

THE EFFECT OF TRANSFORMATIONAL LEADERSHIP BEHAVIOUR ON ORGANIZATIONAL COMMITMENT IN HEALTH INSTITUTIONS: A META-ANALYSIS

Cuma FİDAN *

ABSTRACT

The purpose of the study is to examine the effect of transformational leadership behavior on organizational commitment in health institutions. The study was conducted using the meta-analysis method. The Council of Higher Education Thesis Center, TÜBİTAK ULAKBİM, Google Scholar and DergiPark databases were searched using the keywords "dönüşümcü liderlik/transformational leadership" and "örgütsel bağlılık/organizational commitment". The literature was reviewed between October 1, 2023 and September 5, 2024. Inclusion criteria: (1) the effect of transformational leadership behavior of health managers on organizational commitment was investigated, (2) it was conducted in Turkish health institutions, (3) it was written in Turkish and/or English, (4) it used quantitative research methods, (5) it has full-text access, and (6) it has the necessary statistics to calculate effect size. The correlation effect size method was used to calculate the effect size, and the random effect model was used to calculate the common effect size ($Q: 289.03$; $df: 13$; $p < 0.001$; $I^2 > 0.75$; $T > 0.19$). Fourteen out of 609 studies were included in the meta-analysis. The studies were published between 2008 and 2023, in the publication types of thesis, conference paper, and article, in Turkish and English publication languages, and with a cross-sectional study design. The effect of transformational leadership behavior on organizational commitment was examined in a sample of a total of 7.353 health personnel. Egger's regression method did not test for publication bias ($t: 0.92$; $p: 0.19$). The results of the meta-analysis show that transformational leadership behavior has a high-level positive effect on organizational commitment in health institutions ($M: 0.41$; 95% CI: 0.31-0.49; $p < 0.001$). This result obtained from the study should be supported by studies that will investigate the effect of transformational leadership behavior on organizational commitment according to the types of health personnel.

Keywords: Health institutions, health personnel, meta-analysis, organizational commitment, transformational leadership.

ARTICLE INFO

*Assist. Prof., Muş Alparslan University, Department of Health Management, cmfdn91@gmail.com

 <https://orcid.org/0000-0002-8581-5940>

Received: 23.12.2024

Accepted: 14.10.2025

Cite This Paper:

Fidan, C. (2025). The effect of transformational leadership behaviour on organizational commitment in health institutions: a meta-analysis. Hacettepe Journal of Health Administration, 28(4), 579-592. <https://doi.org/10.61859/hacettepesid.1605757>

SAĞLIK KURUMLARINDA DÖNÜŞÜMCÜ LİDERLİK DAVRANIŞININ ÖRGÜTSEL BAĞLILIĞA ETKİSİ: BİR META ANALİZ ÇALIŞMASI

Cuma FİDAN *

ÖZ

Çalışmanın amacı, sağlık kurumlarında dönüşümcü liderlik davranışının örgütsel bağlılığa etkisini araştırmaktır. Çalışma, meta analiz yöntemi kapsamında gerçekleştirilmiştir. The Council of Higher Education Thesis Center, TÜBİTAK ULAKBİM, Google Scholar ve DergiPark veri tabanları aracılığı ile “dönüşümcü liderlik/transformational leadership” ve “örgütsel bağlılık/organizational commitment” anahtar kelimeleri kullanılarak tarama yapılmıştır. Literatür, 1 Ekim 2023 ile 5 Eylül 2024 tarihleri arasında taranmıştır. Dâhil edilme kriterleri: (1) sağlık yöneticilerinin dönüşümcü liderlik davranışının örgütsel bağlılığa etkisinin araştırılmış olması, (2) Türkiye sağlık kurumlarında gerçekleştirilmiş olması, (3) Türkçe ve/veya İngilizce yayın dilinde yazılmış olması, (4) nicel araştırma yöntemlerinin kullanılmış olması, (5) tam metin erişiminin olması ve (6) etki büyüklüğünü hesaplamak için gerekli istatistiklerin olması. Etki büyüklüğünün hesaplanmasında korelasyon etki büyüklüğü yöntemi, ortak etki büyüklüğünün hesaplanmasında ise rastgele etki modeli (Q : 289.03; sd : 13; $p < 0.001$; $I^2 > 0.75$; $T > 0.19$) kullanılmıştır. Meta analize 609 çalışmadan 14’ü dâhil edilmiştir. Çalışmalar; 2008 ile 2023 yılları arasında, tez, bildiri ve makale yayın türlerinde, Türkçe ve İngilizce yayın dillerinde ve kesitsel çalışma tasarımıyla yayımlanmıştır. Toplam 7.353 sağlık personeli üzerinde dönüşümcü liderlik davranışının örgütsel bağlılığa etkisi araştırılmıştır. Egger’ın regresyon yöntemine göre ise yayın yanlılığı test edilmemiştir (t : 0.92; p : 0.19). Meta analiz sonuçları, sağlık kurumlarında dönüşümcü liderlik davranışının örgütsel bağlılığı yüksek düzeyde pozitif etkilediğini göstermektedir (M : 0.41; %95 GA: 0.31-0.49; $p < 0.001$). Çalışmadan elde edilen bu sonucun sağlık personelinin türlerine göre dönüşümcü liderlik davranışının örgütsel bağlılığa etkisini araştırarak çalışmalarla desteklenmesi gerekmektedir..

