Reducing Clinical Nurses' Burnout through Nurse Managers' Leadership Style: A Systematic Review and Meta-analysis

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Abstract:

Background/Objectives*: Leadership styles exhibited by nurse leaders play an essential role in alleviating burnout among staff nurses; however, a comprehensive meta-analysis on this research subject is currently lacking. Hence, this review explored the current literature on related studies published between 2020 and 2025, and examined the influence of nurse managers' leadership styles on clinical nurses' burnout.* ***Methods:*** *This review adhered to the guidelines developed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement. A total of 15 articles searched from six databases: Pub Med, Web of Science, CINAHL Plus, Scopus, Science Direct, and EBSCO through the Saudi Digital Library (SDL), fulfilled the criteria and were subsequently included in the final review and meta-analysis.* ***Results:*** *Out of the total15studies, it was indicated that nurse burnout is a global issue, with nurse leadership being a crucial factor in mitigating this problem. The primary positive leadership styles that influenced this situation are authentic leadership, effective head nurse leadership, empowering leadership, ethical leadership, inclusive leadership, paradoxical leadership, servant leadership, and transformational leadership (overall effect size = -0.19; CI = -0.37, -0.00; p = 0.045). On the other hand, the negative leadership styles that influenced this problem are authoritarian leadership and destructive leadership (overall effect size = 0.29; CI = 0.02, 0.57; p = 0.034).* ***Conclusions:*** *Nursing leaders can alleviate nurse burnout by fostering positive leadership styles and eliminating negative leadership practices. Several other factors, both with direct and indirect effects, must also be considered, as they have significantly contributed to the reduction in burnout experienced by clinical nurses.*

Keywords: *Burnout; nurse; leadership; meta-analysis; nurse manager; systematic review*

1. Introduction

Burnout represents a sustained response to prolonged emotional and interpersonal stressors encountered in the workplace, characterized by three key dimensions: exhaustion, cynicism, and inefficacy [1,2]. Burnout syndrome is defined by severe physical and mental fatigue associated with one's professional responsibilities [3, 4]. Numerous professionals encounter this condition, yet nursing personnel are particularly notable [3]. Engaging in primary healthcare necessitates significant focus and ongoing pressures,

which can result in fatigue, thereby increasing their susceptibility to workplace accidents [3,5]. Maslach proposed that burnout represents a condition arising from a sustained misalignment between an individual and at least one of the following six work dimensions [1, 6, and 7]:

1. Workload: an overwhelming workload and demands that prevent adequate recovery [1,6,7].
2. Control: workers lack sufficient authority over the resources necessary to fulfill or achieve their job responsibilities [1,6,7].
3. Reward: absence of appropriate compensation for the work performed. Rewards may be financial, social, or intrinsic (such as the pride one derives from performing a task)[1,6,7].
4. Community: employees fail to perceive positive relationships with their peers and supervisors, resulting in frustration and diminishing the chances of receiving social support [1,6,7].
5. Fairness: an individual perceiving inequity in the workplace, which includes disparities in workload and compensation[1,6,7].
6. Values: employees feeling pressured by their roles to act contrary to their personal values and aspirations, or when they encounter conflicts between the values of the organization [1,6,7].

Research on the healthcare workforce frequently categorizes burnout as a result within the nursing profession, termed as 'nursing outcome'. However, the concept of burnout itself—its defining characteristics, the various factors that lead to its emergence, and the broader implications for individuals, organizations, or their patients—are seldom clearly articulated [8]. Burnout among nurses represents a multifaceted issue shaped by numerous elements, such as workload, emotional demands, and the level of organizational support, resulting in considerable repercussions for both nursing professionals and the quality of patient care. The topic of nurse burnout is a topic of international research and documentation, with the leadership of nurses playing a crucial role in mitigating its effects [9]. Burnout causes nurses to become disengaged and lose their sense of compassion for their work, which is detrimental to the healthcare field [10].

