

Relationship Between Nurse-Nurse Collaboration and Patient Safety Culture

Hemşire-Hemşire İş Birliği ve Hasta Güvenliği Kültürü Arasındaki İlişki

Serpil Çelik Durmuş^{ORCID}, Mehmet Fatih Gezer^{ORCID}

SHYD 2022;9(3):363-370
doi:10.54304/SHYD.2022.13284

Cite as: Çelik Durmuş S, Gezer MF. Relationship between nurse-nurse collaboration and patient safety culture. Journal of Health and Nursing Management. 2022;9(3):363-370.

Abstract

Aim: This study aimed to evaluate the relationship between collaboration between nurses and patient safety culture.

Method: This cross-sectional study was conducted with 411 nurses working in a public hospital between February and May 2018. Data were collected with the descriptive characteristic form, the Nurse-Nurse Collaboration Scale, and the Patient Safety Culture Scale. Independent sample t-test, one-way ANOVA and correlation analysis were used to analyze the data.

Results: Collaboration among nurses and patient safety culture were found to be moderate. The correlation coefficient between collaboration and patient safety culture was 0.523, indicating a positive relationship.

Conclusion: The relationship between the collaboration between nurses and patient safety culture were found to be moderate. As the collaboration between nurses increases, the patient safety culture of nurses also increases. In this context, nurse managers should plan activities to increase collaboration among nurses and ensure that nurses receive more training to improve the patient safety culture.

Keywords: Collaboration, nurse-nurse collaboration, patient safety, patient safety culture, teamwork.

Öz

Amaç: Bu çalışma, hemşireler arası iş birliği ve hasta güvenliği kültürü arasındaki ilişkinin değerlendirilmesi amacıyla gerçekleştirilmiştir.

Yöntem: Kesitsel tipteki bu araştırma, bir kamu hastanesinde Şubat-Mayıs 2018 tarihleri arasında çalışan 411 hemşire ile yapılmıştır. Veriler; tanımlayıcı özellikler formu, "Hemşire-Hemşire İş Birliği Ölçeği ve Hasta Güvenliği Kültürü Ölçeği" ile toplanmıştır. Verilerin analizinde bağımsız gruplarda t testi, tek yönlü varyans analizi ve korelasyon analizi kullanılmıştır.

Bulgular: Hemşireler arası iş birliği ve hasta güvenliği kültürü arasındaki ilişkinin orta düzeyde olduğu bulunmuş ve iş birliği ile hasta güvenliği kültürü arasındaki korelasyon katsayısı 52 olup olumlu yönde anlamlı bir ilişki saptanmıştır.

Sonuç: Çalışmada, hemşireler arası iş birliğinin düşük olduğu, ancak hemşireler arası iş birliğinin hasta güvenliği kültürünü olumlu etkilediği belirlenmiştir. Hemşireler arası iş birliği arttıkça hemşirelerin hasta güvenliği kültürü de artacağından, yönetici hemşirelerin hasta güvenliği kültürünü geliştirmek için hemşireler arası iş birliğini artıracak etkinlikleri planlaması ve hemşirelerin daha fazla eğitim almalarını sağlaması gerekmektedir.

Anahtar Sözcükler: Hasta güvenliği, hasta güvenliği kültürü, iş birliği, hemşire-hemşire iş birliği, takım çalışması.

Received / Geliş:
14.11.2021

Accepted / Kabul:
12.10.2022

Published Online / Online Yayın:
30.12.2022

Corresponding author /
Sorumlu yazar:

Serpil Çelik Durmuş
Kırıkkale University, Faculty of Health
Sciences, Nursing Department,
Kırıkkale, Turkey
✉ serpilcelik2010@gmail.com
ORCID: 0000-0002-0932-3346

M. F. Gezer 0000-0001-9142-1991
Yozgat City Hospital,
Yozgat, Turkey

Introduction

Collaboration between healthcare providers across countries is increasingly seen as promising in improving the quality of care and patient outcomes with limited human and financial resources in healthcare systems (World Health Organisation [WHO], 2013). Through collaboration, care team members work together to advance patient care goals (Ma, Park & Shang, 2018). Nurses, who make up a large part of the health workforce in most countries, play a critical role in the care team (WHO, 2017).