Anahtar Kelimeler: Dönüşümcü liderlik, meta analiz, örgütsel bağlılık, sağlık kurumları, sağlık personeli.

MAKALE HAKKINDA

*Dr. Öğr. Üyesi, Muş Alparslan Üniversitesi Sağlık Bilimleri Fakültesi Sağlık Yönetimi Bölümü, cmfdn91@gmail.com

 <https://orcid.org/0000-0002-8581-5940>

Gönderim Tarihi: 23.12.2024

Kabul Tarihi: 14.10.2025

Atıfta Bulunmak İçin:

Fidan, C. (2025). Sağlık kurumlarında dönüşümcü liderlik davranışının örgütsel bağlılığa etkisi: Bir meta analiz çalışması. Hacettepe Sağlık İdaresi Dergisi, 28(4), 579-592. <https://doi.org/10.61859/hacettepesid.1605757>

I. INTRODUCTION

Leadership is recognized globally as a key component in improving the quality of care, performance and outcomes in healthcare systems (Ajanaku et al., 2022). These improvements in healthcare delivery can be achieved by choosing an effective leadership style (Wu et al., 2024). Transformational leadership has been in the literature as an effective leadership style that can have application in health institutions (Restivo et al., 2022). Transformational leadership focuses on the development of employees and their knowledge and skills (Al-Dossary, 2022). Transformational leaders influence employees through their admiration and respect for the leader, identify employees' diverse needs, skills, and aspirations, and allow employees to express themselves without fear of making mistakes (Curado and Santos, 2022).

Transformational leadership empowers leaders to inspire employees to higher levels of performance by helping them align employee values with organizational values (Alanazi et al., 2023). This situation causes transformational leadership behavior in health institutions to increase the organizational commitment of health personnel (Haoyan et al., 2023). The positive effect of transformational leadership on organizational commitment can contribute to increased productivity, quality of healthcare services, and patient safety in health institutions (Hussain and Khayat, 2021). Therefore, the purpose of this study is to examine the effect of transformational leadership behavior on organizational commitment in health institutions.

1.1. Conceptual Framework

1.1.1. Transformational Leadership

Transformational leadership refers to the ability of leaders to inspire and motivate their employees beyond their own self-interest (Curado and Santos, 2022). Transformational leaders focus on developing employees' talents and skills (Mohammed and Al-Abrow 2024). Transformational leadership consists of four key components: idealized influence (role modeling and trust), inspirational motivation (creating and sharing a vision), intellectual stimulation (innovative thinking and problem solving), and individualized attention (coaching) (Ystaas et al., 2023). Transformational leaders who use these components communicate the leader's vision to employees, empower employees to achieve organizational goals, and encourage employee participation in management and teamwork (Robbins and Davidhizar, 2020). Transformational leadership behaviors have been positively associated with organizational innovation, creativity, interpersonal trust, high performance behavior, perceptions of organizational justice, organizational culture, job satisfaction, teamwork, reduced work pressure, intention to stay at work, total quality management, patient safety, medical error reporting, and quality of care (Ajanaku et al., 2022; Borde et al., 2022; Conroy et al., 2023; Dwiyanto et al., 2020). A positive relationship between transformational leadership behaviors and health outcomes was found in a meta-analysis of the literature (Restivo et al., 2022). However, there is a positive relationship between health managers' transformational leadership behaviors and health personnel' organizational commitment (Haoyan et al., 2023; Hussain and Khayat, 2021).

1.1.2. Organizational Commitment

Organizational commitment refers to health personnel' desire to remain a member of the health institution, their identification with its values and goals, and their strong commitment to its well-being (de las Heras-Rosas et al., 2021). In other words, organizational commitment is related to the degree to which health personnel feel they belong and are connected to the health institution (Fragkos et al., 2020). These statements indicate that organizational commitment has an impact on the attitudes and behaviors of health personnel toward their jobs and the health institution for which they work (Diana et al., 2020). Positive attitudes and behaviors of health personnel, high-level of organizational commitment, contribute to achieving the goals of the health institution (Rofiqi et al., 2019). The level of organizational commitment has been positively associated with motivation, organizational citizenship behavior, job satisfaction, performance, productivity, intention to stay at work, quality of work life, mental health, organizational culture, learning organization, remuneration, career development, efficiency and

effectiveness of health institutions, and quality of healthcare services (Diana et al., 2020; Fragkos et al., 2020; Geremias et al., 2024; Rofiqi et al., 2019). Conversely, there is a negative relationship between the level of organizational commitment and absenteeism, turnover, and medical errors (de las Heras-Rosas et al., 2021; Fragkos et al., 2020). However, among the factors that influence the level of organizational commitment of health personnel is the leadership style of health managers (Wu et al., 2024). Transformational leadership, which has been described as an effective leadership style, positively increases organizational commitment among health personnel (Ystaas et al., 2023).