Contemporary healthcare organizations are encountering escalating pressures to recruit and retain nurses who endure significant workplace stress [11]. The incidence of burnout among nurses continues to rise, leading to adverse effects on the nursing work environment, patient outcomes, and the retention of skilled nurses [10]. Nurse leaders play a crucial role in cultivating and nurturing positive work environments that sustain an empowered and motivated workforce [10]. Nurses play a crucial role as healthcare providers in society, employing genuine leadership strategies to alleviate burnout and stressors [12]. Burnout has been significantly recognized as a psychological response that arises from the existence of chronic job stressors [12,13]. Studies suggest that positive and relational leadership styles can alleviate nurses' burnout [9-13]; however, a meta-analysis on this research topic has not yet been conducted.

Aim of the Study

The purpose of this systematic review and meta-analysis was to examine the current literature on related studies published between 2020 and 2025, and to assess the influence of nurse managers' leadership styles on clinical nurses' burnout.

2. Materials and Methods

2.1 Design

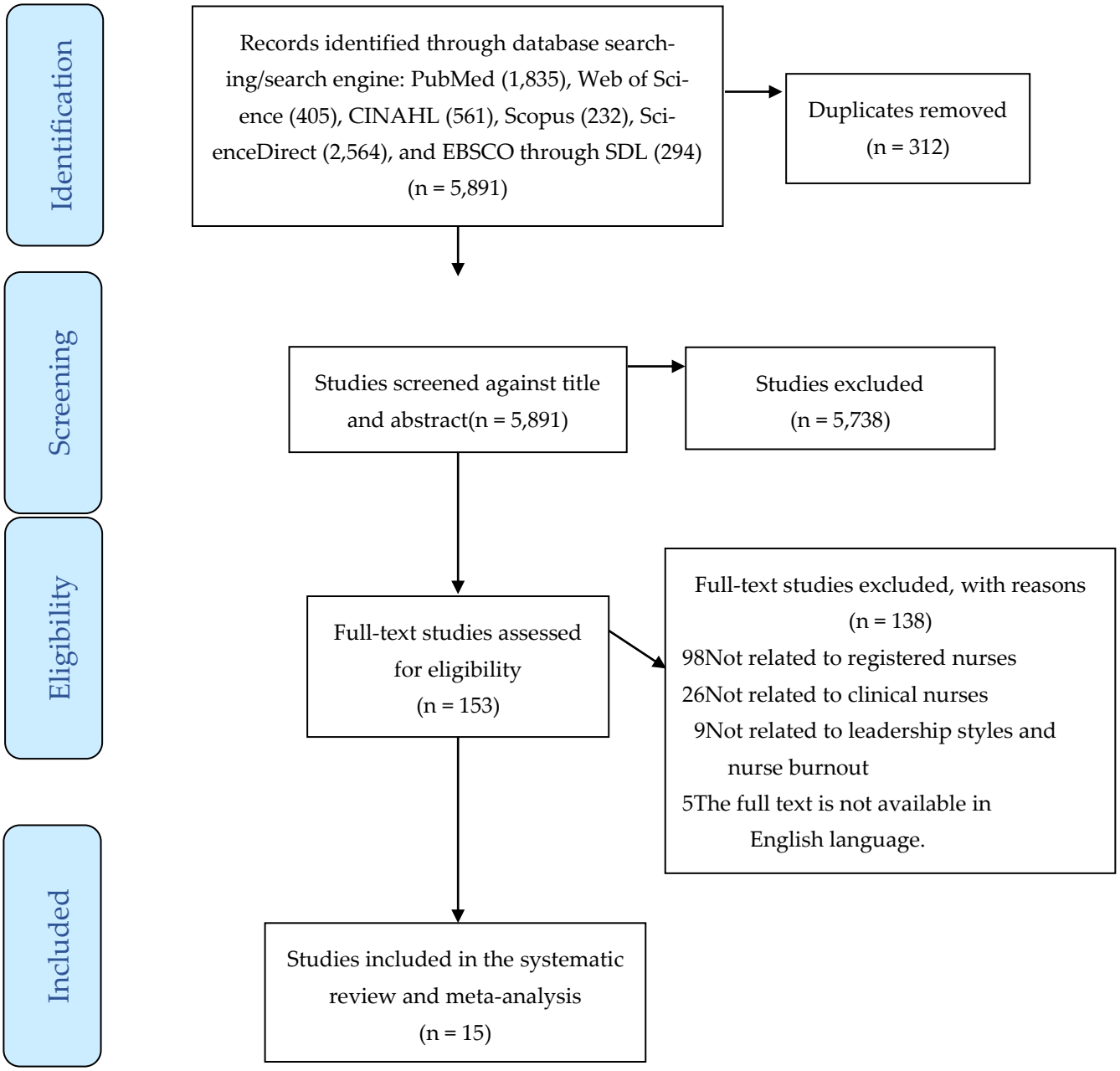
This review employed a systematic review and meta-analysis design that was carried out in accordance with the updated Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines [14]. The review focused on the reported relationship between nurse managers' leadership styles and perceived burnout experienced by staff nurses. The most recent systematic review analyzed 18 studies published from 2010 to 2019 (ten years) that evaluated the influence of various nurse leadership styles on the burnout levels of staff nurses [9]. In addition, Wei et al.'s review [9] did not employ a meta-analysis. The current review not only corroborated but also contributed additional evidence regarding the relationship between nurse managers' leadership styles and nurse burnout, thereby supplementing the findings presented by Wei et al. [9].This protocol has been registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on December 04, 2025, with the INPLASY registration number: INPLASY2025120012.

