for the variables.

Even though nurses (2.92) and physicians (2.86) had similar average organizational commitment scores, nurses' mean turnover intention (2.18) was slightly higher than physicians' (1.99). Nurses also had a higher average for nurse-physician collaboration (3.43) than physicians (3.11).

According to correlation analysis, organizational commitment had a negative (r = −0.394) relationship with turnover intention, a positive (r = 0.172) relationship with collaboration, and a negative (r = −0.195) relationship with collaboration and turnover intention for nurses. There was a negative (r = −0.316) relationship between organizational commitment and turnover intention among physicians, as well as a positive (r = 0.276) relationship between organizational commitment and collaboration and a negative (r = −0.279) relationship between collaboration and turnover intention. All of the correlations between variables were statistically significant.

Mediation analysis

Table 2 and Figure 1 summarizes the detailed results on findings of the mediating effect of nurse-physician collaboration.

The existence of a "0" value between the Lower-level confidence interval (LLCI) and Upper-level confidence interval (ULCI) measures determines the significance of the mediating effect. Table 2 demonstrates that organizational commitment (b = −0.417; $p < .001$) and collaboration (b = −0.3949; $p < .05$) both had a negative impact on nurse turnover intentions. Furthermore, the mediating effect of nurse-physician collaboration (b = −0.025, $p < .001$) was significant, even at a low

Table 2. The mediating role of nurse–physician collaboration on the effect of organizational commitment on turnover intention in nurses.

	Effect size	Standard error	t	p	LLCI	ULCI
Total effect	−0.442	0.0711	−6.216	0.000	−0.5824	−0.3019
Direct effect	−0.417	0.0717	−5.818	0.000	−0.5582	−0.2756
Indirect effect	−0.025	0.0168			**−0.0660**	**−0.0006**

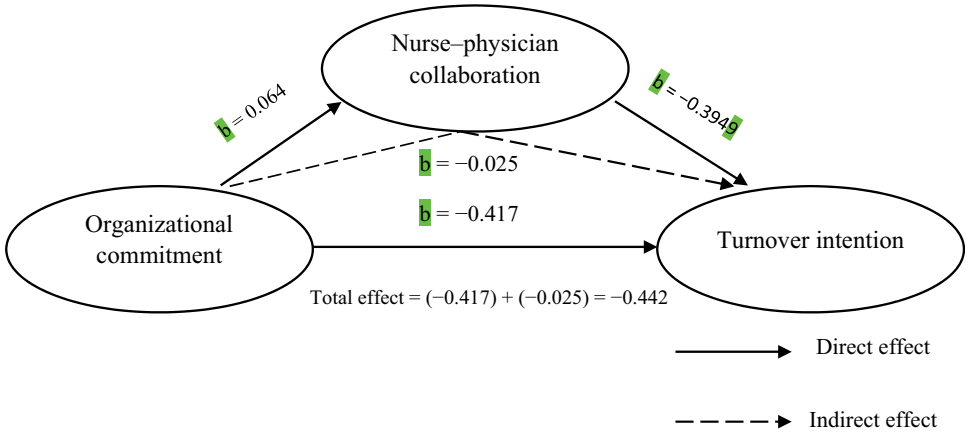

Figure 1. Total, direct, and indirect effects of nurse-physician collaboration in nurses.

Table 3. The mediating role of nurse–physician collaboration on the effect of organizational commitment on the turnover intention in physicians.

	Effect size	Standard error	t	p	LLCI	ULCI
Total effect	−0.307	0.0892	−3.444	0.0008	−0.4838	−0.1303
Direct effect	−0.251	0.0911	−2.759	0.0068	−0.4319	−0.0707
Indirect effect	−0.056	0.0441			**−0.1609**	**0.0072**

rate. In other words, if nurse-physician collaboration declines, the effects of organizational commitment on turnover intention rise.

Table 3 summarizes the detail of the analysis of the effect of organizational commitment on physician turnover intention, and the mediating effect of nurse-physician collaboration. Findings shows that organizational commitment (b = −0.2513; $p < .05$) and nurse-physician collaboration (b = −0.5211; $p < .05$) both had a negative impact on physician turnover intention. The findings also show that there exists a "0" value between the LLCI and ULCI values. Therefore, the mediating role of nurse-physician collaboration is not significant in physicians.

Discussion

As mentioned in the literature review, many factors can affect the turnover intentions of nurses and physicians. Collaboration between nurses and physicians is one of these factors. The purpose of this study is to see if nurse-physician collaboration has a role in mediating the effect of organizational commitment on turnover intention.