1.1.3. Transformational Leadership and Organizational Commitment

In the studies conducted in the literature, it has been concluded that transformational leadership behaviors of health managers in health institutions have a positive effect on organizational commitment of health personnel (Akbulat et al., 2013; Akyurt et al., 2015; Al-Dossary, 2022; Ayar, 2020; Çakınberk and Demirel, 2010; Çankaya, 2023; Dwiyanto et al., 2020; Gavya and Subashini, 2024; Geremias et al., 2024; Giannakos et al., 2024; Haoyan et al., 2023; Hussain and Khayat, 2021; Iqbal et al., 2020; Kırılmaz and Kırılmaz, 2010; Korkmaz, 2021; Othman and Khrais, 2022; Özbek, 2019; Rindu et al., 2020; Sayın, 2008; Sorucuoğlu and Öztürk, 2021; Tekingündüz and Kurtuldu, 2015; Top et al., 2010; Top et al., 2013; Tor, 2021; Ystaas et al., 2023). On the other hand, there is a study in the literature that concludes that there is a negative relationship between transformational leadership behaviors of health managers and organizational commitment of health personnel (Asiri et al., 2016). In this study (Asiri et al., 2016), it was emphasized that enhancing transformational leadership style can play an effective role in promoting organizational commitment among staff working in health institutions. These studies in the literature show that transformational leadership behaviors in health institutions generally have a positive effect on organizational commitment.

In the national and international literature, there is no meta-analysis study investigating the effect of transformational leadership behavior on organizational commitment in health institutions. In a literature review study (Ajanaku et al., 2022), it was stated that health managers should consider the transformational leadership style to improve the work outcomes of health personnel. In a systematic review study (Alanazi et al., 2023), it was concluded that health institutions should support health managers to have a stronger transformational leadership style by considering the various factors that influence their leadership in order to improve the quality of medical care. Organizational commitment is one of the factors that affect the work outcomes of health personnel and the leadership of health managers (Ystaas et al., 2023; Wu et al., 2024). The literature suggests that increasing organizational commitment among health personnel requires transformational leadership (Rindu et al., 2020). In another study, there was an emphasis on the fact that transformational leadership has the potential to improve organizational commitment among health personnel (Othman and Khrais, 2022). In a systematic review study, it was found that transformational leadership style should be universally used in healthcare organizations to increase the organizational commitment of health personnel and this may play an important role in increasing productivity, quality of healthcare services and patient safety (Hussain and Khayat, 2021). From this point of view, the study aimed to investigate the effect of transformational leadership behavior on organizational commitment in health institutions through meta-analysis method and the following hypothesis was developed:

H₁: The transformational leadership behavior has a positive effect on the organizational commitment in the health institutions.

II. METHODS

2.1. Reporting

The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) criteria and the flow diagram were used for the selection of the studies and the reporting of the results (Page et al., 2021).

2.2. Search Strategy

The Council of Higher Education Thesis Center, TÜBİTAK ULAKBİM, Google Scholar and DergiPark databases were searched using the keywords “dönüşümcü liderlik/transformational leadership” and “örgütsel bağlılık/organizational commitment”. Between October 1, 2023 and September 5, 2024, the literature was searched.

2.3. Study Selection

Inclusion criteria: (1) the effect of transformational leadership behavior of health managers on organizational commitment was investigated, (2) it was conducted in Turkish health institutions, (3) it was written in Turkish and/or English, (4) it used quantitative research methods, (5) it has full-text access, and (6) it has the necessary statistics to calculate effect size.

Exclusion criteria: (1) the effect of transformational leadership behavior of health managers on organizational commitment was not investigated, (2) it was not conducted in Turkish health institutions, (3) it was not written in Turkish and/or English, (4) qualitative research methods were used, (5) there was access to abstract text, (6) there were no statistics required to calculate effect size, and (7) it was a duplication study.

In cases where the selection criteria could not be decided, the studies were re-evaluated by the author. This process is shown in the flow diagram (Figure 1).

2.4. Data Extraction

The data obtained from the included studies were recorded with the help of a Microsoft Excel program. This data includes: authors, publication year, publication language, publication type, study design, sample size, statistical data, and quality assessment score. To ensure the validity of the data, the data obtained from the studies were reviewed by the author.

2.5. Meta-analysis

This meta-analysis study examined the effect of transformational leadership behavior on organizational commitment in health institutions. Meta-analysis is a preferred method because, by examining the results of more than one study, it provides highly probative information to the literature and to researchers on the research topic (Bergmann et al., 2018).

The data were analyzed using the Comprehensive Meta-Analysis (CMA, v. 4) program. The correlation effect size method was used to examine the relationship between transformational leadership behavior and organizational commitment in health institutions (Bowman, 2012). Common effect size calculated using random effects model ($Q: 289.03$; $df: 13$; $p < 0.001$; $I^2 > 0.75$; $\tau > 0.19$) (Table 2) (Chen et al., 2021).

2.6. Publication Bias

To assess publication bias, we used the funnel plot (Choi and Lam, 2016) and Egger's regression (Egger et al., 1997) methods.

2.7. Quality Assessment

The Avoiding Bias in the Selection of Studies (Agency for Healthcare Research and Quality-AHRQ) method was used for the quality assessment. The total score received from AHRQ ranges from 0 to 11. The scores received are categorized as low (0-3), moderate (4-7), and high quality (8-11) (Zheng et al., 2018). The author re-checked the quality scores obtained from the studies.