Health service delivery in Türkiye is undergoing a significant transformation. It is shifting towards care-based solutions to achieve better care, better health and lower costs. In particular, it is aimed to shorten the hospital stay of patients with a quality care (Akdağ, 2011). Collaboration in care delivery, targeted by this transformation, is emphasized as a critical approach to providing optimal quality patient care. Collaboration has also been identified as an essential component of a patient safety culture (Sammer, Lykens, Singh, Mains & Lackan, 2010). The insufficient adoption of a patient safety culture by healthcare professionals may increase the number of medical errors (Kumbi, Hussen, Abate Lette & Morka, 2020). The inadequate reporting of medical errors or the failure to report them at all, is related to the individual decision-making of nurses, who spend more timewith patients (Duarte, Stipp, Cardoso & Büscher, 2018). One of the most important ways to improve safety culture and minimize medical errors is teamwork. A study found that the best way to increase patient safety culture is clear, effective communication and teamwork (Peñataro-Pintado et al., 2020). In a study using reports from 29,747 nurses, researchers found that the level of collaboration in a unit had a significant impact on nurse job satisfaction and turnover intention, and quality of care; and it was emphasized that this relationship is independent of nurses' employee characteristics and organizational characteristics (Ma, Shang & Bott, 2015).

While emphasis is placed on collaboration between other professions in health services, collaboration between nurses is ignored. In recent years, some studies have been conducted examining collaboration between nurses and its effect on patient outcomes. It is stated that the collaboration between nurses varies according to the patient care environment and that nurses who perceive collaboration more positively have higher job satisfaction (Kalisch, Lee & Rochman, 2010; Kalisch & Lee, 2010; Ma et al., 2018). Similarly, it has been observed that there is better collaboration among nurses working in the same unit and their intention to leave their positions is lower (Ma et al., 2015; Ma et al., 2018).

The role of nurses is to ensure patient safety in care and to prevent harm to the patient during the delivery of care. It is essential for nurses to adhere to patient safety principles, to strive to prevent care errors, and to achieve sustainable and safer health systems (Vaismoradi, Tella, Logan, Khakurel & Vizcaya-Moreno, 2020).

Ma et al. (2018) emphasize the importance of creating a collaborative environment to improve patient safety and outcomes in their study. It also underscores the concept that collaboration is a key feature of a quality work environment and an essential component of a patient safety culture (Ma et al., 2018; Sammer et al., 2010). Again, in the same study, evidence was obtained that patient falls can be prevented and patient safety is ensured by collaboration between nurses. Pressure ulcers and patient falls are significantly affected by the quality of nurse care. In this context, nurses have a primary role in the prevention and management of patient falls and pressure ulcers. High nurse collaboration has been associated with high quality of care (Kalisch et al., 2010; Ma et al., 2015; Ma et al., 2018). Hwang, Kim & Chin (2019) stated that teamwork, especially between caregiving nurses, is necessary to develop a culture of patient safety. As a spirit of collaboration develops between nurses, a culture of patient safety will develop in direct proportion.

In the light of these results, a review of the national and international literature showed that no studies have examined the relationship between patient safety culture and collaboration among nurses. This study, therefore, aimed to examine the relationship between patient safety culture and collaboration among nurses.

Method

Aim: In this study, it is aimed to evaluate the relationship between collaboration among nurses and patient safety culture.

Design and Method: A cross-sectional study was conducted to evaluate the patient safety culture and collaboration among nurses in a public hospital.

Research questions:

- What is the level of collaboration among nurses?
- What is the level of patient safety culture?
- What is the relationship among nurses collaboration and patient safety culture?

Sample: There are 750 nurses working in City Hospital. Convenience sample was used in the study, and the 411 nurses who participated as volunteers formed the sample. Inclusion criteria for the research: Volunteering to participate in the research, working as a nurse in the city hospital and working as a nurse for at least 6 months.

Data Collection Tool: In order to collect the data, the Descriptive Characteristic Form, Nurse-Nurse Collaboration Scale, and Patient Safety Culture Scale (PSCS) were used.