2.2 Search Strategy

A total of six databases were searched: Pub Med, Web of Science, CINAHL Plus, Scopus, Science Direct, and EBSCO through the Saudi Digital Library (SDL). The search was conducted using the following keywords and Mesh search terms: "relationship" OR "association" OR "influence" OR "correlation" AND "leadership" OR "leadership style" AND "nurse manager" OR "nurse" AND "burnout". In a specific example within Pub Med, the following search parameters are provided to ensure the credibility and transparency of the search process. ((((("relationship"[All Fields] OR "association"[All Fields] OR "influence"[All Fields] OR "correlation"[All Fields]) AND "leadership"[All Fields]) OR "leadership style"[All Fields]) AND "nurse manager"[All Fields]) OR "nurse"[All Fields]) AND "burnout"[All Fields]) AND (y_5[Filter]), where '(y_5[Filter])' indicates that a five-year filter was applied in the search, yielding 1,835 records that displayed their titles and abstracts. Additionally, a free text search was conducted to guarantee that the systematic review was thorough and rigorous.

The results of the search from each database were imported into Covidence software [15]. The two researchers independently reviewed the titles and abstracts of each study. Furthermore, both researchers also assessed the full text of the studies according to the eligibility criteria. Any conflicts were resolved by a third reviewer, who served as assistant researcher. Ultimately, 15 studies that fulfilled the inclusion criteria based on methodological quality assessment for systematic review and meta-analysis were included in the final review. The complete process is illustrated in the PRISMA flowchart (see Figure 1).

Figure 1. PRISMA flow chart of the systematic review and meta-analysis.



2.3 Eligibility Criteria

The inclusion criteria were delineated as follows: (1) studies conducted within any hospital setting, (2) studies examining the relationship between nurse managers' leadership style and staff nurses' burnout, (3) studies where the leadership styles of nurse managers were derived from the perceptions of staff nurses, and (4) studies published within the last five years, specifically from 2020 to 2025. The final search was executed on the last day of the third quarter of the year, particularly on September 30, 2025.