III. FINDINGS

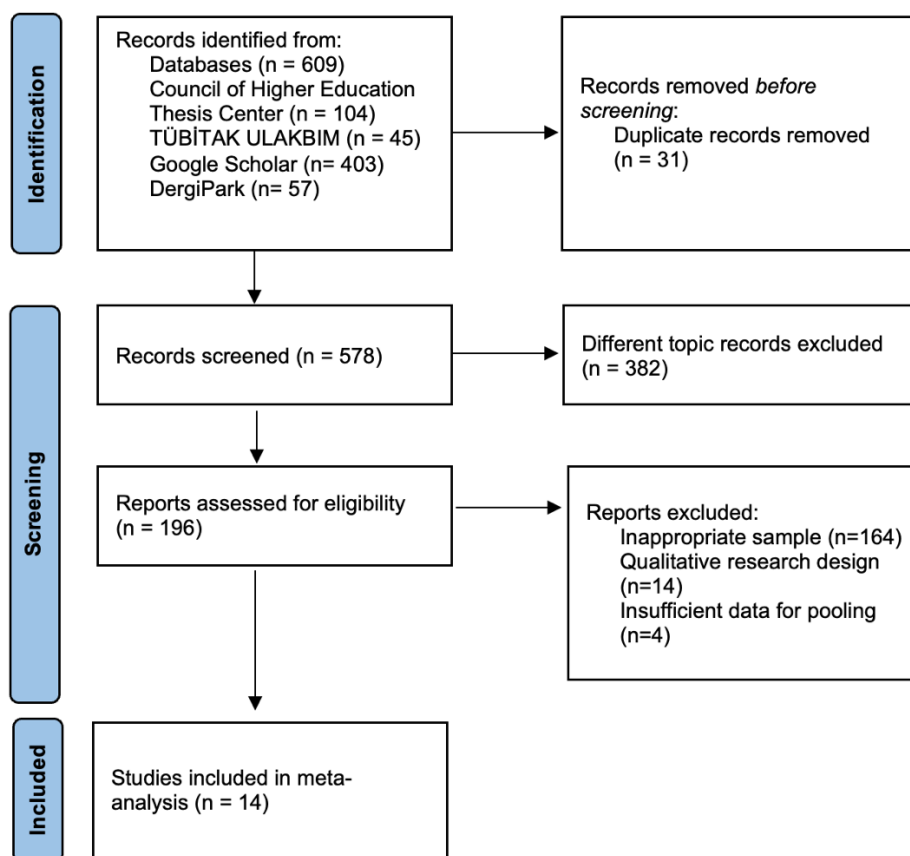
3.1. Study Selection

The search yielded a total of 609 studies. Of these, 31 duplicate studies were excluded. Subsequently, 382 studies were excluded because they were conducted on different research topics. Of the remaining 196 studies, 182 were excluded after full-text review and assessment. Finally, 14 studies that were in accordance with the inclusion criteria were included in the meta-analysis (Figure 1).

3.2. Study Characteristics

The sample of the study consists of 14 studies that examined the effect of transformational leadership behavior on organizational commitment in health institutions out of 609 publications (Figure 1). The studies were published between 2008 and 2023, in the publication types thesis (n=5), conference paper (n=1), and article (n=8), in the publication languages Turkish (n=13) and English (n=1), and in the cross-sectional study design. The effect of transformational leadership behavior on organizational commitment was examined in a sample of a total of 7.353 health personnel. Table 1 shows the characteristics of the included studies.

Figure 1. Flow Diagram



3.3. Quality Assessment Results

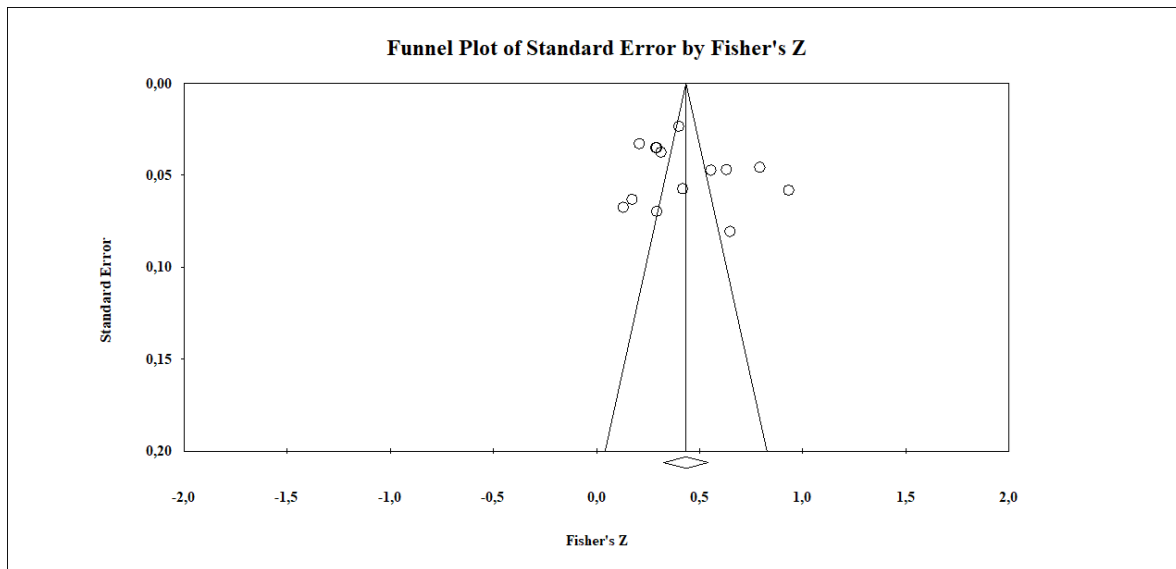
The AHRQ results show that the 14 studies that were included were of moderate quality (Table 1).