The Descriptive Characteristic Form, consists of 13 questions about nurses' socio-demographic characteristics, such as age, gender, marital status, educational degree and work unit.

Nurse-Nurse Collaboration Scale (NNCS): The scale was developed originally by Dougherty and Larson (2010) and the adaptation into the Turkish language was conducted by Durmuş and Yıldırım (2016). The Turkish version of the scale is comprised of five sub-dimensions, presenting 26 questions in total. The scale sub-dimensions; 'problem solving' (Cronbach's $\alpha = 0.75$), 'communication' (Cronbach's $\alpha = 0.71$), 'shared process' (Cronbach's $\alpha = 0.80$), 'coordination' (Cronbach's $\alpha = 0.78$), and 'professionalism' (Cronbach's $\alpha = 0.93$), which consist of 3, 5, 5, 3, and 10 questions, respectively. The participating nurses were asked to evaluate each question on a scale of 1 to 4 (1 'totally disagree', 2 'disagree', 3 'agree', 4 'totally agree'). The questions related to each sub-dimension were summed up accordingly, means were determined according to sub-dimensions and the collaboration level of nurses in each institution was defined by these calculations. The break point of the scale was determined as 2.5; collaboration level increased approaching '4' and decreased approaching '1' (Durmuş, Ekici & Yıldırım, 2018). The Cronbach alpha value for this study was determined to be 0.95.

The PSCS was developed by Türkmen, Baykal, Seren and Altuntaş (2011). The validity and reliability study of the nursing group consisted of 51 items divided into five sub-dimensions: management and leadership, employee behavior, unexpected incidents and error reporting, employee training, and maintenance environment. The PSCS is a four-point Likert type measurement tool. In the interpretation of scale scores, it shows the culture of patient safety that gradually increases towards four and a culture of patient safety that is gradually decreasing towards one. The Cronbach alpha value for this study was determined to be 0.97.

Data Collection: The research was conducted from February to May 2018. The researchers distributed the questionnaires to the nurses after making the necessary explanations about the questionnaire.

Data Analysis: Data obtained from the nurses participating in the study were transferred to the computing environment and evaluated using the Statistical Package for the Social Sciences (SPSS) 15.0 program. The averages and standard deviations were examined when the frequency and percentages of the nurses for their socio-demographic characteristics. Independent sample t-test, one way ANOVA and correlation analysis were used to analyze the data.

Ethical Considerations: Permission was obtained from the hospital administration and the nursing services manager to perform the research. In addition, the ethical permission of the research was obtained from a university Non-Interventional Ethics Committee numbered 2018-KAEK-189_2018.01.25_09. The study was based on volunteering.

Limitations: This study is limited to a public hospital. The data obtained is limited to the answers of the nurses.

Results

Table 1. Socio-demographic characteristic of nurses (N:411)

Variables		n	%
Gender	Female	330	80.3
	Male	81	19.7
Education	Health vocational high school	60	14.6
	Vocational school	99	24.1
	Graduate	228	55.5
	Postgraduate	24	5.8
Working unit	Internal units	129	31.4
	Surgical units	57	13.9
	ICU-operating	126	30.7
	Emergency	99	24.1
Position	Staff nurse	363	88.3
	Charge nurse	48	11.7
Duration in the profession	1–5 year(s)	213	51.8
	6–10 years	60	20.4
	11–15 years	54	13.1
	16+ years	60	14.6
Weekly working hours	40–44 hours	210	51.1
	45–49 hours	111	27
	50+ hours	90	21.9
Number of patients	0–5	66	16.1
	6–11	69	16.8
	12–17	63	15.3
	18–23	96	23.4
	24–29	117	28.5
Professional satisfaction	Not satisfied at all	66	16.1
	Not satisfied	102	24.8
	Undecided	84	20.4
	Satisfied	159	38.7
Age	29.29 ± 7.76 (min.=19, max.= 55)		

The age average of the participants was 29.29 ± 7.76; 80.3% were female, 55.5% had a bachelor's degree, 31.4% worked in the medicine unit and 88.3% worked as staff nurses. The professional experience period 51.8% was 1-5 years, the weekly working hours of 51.1% were 40-44, 28.5% were nursing 24-29 patients weekly, and 38.7% were satisfied with their profession (Table 1).