The exclusion criteria were specified as follows: (1) studies not published in the English language; (2) studies conducted outside of hospital settings, including conference abstracts, oral presentations, qualitative research, review papers or non-original research; (3) studies with lacking clear description of the leadership style under investigation; (4) studies with ambiguous objectives, methodologies, data collection methods, or incomplete data; (5) studies that involved healthcare professionals from which data pertaining to nurses could not be extracted, and (6) studies not published in peer-reviewed journals or not indexed in any of the following databases: EBSCO, Web of Science, Scopus, and Pub Med.

2.4 Quality Appraisal

In total, 15 studies were appraised following the Joanna Briggs Institute (JBI) guidelines for evaluating the quality of full-text research pertaining to quantitative, cross-sectional studies [16,17]. Each of the included studies underwent independent critical appraisal by two researchers, and none of the 15 studies were excluded based on the quality appraisal scores (see Table 1). The appraisal score for each of the included studies was calculated based on the critical appraisal tool of the JBI with the following highest score of 8 out of 8 for quantitative, cross-sectional studies. The results from these studies were synthesized narratively, considering the inferential statistical results based on the reported correlation between the leadership styles of nurse managers and the burnout experienced by clinical nurses. In the next section, the details of the meta-analysis are outlined.

Table 1. Quality appraisal according to JBI checklist for cross-sectional studies

Author(s) and year of publication	1. Were the criteria for inclusion in the sample clearly defined?	2. Were the study objects and the setting described in detail?	3. Was the exposure measured in a valid and reliable way?	4. Were objective, standard criteria used for measurement of the condi-	5. Were confounding factors identified?	6. Were strategies to deal with confounding factors stated?	7. Were the outcomes measured in a valid and reliable way?	8. Was an appropriate statistical analysis used?	Total JBI Score	Share of answer of YES	Quality assessment
Alsadaan [19]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excellent
Zheng et al. [20]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excellent
Jiaqing et al. [21]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excellent
Khan et al. [22]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excellent
Salama et al.	Yes	Yes	Yes	Yes	Ye	Yes	Yes	Yes	8/	100	Excel-

[23]					s				8	%	lent
Wu et al. [24]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excel-lent
Lambert et al. [25]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excel-lent
Pillay et al. [26]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excel-lent
Al Sabei et al. [27]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excel-lent
Ahmed et al. [28]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excel-lent
Palvimo et al. [29]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excel-lent
Guo et al. [30]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excel-lent
Westbrook et al. [11]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excel-lent
Ma et al. [31]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excel-lent
Wu et al. [32]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8	100%	Excel-lent

Note. JBI = Joanna Briggs Institute
Scoring: 1 (Yes), 0 (No), 0 (Unclear), NA (Not Applicable)
Evaluation: Excellent (>75.1%), Some limitations (50.1–75%), Several limitations (≤50%)

2.5 Data Extraction

In total, 15 studies were included in the final review and meta-analysis. A template was established by the researchers to facilitate data extraction. The data extraction from the included studies focused on general study characteristics including author, year, country of origin, design, sample, and key results, as well as the JBI appraisal score (refer to Table 2).

Moreover, in preparation for performing a meta-analysis, the researchers extracted the unstandardized beta (β) regression coefficient value and the variance indicated by the R squared value of the regression model, which demonstrated the significant effect size of nurse managers' leadership style on curbing the burnout levels experienced by clinical nurses.

2.6 Meta-analysis

This review utilized the Statistical Package for Social Sciences (SPSS) version 31 (International Business Machines [IBM], Armonk, New York, USA), which has a built-in component to conduct meta-analysis. The researchers organized the data in an Excel spreadsheet format, including columns for study identification (ID), effect sizes represented by the β value, sample sizes, and variances denoted by the R squared value. A

fixed-effects model was employed, positing that true effects do not vary. Therefore, all indices of heterogeneity, including I-squared, were assumed to be zero [18].