Table 1. Characteristics of Included Studies

No	Author(s)	Year of Publication	Publication Type	Study Design	Publication Language	Sample Size	Quality Score
1	Akbolat et al. 2013	2013	article	cross-sectional	Turkish	452	Moderate
2	Akyurt et al. 2015	2015	article	cross-sectional	Turkish	1.785	Moderate
3	Ayar 2020	2020	doctoral thesis	cross-sectional	Turkish	704	Moderate
4	Çakınberk and Demirel 2010	2010	article	cross-sectional	Turkish	296	Moderate
5	Çankaya 2023	2023	article	cross-sectional	Turkish	446	Moderate
6	Kırılmaz and Kırılmaz 2010	2010	article	cross-sectional	Turkish	252	Moderate
7	Korkmaz 2021	2021	master thesis	cross-sectional	Turkish	221	Moderate
8	Özbek 2019	2019	master thesis	cross-sectional	Turkish	156	Moderate
9	Sayın 2008	2008	master thesis	cross-sectional	Turkish	445	Moderate
10	Sorucuoğlu and Öztürk 2021	2021	article	cross-sectional	Turkish	476	Moderate
11	Tekingündüz and Kurtuldu 2015	2015	article	cross-sectional	Turkish	208	Moderate
12	Top et al. 2010	2010	conference paper	cross-sectional	Turkish	804	Moderate
13	Top et al. 2013	2013	article	cross-sectional	English	804	Moderate
14	Tor 2021	2021	master thesis	cross-sectional	Turkish	304	Moderate

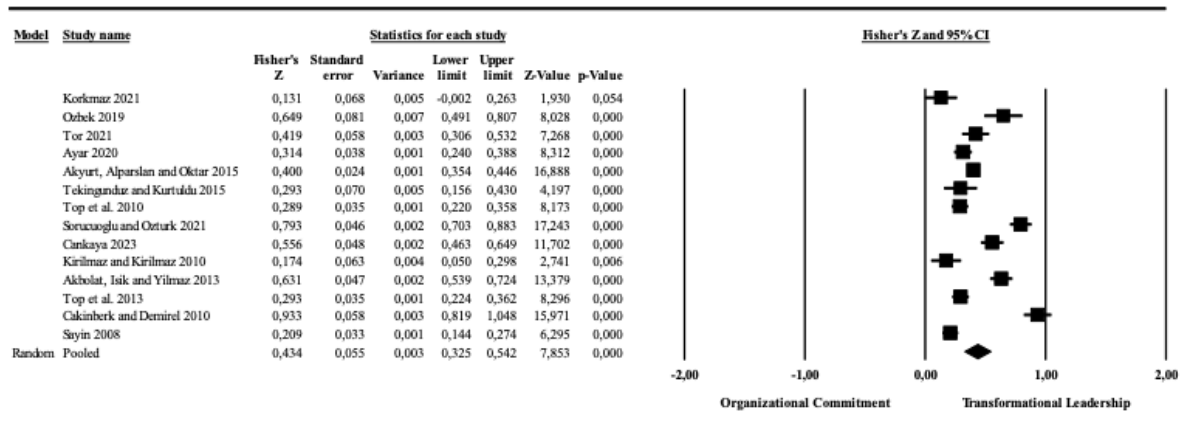
3.4. Publication Bias Results

The funnel plot is almost symmetrical (Figure 2). According to Egger's regression method, publication bias was not tested ($t: 0.92$; $p: 0.19$).

Figure 2. Funnel Plot

3.5. Meta-analysis Results

The forest plot shows that 13 studies show that transformational leadership behavior positively affects organizational commitment in health institutions, while 1 study shows that there is no relationship between transformational leadership behavior and organizational commitment (Figure 3).

Figure 3. Forest Plot

The results of the meta-analysis show that transformational leadership behavior has a high-level positive effect on organizational commitment in health institutions, and this result is statistically significant ($M: 0.41$; $95\% \text{ CI}: 0.31-0.49$; $p < 0.001$) (Table 2). Thus, hypothesis H_1 is accepted.

Table 2. Meta-analysis Results

k	M	95% CI		z	p	Q	df	p	I ²	τ ²
14	0.41	0.31	0.49	7.85	0.000	289.03	13	0.000	95.5	0.04

k: Number of studies, M: Random effect model, CI: Confidence interval, z: Normal standard deviation, Q: Cochran's test for heterogeneity, df: Degrees of freedom, I²: Amount of heterogeneity, τ²: Between-study variance.

IV. DISCUSSION AND CONCLUSION

This meta-analysis study examined the effect of transformational leadership behaviors on organizational commitment in health institutions and included 14 of the 609 studies in the literature. These studies were published between 2008 and 2023, in the publication types of thesis, paper, and article, in Turkish and English, and in cross-sectional study design. The effect of transformational leadership behavior on organizational commitment was examined in a sample of a total of 7,353 health personnel. The need for studies with different study designs is demonstrated by the fact that the included studies are cross-sectional.