Table 2. Average scores from the sub-dimensions of Collaboration Scale (N:411)

Sub-dimensions of collaboration scale	Mean* ± SD	Min.	Max.
Problem-solving	2.63 ± 0.77	1	4
Communication	2.68 ± 0.61	1	4
Process sharing	2.80 ± 0.63	1	4
Coordination	2.90 ± 0.70	1	4
Professionalism	2.88 ± 0.64	1	4
General Collaboration	2.80 ± 0.57	1	4

*The break point of the scale was determined as 2.5; collaboration level increased approaching '4' and decreased approaching '1'. In this study, above 2.5 average was evaluated as good level.

Table 2 shows the nurses' average scores from the sub-dimensions of collaboration. The average score for the problem-solving dimension was 2.63 ± 0.77, the communication dimension was 2.68 ± 0.61, the process sharing dimension was

2.80 ± 0.63, the coordination dimension was 2.90 ± 0.70, and the professionalism dimension was 2.88 ± 0.64. The average total score for the collaboration scale was 2.80 ± 0.57.

Table 3. Average scores from the sub-dimensions of Patient Safety Culture Scale (N:411)

Sub-dimension of Patient Safety Culture Scale	Mean* ± SD	Min.	Max.
Management and leadership	2.79 ± 0.54	1	4
Employee behavior	2.74 ± 0.54	1	4
Unexpected incident and error reporting	2.80 ± 0.59	1	4
Education	2.84 ± 0.61	1	4
Maintenance and technology	2.98 ± 0.53	1	4
General Collaboration	2.80 ± 0.57	1	4

*In the interpretation of scale scores, it shows the culture of patient safety that gradually increases towards four and a culture of patient safety that is gradually decreasing towards one.

Table 3 gives the nurses' averagescoresfor the sub-dimensions of the PSCS. The average score for management and leadership was 2.79 ± 0.54, employee behavior was 2.74 ± 0.54, unexpected incident and error reporting was 2.80 ± 0.59, education was 2.84 ± 0.61, andmaintenance and technology was 2.98 ± 0.53.

Table 4. Relationship between patient safety culture and collaboration among nurses (N:411)

Sub-dimensions	Management and leadership	Employee	Error	Education	Nursing	Overall PSC
Problem-solving	0.41*	0.38*	0.32*	0.38*	0.37*	0.44*
Coordination	0.35*	0.39*	0.26*	0.36*	0.35*	0.40*
Communication	0.34*	0.36*	0.21	0.35*	0.33*	0.38*
Process sharing	0.37*	0.43*	0.31*	0.41*	0.45*	0.46*
Professionalism	0.47*	0.51*	0.37*	0.45*	0.45*	0.53*
Overall collaboration (NNC)	0.46*	0.50*	0.35*	0.46*	0.46*	0.52*

NNC: Nurse-Nurse Collaboration, PSC: Patient Safety Culture.

*Pearson correlation, p<0.001

Table 4 shows the results of the correlation analysis conducted to determine whether there is a relationship between patient safety culture and collaboration among the nurses. The results indicate that there is a positive, significant, medium strength relationship between patient safety culture and collaboration among nurses ($r = .52$). There was determined to be a positive, significant, weak relationship between the sub-dimensions of patient safety culture and collaboration among nurses ($r = .21-.45$); however, the professionalism sub-dimension of collaboration among nurses had a positive, significant, medium strength relationship with general patient safety culture and employee sub-dimension of patient safety culture.

Discussion

Nurses' ability to collaborate is considered a determinant of their skills (Morley & Cashell, 2017). Increasing the level and quality of collaboration among nurses would thus improve patient safety (Apker, Propp, Ford & Hofmeister, 2006; Ma et al., 2018). In this study, the level of collaboration among nurses is, therefore, slightly above average. These findings emphasize the importance of creating a collaborative environment to improve a culture of patient safety.