The findings of this study demonstrate that both nurses and physicians have a low level of organizational commitment and turnover intention (<3). This finding broadly supports the work of other studies in Turkey. According to these studies, the organizational commitment levels of nurses or physicians are generally low (Akbolat et al., 2016; Cihangiroğlu et al., 2015; Durukan et al., 2010; Kaya, 2010; Ocak et al., 2017; Sevinç & Şahin, 2012; Top, 2012). Another finding was that a significant negative correlation between organizational commitment and turnover intention. This result has not previously been described clearly in national literature empirically. Nevertheless, it is consistent with our previous findings, which revealed a strong negative relationship between organizational commitment and turnover intention (Abou Hashish, 2017; Chang et al., 2019; Van Breukelen et al., 2004). These relationships may partly be explained by the close link between turnover intention and organizational commitment. According to researchers, organizational commitment may be a better predictor because it is consistent throughout time, and its low level strengthens expectations of leaving the job (Duygulu & Abaan, 2007; Kaya, 2010).

Another important finding was that the attitudes of both nurses and physicians toward collaboration are high. But nurses have a slightly higher average than physicians (3.43 > 3.11). This finding was also reported by Sollami et al. (2015), Thomson (2007), and Sollami et al. (2015) shed light on the difference between nurses and physicians. They reported that when the nurse-physician collaboration scale measures the attitude, nurses exhibit a more positive attitude than physicians. Contrariwise, physicians perceive more collaboration than nurses when considering the "perception" of nurse-physician collaboration. This demonstrates that nurses and physicians have different perspectives on collaboration and acknowledge nurse-physician collaboration to varying degrees. This finding is consistent with Nelson et al. (2008) who reported that physicians had higher total mean scores on the perception of collaborative practice than nurses.

The most important clinically relevant finding was that the mediating effect of nurse-physician collaboration was statistically significant for nurses. Contrary to expectations, this study did not find a significant mediating effect of collaboration for physicians. A possible explanation for this might be that the difference between organizational or individual characteristics. This is an important issue for future research. As mentioned in the literature review, collaboration is one of the cornerstones of group dynamics and positive attitudes among employees that increase organizational commitment and reduce turnover (Galletta et al., 2013; Lo et al., 2018; Pathman et al., 2002; Richer et al., 2002; Takase et al., 2008; Wagner, 2007). Finding the significant mediating effect of collaboration for nurses may help us to gain a deeper understanding of the importance of nurse-physician collaboration in organizational factors.

Limitations

The major limitation of our study was the limited sample from only six public hospitals and 321 respondents from a single province in Turkey. This sample size was, however, considered large enough for the purposes of this evaluation. However, it cannot be known whether alternative opinions may have been missed by restricting our sample size in this way. Therefore, replication in other regions, private hospitals and inpatient settings is necessary. Second, a convenience sample was used, which can limit the generalization. Therefore, further studies are suggested to support the results. In addition, levels of collaboration, organizational commitment, and turnover intention were measured by self-assessment, meaning that the results could have been affected by subjectivity and response bias.

Conclusion

This study identified that nurses and physicians have a low level of organizational commitment. Furthermore, the commitment of nurses and physicians negatively affects turnover intention. These findings show that hospital executives should pay attention to the organizational and individual factors that negatively influence organizational commitment and turnover intentions.

The most obvious finding from this study was that nurse-physician collaboration adversely affected both nurses' and physicians' turnover intention. Unexpectedly, the mediation effect is only significant for nurses. This finding demonstrates the importance of harmony, joint decision-making, and responsibility-sharing between nurses and physicians concerning dedication, engagement, and job satisfaction for nurses. Nurses' involvement in clinical decisions can grow as a result of effective nurse-physician collaboration, which can result in both organizational gains and improved care quality.

There is a need for information to assist hospital administrators in ensuring the commitment and retention of nurses and physicians. The results of our study also show that nurse-physician collaboration is key to addressing organizational commitment and turnover for nursing management. Goal-oriented managerial and strategic interventions that improve communication and collaboration between nurses and physicians are necessary to increase engagement and reverse turnover intention.

Finally, many factors affect turnover intention. This study did not undertake to measure all the factors that could potentially influence turnover intention. Instead, this study aimed to examine the role of nurse-physician collaboration in the effect of organizational commitment on turnover intention. Building on this study, future studies should deepen the analysis by incorporating various personnel management data (e.g., absenteeism, illness, number of transfer requests) with nurse-physician collaboration.

Acknowledgments

In this study, Karadeniz Technical University Scientific Research Projects Commission provided transportation financing to the researchers. The results of the research were reported to the commission. The authors express their gratitude to the nurses and physicians who participated in the study.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

The author(s) reported there is no funding associated with the work featured in this article.

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