In the national and international literature, there is no meta-analysis study investigating the effect of transformational leadership behavior on organizational commitment in health institutions. In the qualitative and quantitative studies conducted in the literature, it has been concluded that transformational leadership behavior of health managers in health institutions generally positively affects organizational commitment (Akbolat et al., 2013; Akyurt et al., 2015; Al-Dossary, 2022; Ayar, 2020; Çakınberk and Demirel, 2010; Çankaya, 2023; Dwiyanto et al., 2020; Gavya and Subashini, 2024; Geremias et al., 2024; Giannakos et al., 2024; Haoyan et al., 2023; Hussain and Khayat, 2021; Iqbal et al., 2020; Kırılmaz and Kırılmaz, 2010; Korkmaz, 2021; Othman and Khrais, 2022; Özbek, 2019; Rindu et al., 2020; Sayın, 2008; Sorucuoglu and Öztürk, 2021; Tekingündüz and Kurtuldu, 2015; Top et al., 2010; Top et al., 2013; Tor, 2021; Ystaas et al., 2023). This meta-analysis study concluded that transformational leadership behavior has a high-level positive effect on organizational commitment in health institutions. This meta-analysis result is similar to the literature result. This situation shows that transformational leadership behavior of health managers in health institutions will positively affect the commitment of health personnel to the health institution in which they work. Health institutions can use the results of this meta-analysis to design policies, strategies and workplace activities aimed at promoting the importance of the use of transformational leadership, which can influence health personnel's organizational commitment (Othman and Khrais, 2022). Strengthening the transformational leadership style of health managers will play an important role in the organizational commitment of health personnel (Asiri et al., 2016). To ensure this situation, a transformational leadership training program can be planned for health managers in health institutions and a mechanism for receiving feedback on the leadership styles of health managers can be established (Qtait, 2023). The effect of transformational leadership behavior on organizational commitment can positively contribute to increasing productivity, quality of healthcare services, and patient safety in health institutions (Hussain and Khayat, 2021). Therefore, it is believed that investigating the factors that may affect the effect of transformational leadership behavior on organizational commitment will contribute to the literature. The absence of publication bias in the study increased the validity and reliability of the study (Egger et al., 1997).

As a result, the study concluded that transformational leadership behavior has a high-level positive effect on organizational commitment in health institutions. This shows that transformational leadership behavior of health managers in health institutions will increase the commitment of health personnel to the health institution. This result obtained from the study should be supported by studies that will investigate the effect of transformational leadership behavior on organizational commitment according to the types of health personnel.

V. LIMITATIONS

This meta-analysis is limited to the data obtained from the cross-sectional studies that were included in the analysis. The results of the study should have support from the conduct of studies with different research designs. The databases used in the study are another limitation of the study. Therefore, there is a need for meta-analysis studies to be conducted across different databases. The results of the meta-analysis cannot be generalized by type of health personnel. This situation reflects the need to investigate the effect of transformational leadership behavior on organizational commitment according to the types of health personnel.

Ethics Committee Approval: This study does not require ethics committee approval.

REFERENCES

- Ajanaku, O. J., Lubbe, W., & Adufe, I. (2022). Transformational leadership style and work outcomes of healthcare professionals: A review of literature. *African Renaissance*, 19(3), 57-79. <https://doi.org/10.31920/2516-5305/2022/19n3a3>
- Akbolat, M., Işık, O., & Yılmaz, A. (2013). Dönüşümcü liderlik davranışının motivasyon ve duygusal bağlılığa etkisi. *Uluslararası İktisadi ve İdari İncelemeler Dergisi*, (11), 35-50.
- Akyurt, N., Alparslan, A.M., & Oktar, Ö.F. (2015). Sağlık çalışanlarında liderlik tarzları-iş tatmini-örgütsel bağlılık modeli. *Süleyman Demirel Üniversitesi Vizyoner Dergisi*, 6(13), 50-61.
- Al-Dossary, R. N. (2022). Leadership style, work engagement and organizational commitment among nurses in Saudi Arabian hospitals. *Journal of healthcare leadership*, 71-81. <https://doi.org/10.2147/JHL.S365526>
- Alanazi, N. H., Alshamlani, Y., & Baker, O. G. (2023). The association between nurse managers' transformational leadership and quality of patient care: A systematic review. *International nursing review*, 70(2), 175-184. <https://doi.org/10.1111/inr.12819>
- Asiri, S. A., Rohrer, W. W., Al-Surimi, K., Da'ar, O. O., & Ahmed, A. (2016). The association of leadership styles and empowerment with nurses' organizational commitment in an acute health care setting: a cross-sectional study. *BMC nursing*, 15, 38-48. <https://doi.org/10.1186/s12912-016-0161-7>
- Ayar, M. (2020). *Liderliğin açık etme (Whistleblowing) ve işgören sesliliğine etkisinde örgütsel bağlılığın aracılık rolü: Sağlık sektörü araştırması*. Doktora Tezi, Giresun Üniversitesi Sosyal Bilimler Enstitüsü.
- Bergmann, C., Tsuji, S., Piccinini, P. E., Lewis, M. L., Braginsky, M., Frank, M. C., & Cristia, A. (2018). Promoting replicability in developmental research through meta- analyses: Insights from language acquisition research. *Child development*, 89(6), 1996-2009.
- Borde, P. S., Arora, R., & Kakoty, S. (2022). Transformational health-care leaders in collaborative entrepreneurial model to achieve UNSDG: a qualitative study. *Leadership in Health Services*, 35(4), 477-493. <https://doi.org/10.1108/LHS-03-2022-0032>
- Bowman, N. A. (2012). Effect sizes and statistical methods for meta-analysis in higher education. *Research in Higher Education*, 53, 375-382. <https://doi.org/10.1007/s11162-011-9232-5>
- Chen, T. Y., Jou, R. C., & Chiu, Y. C. (2021). Using the multilevel random effect model to analyze the behavior of carpool users in different cities. *Sustainability*, 13(2), 937-950. <https://doi.org/10.3390/su13020937>
- Choi, S. W., & Lam, D. M. H. (2016). Funnels for publication bias-have we lost the plot?. *Anaesthesia*, 71(3), 338-341. <https://doi.org/10.1111/anae.13355>
- Conroy, N., Patton, D., Moore, Z., O'Connor, T., Nugent, L., & Derwin, R. (2023). The relationship between transformational leadership and staff nurse retention in hospital settings: a systematic review. *Journal of Nursing Management*, 2023, 1-10. <https://doi.org/10.1155/2023/9577200>