In this study, the highest average score obtained on the Nurse-Nurse Collaboration Scale was in the professionalism sub-dimension, and the lowest score average was in the problem-solving sub-dimension (Table 2). It has similar results with Durmus, Ekici & Yıldırım (2018)' study. The level of professionalism of nurses in Turkey increases with undergraduate education (Yılmaz, Gölbaşı, Türk & Hançer, 2019) and high levels of professionalism and vocational awareness is crucial in terms of collaboration between nurses (Çelik & Hisar, 2012). Furthermore, nurses must use problem-solving skills to increase nursing quality. Nurses are expected to solve various complex problems related to team work and management. For this reason, the complete and correct information to be obtained in the problem solving process increases the quality of care and improves the professional skills of nurses (Daştan & Hintistan, 2018).

This study found that nurses engage in a positive patient safety culture. The nursing and technology sub-dimensions of PSCS include items about the institution's physical structure and its equipment, devices, technologies, and nursing services (Türkmen et al., 2011). In the present study, nurses scored high in nursing and technology. The city hospital where the study was conducted is the first city hospital in Turkey. In Turkey within the scope of the Health Reform has been built city hospitals in the many provincial. The city hospital was equipped with the latest technology and focused toward the aims of patient safety and patient satisfaction (Uğurluoğlu, Gökkaya & Erdem, 2019). This study's setting in this hospital is considered one reason for the high average score in the nursing and technology sub-dimension.

The employee behavior sub-dimension includes subjects such as complying with working rules, acknowledging quality criteria and institutional objectives, harmonious team work, cooperation with colleagues for the benefit of patients, proposing suggestions for improving patient safety, informing patients and their relatives when an error occurs, and preventing the repetition of errors (Türkmen et al., 2011). In this study, the nurses' lowest average score was on the employee behavior sub-scale. In contrast to these results, the nurses participating in Rızalar, Buyuk, Sahin, As and Uzunkaya study (2016)'s scored the highest on the employee behavior sub-dimension. In a study by Wang et al., (2014) conducted with 463 nurses in China, the nurses' perceptions of patient safety culture was not at the high level. The nurses' low score on the employee behavior sub-dimension indicates that they could not adequately contribute to the culture of patient safety. It is considered that the nurses' patient safety culture was insufficient because the hospital at which the study was conducted had only recently opened, and 52% of the employees had five years of professional experience or less. In this study, it was determined that there is a positive and significant relationship between patient safety culture and collaboration between nurses. According to Lee, Phan, Dorman, Weaver & Pronovost (2016), teamwork and collaboration positively affect patient safety. In the same study, strong teamwork was found to increase nurses' responsibility for patient safety, especially during shift changes. Professionalism is important for all healthcare professionals and is required to improve patient safety culture (McKenzie et al., 2019). Professional behavior requires voluntary reporting of adverse events in nursing. Thus, strong teamwork and professionalism create a culture of reporting negative incidents, which positively affects patient safety culture (Lee, Phan, Dorman, Weaver & Pronovost, 2016). Yuce et al., (2020) stated that collaboration among hospital personnel improves hospital safety culture and that collaboration among nurses in particular improves patient safety and quality of care. According to Ma et al. (2018); It was emphasized that as a strategy to improve patient safety, it is necessary to support initiatives to improve cooperation between nurses.

Conclusion and Recommendations

According to the results of this study, it was determined that the collaboration between nurses was low, while the collaboration between nurses had a positive effect on the patient safety culture. Creating an environment that supports interdisciplinary collaboration can significantly benefit nurses. In a collaborative team, nurses share responsibility for decision making and problem solving to formulate and carry out care plans for patients. Nurses should have the authority to share information about patients and participate in decisions in care while providing patient care in collaboration. This, in turn, will improve the work of other healthcare providers and ultimately lead to better patient outcomes. Hospital managers should consider investing in developing collaboration, such as holding workshops to promote mutual understanding of nurses' roles and values, as well as communication skills. Manager nurses should care about the creation of collaborative working environments and should give importance to improvement and development activities by determining the factors affecting them.

Ethics Committee Approval: Bozok University Clinical Research Ethics Committee approval was obtained (Date: 25.01.2018 - Number: 2018-KAEK-189_2018.01.25_09).

Conflict of Interest: Not declared.

Funding: None.

Informed Consent: Informed consent of the participants were obtained.