Table 2. Study Characteristics and Key Findings of the 15 Included Studies

Author(s), Year and Country	Design and Study Sample	Leadership- and Burnout-Related Instruments	Key Findings	JBI Score
Alsadaan[19] 2025 Saudi Arabia	Quantitative, cross-sectional survey 166 registered nurses	Destructive Leadership Questionnaire Maslach Burnout Inventory—Human Services Survey	Destructive leadership exhibited a positive correlation with occupational pressures ($r = 0.40$, $p < 0.01$) and the dimensions of burnout (emotional exhaustion: $r = 0.49$; depersonalization: $r = 0.37$; $p < 0.01$), while showing a negative correlation with personal accomplishment ($r = -0.42$, $p < 0.01$). Moreover, formal support systems acted as a moderating factor in the relationship between destructive leadership and occupational pressures ($\beta = -0.13$, $p < 0.05$), as well as between occupational pressures and emotional exhaustion ($\beta = -0.12$, $p < 0.05$).	8/8
Zheng et al. [20] 2025 China	Quantitative, cross-sectional design 1,160 nurses	Authoritarian Leadership Component of the Paternalistic Leadership Scale Chinese version of the Maslach Burnout Inventory	Authoritarian leadership ($r = 0.502$, $P < 0.01$) exhibited significant positive correlation with burnout, whereas organizational climate ($r = -0.556$, $P < 0.01$) and psychological capital ($r = -0.538$, $P < 0.01$) demonstrated significant negative correlations with burnout. Both organizational cli-	8/8

			mate and psychological capital functioned as mediators in the relationship between authoritarian leadership and burnout (β = 0.061, 95% CI (0.038, 0.086)). The overall impact of authoritarian leadership on burnout (0.297) comprised a direct effect (0.338) and an indirect effect (-0.042).	
Jiaqing et al. [21] 2025 China	Quantitative, cross-sectional design 579 registered nurses	Head Nurse Leadership Scale Chinese version of the Occupational Burnout Scale	This study indicated that the leadership of head nurses had a negative correlation with the burnout reported by nurses. The parallel mediation analysis revealed that both job resources and job demands functioned simultaneously in the connection between head nurse leadership and job burnout. Head nurse leadership mitigated job burnout via job resources while simultaneously exacerbating job burnout through job demands.	8/8
Khan et al. [22] 2025 Pakistan	Quantitative, correlational, cross-sectional survey 212 nurses	Empowering Leadership Scale Occupational Burnout Scale	The findings indicated that empowering leadership plays a significant role in reducing occupational burnout. Moreover, the study's results affirm that workaholism serves as a vital mediator between empowering leadership and occupational	8/8

			burnout within the workplace. Additionally, the findings revealed that empowering leadership can impose excessive workloads on nurses, contributing to occupational burnout. Furthermore, psychological hardiness emerged as a significant moderator in the relationship between workaholism and occupational burnout. Ultimately, the results of the moderated mediation model demonstrated that nurses exhibiting high psychological hardiness are able to adapt and cope effectively with demanding workloads, such as workaholism, when supported by their leaders, which ultimately leads to a decrease in occupational burnout.	
Salama et al. [23] 2025 Egypt	Quantitative, non-experimental cross-sectional prospective design 314 nurses	Nurse Managers' Paradoxical Leadership Scale Maslach Burnout Inventory	A statistically significant inverse relationship was identified between the paradoxical leadership of nurse managers and both organizational cynicism and occupational burnout. Furthermore, a statistically significant direct relationship was established between organizational cynicism and occupational burnout.	8/8
Wu et al. [24]	Quantitative, two-wave longi-	Inclusive Leadership Scale	Inclusive leadership exerted a negative impact	8/8