- Curado, C., & Santos, R. (2022). Transformational leadership and work performance in health care: the mediating role of job satisfaction. *Leadership in Health Services*, 35(2), 160-173. <https://doi.org/10.1108/LHS-06-2021-0051>
- Çakınberk, A., & Demirel, E. T. (2010). Örgütsel bağlılığın belirleyicisi olarak liderlik: Sağlık çalışanları örneği. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, (24), 103-119.
- Çankaya, M. (2023). Dönüştürücü liderlik ve örgütsel bağlılık arasındaki ilişkinin incelenmesi: Sağlık sektöründe bir uygulama. *Sosyal Bilimler EKEV Akademi Dergisi*, (94): 206-217.
- de Las Heras-Rosas, C., Herrera, J., & Rodríguez-Fernández, M. (2021). Organisational commitment in healthcare systems: A bibliometric analysis. *International Journal of Environmental Research and Public Health*, 18(5), 2271-2292. <https://doi.org/10.3390/ijerph18052271>
- Diana, Eliyana, A., Permana Emur, A., & Sridadi, A. R. (2020). Building nurses' organizational commitment by providing good quality of work life. *Systematic Reviews in Pharmacy*, 11(4), 142-150. <https://doi.org/10.31838/srp.2020.4.22>
- Dwiyanto, F., Wijaya, I. P. G., & Indrayathi, P. A. (2020). Association between transformational leadership, organizational commitments, and application of Total Quality Management (TQM) to employee performance in Sanglah General Hospital, Bali, Indonesia. *Intisari Sains Medis*, 11(3), 928-933. <https://doi.org/10.15562/ism.v11i3.821>
- Egger, M., Smith, G. D., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *BMJ*, 315, 629-634. <https://doi.org/10.1136/bmj.315.7109.629>
- Fragkos, K. C., Makrykosta, P., & Frangos, C. C. (2020). Structural empowerment is a strong predictor of organizational commitment in nurses: A systematic review and meta- analysis. *Journal of Advanced Nursing*, 76(4), 939-962. <https://doi.org/10.1111/jan.14289>
- Gavya, V., & Subashini, R. (2024). The role of leadership styles in fostering organizational commitment among nurses. *SAGE Open*, 14(2), 1-11. <https://doi.org/10.1177/21582440241242531>
- Geremias, R. L., Lopes, M. P., & Sotomayor, A. M. (2024). Improving organizational commitment among healthcare employees in Angola: The role of psychological capital and perceived transformational leadership. *Healthcare*, 12(3), 326-342. <https://doi.org/10.3390/healthcare12030326>
- Giannakos, K., Belias, D., Ntalakos, A., Rossidis, I., & Koustelios, A. (2024). Are leadership styles related to change integration and commitment? The case of general hospitals in the area of Thessaly (Greece). *Archives of Hellenic Medicine*, 41(3), 354-362.
- Haoyan, X., Waters, D., Jinling, H., Qionglng, L., & Sien, L. (2023). Quantitative systematic review of the transformational leadership style as a driver of nurses' organisational commitment. *Nursing open*, 10(7), 4160-4171. <https://doi.org/10.1002/nop.2.1671>
- Hussain, M. K., & Khayat, R. A. M. (2021). The impact of transformational leadership on job satisfaction and organisational commitment among hospital staff: A systematic review. *Journal of Health Management*, 23(4), 614-630. <https://doi.org/10.1177/09720634211050463>
- Iqbal, K., Fatima, T., & Naveed, M. (2020). The impact of transformational leadership on nurses' organizational commitment: a multiple mediation model. *European Journal of Investigation in Health, Psychology and Education*, 10(1), 262-275. <https://doi.org/10.3390/ejihpe10010021>
- Kırılmaz, S., & Kırılmaz, H. (2010). Transformasyonel liderliğin örgütsel bağlılık üzerine etkileri: Sağlık Bakanlığı merkez teşkilatında bir araştırma. *Türk İdare Dergisi*, 469, 119-138.