Etik Kurul Onayı: Bozok Üniversitesi Klinik Araştırmalar Etik Kurulu tarafından onaylanmıştır (Tarih: 25.01.2018 - Karar No: 2018-KAEK-189_2018.01.25_09).

Çıkar Çatışması: Bildirilmemiştir.

Finansal Destek: Yoktur.

Katılımcı Onamı: Katılımcıların bilgilendirilmiş onamları alınmıştır.

References

- Akdağ, R. (2011). Turkey health transformation program: Evaluation report (2003-2010). T.C. Sağlık Bakanlığı Yayın No: 839. <https://www.sesric.org/imgs/news/image/729-doc-Turkey-Health-Transformation-Programme.pdf> (Retrieved: 17 January 2022).
- Apker, J., Propp, K. M., Ford, W. S. Z. & Hofmeister, N. (2006). Collaboration, credibility, compassion and coordination: Professional nurse communication skill sets in health care interactions. *Journal of Professional Nursing*, 22(3), 180-189. <https://doi.org/10.1016/j.profnurs.2006.03.002>
- Çelik, S. & Hisar, F. (2012). The influence of the professionalism behavior of nurses working in health institutions on job satisfaction. *International Journal of Nursing Practice*, 18(2), 180-187. <https://doi.org/10.1111/j.1440-172X.2012.02019.x>
- Daştan, B. & Hintistan, S. (2018). Dahiliye kliniklerinde çalışan hemşirelerin kanıta dayalı hemşireliğe yönelik tutumlarının belirlenmesi: Kırşal bölge örneği. *Ordu Üniversitesi Hemşirelik Çalışmaları Dergisi*, 1(1), 1-9.
- Dougherty, B. M. & Larson, E. L. (2005). A review of instruments measuring nurse-physician collaboration. *Journal of Nursing Administration*, 35(5), 244-253. <https://doi.org/10.1097/00005110-200505000-00008>.
- Duarte, S. D. C. M., Stipp, M. A. C., Cardoso, M. M. V. N. & Büscher, A. (2018). Patient safety: Understanding human error in intensive nursing care. *Revista da Escola de Enfermagem da USP*, 52. <https://doi.org/10.1590/S1980-220X2017042203406>
- Durmuş, S. Ç. & Yıldırım, A. (2016). Adaptation to Turkish of nurse-nurse collaboration scale. *Journal of Human Sciences*, 13(2), 3521-3528. <https://doi.org/10.14687/jhs.v13i2.3990>
- Durmuş, S. Ç., Ekici, D. & Yıldırım, A. (2018). The level of collaboration amongst nurses in Turkey. *International Nursing Review*, 65(3), 450-458. <https://doi.org/10.1111/inr.12440>
- Hwang, J. I., Kim, S. W. & Chin, H. J. (2019). Patient participation in patient safety and its relationships with nurses' patient-centered care competency, teamwork, and safety climate. *Asian Nursing Research*, 13(2), 130-136. <https://doi.org/10.1016/j.anr.2019.03.001>
- Kalisch, B. J. & Lee, K. H. (2010). The impact of teamwork on missed nursing care. *Nursing Outlook*, 58(5), 233-241. <https://doi.org/10.1016/j.outlook.2010.06.004>
- Kalisch, B. J., Lee, H. & Rochman, M. (2010). Nursing staff teamwork and job satisfaction. *Journal of Nursing Management*, 18(8), 938-947. <https://doi.org/10.1111/j.1365-2834.2010.01153.x>
- Kumbi, M., Hussen, A., Abate Lette, S. N. & Morka, G. (2020). Patient safety culture and associated factors among health care providers in bale zone hospitals, southeast ethiopia: An institutional based cross-sectional study. *Drug, Healthcare and Patient Safety*, 12, 1-14. <https://doi.org/10.2147/DHPS.S198146>
- Lee, S. H., Phan, P. H., Dorman, T., Weaver, S. J. & Pronovost, P. J. (2016). Handoffs, safety culture, and practices: Evidence from the hospital survey on patient safety culture. *BMC Health Services Research*, 16(1), 1-8. <https://doi.org/10.1186/s12913-016-1502-7>
- Ma, C., Shang, J. & Bott, M. J. (2015). Linking unit collaboration and nursing leadership to nurse outcomes and quality of care. *Journal of Nursing Administration*, 45(9), 435-442. <https://doi.org/10.1097/NNA.0000000000000229>
- Ma, C., Park, S. H. & Shang, J. (2018). Inter-and intra-disciplinary collaboration and patient safety outcomes in US acute care hospital units: A cross-sectional study. *International Journal of Nursing Studies*, 85, 1-6. <https://doi.org/10.1016/j.ijnurstu.2018.05.001>
- McKenzie, L., Shaw, L., Jordan, J. E., Alexander, M., O'Brien, M., Singer, S. J. & Manias, E. (2019). Factors influencing the implementation of a hospital-wide intervention to promote professionalism and build a safety culture: A qualitative study. *The Joint Commission Journal on Quality and Patient Safety*, 45(10), 694-705.
- Morley, L. & Cashell, A. (2017). Collaboration in health care. *Journal of Medical Imaging and Radiation Sciences*, 48(2), 207-216. <https://doi.org/10.1016/j.jmir.2017.02.071>
- Peñataro-Pintado, E., Rodríguez, E., Castillo, J., Martín-Ferrerres, M. L., De Juan, M. Á. & Díaz Agea, J. L. (2020). Perioperative nurses' experiences in relation to surgical patient safety: A qualitative study. *Nursing Inquiry*, e12390. <https://doi.org/10.1111/nin.12390>
- Rızalar, S., Buyuk, E. T., Sahin, R., As, T. & Uzunkaya, G. (2016). Culture of patient safety and affecting factors. *Dokuz Eylül University Faculty of Nursing Electronic Journal*, 9, 9-15.
- Sammer, C. E., Lykens, K., Singh, K. P., Mains, D. A. & Lackan, N. A. (2010). What is patient safety culture? A review of the literature. *Journal of Nursing Scholarship*, 42(2), 156-165. <https://doi.org/10.1111/j.1547-5069.2009.01330.x>

Türkmen, E., Baykal, Ü., Seren, Ş. & Altuntaş, S. (2011). Development of patient safety culture scale. *Anadolu Journal of Nursing and Health Sciences*, 14(4), 38-46.

Uğurluoğlu, D., Gökkaya, D. & Erdem, R. (2019). Employee satisfaction research at city hospital. *Journal of Economic, Administrative and Political Studies*, 4(9), 101-118. <https://doi.org/10.25204/iktisad.511419>

Vaismoradi, M., Tella, S., A Logan, P., Khakurel, J. & Vizcaya-Moreno, F. (2020). Nurses' adherence to patient safety principles: A systematic review. *International Journal of Environmental Research and Public Health*, 17(6), 2028. <https://doi.org/10.3390/ijerph17062028>

Wang, X., Liu, K. E., You, L. M., Xiang, J. G., Hu, H. G., Zhang, L. F., ... & Zhu, X. W. (2014). The relationship between patient safety culture and adverse events: A questionnaire survey. *International Journal of Nursing Studies*, 51(8), 1114-1122. <https://doi.org/10.1016/j.ijnurstu.2013.12.007>

World Health Organisation (WHO) (2013). Interprofessional collaborative practice in primary health care: nursing and midwifery perspectives six case studies. <http://www.who.int/hrh/resources/observer>. (Accessed 21 July 2017)

World Health Organisation (WHO) (2017). *WHO Global health workforce statistics (2017)*. <http://www.who.int/hrh/statistics/hwfstats/en/> (Accessed 4 September 2017).

Yılmaz, M., Gölbashi, Z., Türk, K. E. & Hançer, A. T. (2019). Views of nurses, physicians and patients on nursing image. *Journal of Cumhuriyet University Health Sciences Institute*, 4(2), 38-44.

Yuce, T. K., Yang, A. D., Johnson, J. K., Odell, D. D., Love, R., Kreutzer, L., ... & Bilimoria, K. Y. (2020). Association between implementing comprehensive learning collaborative strategies in a statewide collaborative and changes in hospital safety culture. *JAMA Surgery*, 155(10), 934-940. <https://doi.org/10.1001/jamasurg.2020.2842>