- Korkmaz, E. (2021). *Sorumlu hemşirelerin dönüşümcü liderlik davranışının çalışan hemşirelerin örgütsel bağlılıklarına etkisi*. Yüksek Lisans Tezi, Beykent Üniversitesi Lisansüstü Eğitim Enstitüsü.
- Mohammed, A. A., & Al-Abrow, H. (2024). The impact of empowering and transformational leadership on innovative behaviour: the mediating role of psychological empowerment in health-care sector. *Leadership in Health Services*, 37(2), 231-246. <https://doi.org/10.1108/LHS-05-2023-0036>
- Othman, T., & Khrais, H. (2022). The relationship between transformational leadership, job satisfaction, and organizational commitment in Jordanian nurses. *Anaesthesia, Pain & Intensive Care*, 26(3), 304-309. <https://doi.org/10.35975/apic.v26i3.1896>
- Özbek, Ö. (2019). *Dönüşümsel liderlik algısının örgütsel bağlılık ve iş tatminine etkisinde kuşak farklılıklarının incelenmesi: İlaç sektöründe bir araştırma*. Yüksek Lisans Tezi, Yıldız Teknik Üniversitesi Sosyal Bilimler Enstitüsü.
- Page, M. J., Mckenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akkl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo Wilson, E., Mcdonald, S., Mcguinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting, P. & Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*, 372, n71. <https://doi.org/10.1136/bmj.n71>
- Qtait, M. (2023). Systematic review of head nurse leadership style and nurse performance. *International Journal of Africa Nursing Sciences*, 18, 100564. <https://doi.org/10.1016/j.ijans.2023.100564>
- Restivo, V., Minutolo, G., Battaglini, A., Carli, A., Capraro, M., Gaeta, M., Odone, A., Trucchi, C., Favaretti, C., Vitale, F. & Casuccio, A. (2022). Leadership effectiveness in healthcare settings: a systematic review and meta-analysis of cross-sectional and before–after studies. *International journal of environmental research and public health*, 19(17), 10995. <https://doi.org/10.3390/ijerph191710995>
- Rindu, R., Lukman, S., Hardisman, H., Hafizurrachman, M., & Bachtar, A. (2020). The relationship between transformational leadership, organizational commitment, work stress, and turnover intentions of nurse at private hospital in Indonesia. *Open Access Macedonian Journal of Medical Sciences*, 8(E), 551-557. <https://doi.org/10.3889/oamjms.2020.4425>
- Robbins, B., & Davidhizar, R. (2020). Transformational leadership in health care today. *The Health Care Manager*, 39(3), 117-121. <https://doi.org/10.1097/HCM.0000000000000296>
- Rofiqi, E., Nuritasari, R. T., & Wiliyanarti, P. F. (2019). Factors affecting the organizational commitment of nurses in comprehensive health services: A systematic review. *Journal Ners*, 14(3), 195-198. [https://doi.org/10.20473/jn.v14i3\(si\).17056](https://doi.org/10.20473/jn.v14i3(si).17056)
- Sayın, Ç. (2008). *Yönetici hemşirelerde algılanan liderlik tarzlarının, hemşirelerin örgütsel bağlılıkları üzerindeki etkilerinin belirlenmesi*. Yüksek Lisans Tezi, Haliç Üniversitesi Sağlık Bilimleri Enstitüsü.
- Sorucuoğlu, A.Y., & Öztürk, Z. (2021). Hastane çalışanlarının dönüşümcü liderlik algılarının örgütsel bağlılıklarına etkisi (Ankara ilinde bir devlet hastanesi örneği). *Sağlıkta Performans ve Kalite Dergisi*, 18(1), 61-68.

- Tekingündüz, S., & Kurtuldu, A. (2015). İşten ayrılma niyeti, iş tatmini, örgütsel bağlılık, liderlik ve iş stresi arasındaki ilişkilerin analizi: Bir hastane örneği. *International Journal of Human Sciences*, 12(1), 1501-1517. <https://doi.org/10.14687/ijhs.v12i1.3270>
- Top, M., Tarcan, M., Tekingündüz, S., & Hikmet, N. (2013). An analysis of relationships among transformational leadership, job satisfaction, organizational commitment and organizational trust in two Turkish hospitals. *The International journal of health planning and management*, 28(3), e217-e241. <https://doi.org/10.1002/hpm.2154>
- Top, M., Tarcan, M., Tekingündüz, S., & Yılmaz, İ. (2010). *Hastane insan kaynaklarında dönüştürücü liderlik, örgütsel bağlılık, iş doyumu ve örgütsel güven araştırması*. II. Uluslararası Sağlıkta Performans ve Kalite Kongresi Bildiri Kitabı, 223-239, Ankara.
- Tor, A. (2021). *Hastane yöneticilerinin yöneticilik tarzlarının çalışanların iş tatmini ve örgütsel bağlılık düzeylerine etkisi: Buna yönelik bir araştırma*. Yüksek Lisans Tezi, İstanbul Aydın Üniversitesi Lisansüstü Eğitim Enstitüsü.
- Wu, Y., Awang, S. R., Ahmad, T., & You, C. (2024). A systematic review of leadership styles in healthcare sector: Insights and future directions. *Geriatric Nursing*, 59, 48-59. <https://doi.org/10.1016/j.gerinurse.2024.06.033>
- Ystaas, L. M. K., Nikitara, M., Ghobrial, S., Latzourakis, E., Polychronis, G., & Constantinou, C. S. (2023). The impact of transformational leadership in the nursing work environment and patients' outcomes: a systematic review. *Nursing Reports*, 13(3), 1271-1290. <https://doi.org/10.3390/nursrep13030108>
- Zheng, M., Jin, H., Shi, N., Duan, C., Wang, D., Yu, X., & Li, X. (2018). The relationship between health literacy and quality of life: a systematic review and meta-analysis. *Health and quality of life outcomes*, 16, 1-10. <https://doi.org/10.1186/s12955-018-1031-7>