2025 China	tudinal study 360 nurses	Maslach Burnout Inventory	on burnout, both directly and indirectly, via professional identity and workplace social capital (all $p < 0.001$). The indirect effects constituted 65.58% of the total effect, with significant mediation observed through both pathways.	
Lambert et al. [25] 2024 USA	Quantitative, cross-sectional design 216 nurses	Ethical Leadership Scale Malach-Pines' Short Version of Burnout Measure	Findings indicated that the presence of ethical leadership reduced the likelihood of nurses resigning, while also diminishing the impact of bullying on burnout. Perceived ethical leadership was a significant predictor of retention intentions ($\beta = 0.62$, $p = 0.00$), and it served as a moderator for the relationship between bullying and burnout ($\beta = 0.20$, $p = 0.03$). Furthermore, bullying was found to have a significant positive correlation with burnout ($\beta = 0.22$, $p = 0.02$), whereas burnout exhibited a significant negative correlation with the intention to remain in the profession ($\beta = -0.18$, $p = 0.01$).	8/8
Pillay et al. [26] 2024 South Africa	Cross-sectional quantitative research method 241 nurses	Authentic Leadership Questionnaire Maslach Burnout Inventory – General Survey	Multiple regression analyses revealed statistically significant negative relationships between authentic leadership and emotional exhaustion, cynicism, job stress, and	8/8

			job-stress-related presenteeism, alongside a positive relationship between authentic leadership and professional efficacy.	
Al Sabei et al. [27] 2023 Oman	Quantitative, cross-sectional design 160 emergency nurses	Authentic Leadership Questionnaire Maslach Burnout Inventory	Authentic leadership and a favorable work environment were significantly correlated with lower job burnout. Transparency of nurse managers (β = - 0.481, p = 0.031), ethical/moral conduct (β = - .408, p = 0.043), managerial ability and support (β = - 0.497, p = 0.018), and sufficient staffing and resources (β = -.068, p = 0.028) were all correlated with decreased job burnout.	8/8
Ahmed et al. [28] 2023 China	Quantitative, three-wave longitudinal design 1,204 nurses	Global Servant Leadership Scale Maslach Burnout Inventory – General Survey	At time 1, servant leadership notably decreased nurses' burnout, as assessed at time 3, by way of the mediating influence of psychological safety evaluated at time 2. Furthermore, an increased level of trust in the leader enhanced the effectiveness of servant leadership in mitigating nurses' burnout.	8/8
Palvimo et al. [29] 2023 Finland	Quantitative, cross-sectional design 2,115 registered nurses	Destructive Leadership Scale Burnout Assessment Tool	Destructive leadership and job demands exhibited a positive correlation with burnout (β=0.39 and 0.32, respectively; both p<0.001), while job resources showed a negative correlation with	8/8

			burnout (β=−0.41, p<0.001). When job resources were incorporated into the regression model, the positive associations of destructive leadership and job demands with burnout diminished (β=0.21 and 0.14, respectively; both p<0.001).	
Guo et al. [30] 2022 China	Quantitative, multicenter cross-sectional study 321 intensive care unit nurses	Transformational Leadership Questionnaire Emotional Exhaustion subscale of Maslach Burnout Inventory — General Survey	Burnout exhibited a positive correlation with perceived overqualification and a negative correlation with transformational leadership (each p < 0.05). Transformational leadership served as a significant mediator in the relationship between perceived overqualification and burnout (b = 0.6389, 95% confidence interval: 0.8706, 0.4072).	8/8
Westbrook et al. [11] 2022 USA	Quantitative, cross-sectional survey 248 nursing professionals	Servant leadership survey BURN Scale, a modified, reduced version of Maslach & Jackson's (1981) original burnout scale	Servant leadership mitigated nurse burnout and enhanced job satisfaction. Nurse burnout diminished job satisfaction; however, it did not directly affect turnover intentions or individual performance. Conversely, job satisfaction positively influenced individual performance and negatively affected turnover intentions.	8/8
Ma et al. [31]	Cross-sectional quantitative re-	Global Servant Leadership	Servant leadership (β = 0.318; 95% CI = 0.225,	8/8

2021 Pakistan	search design 443 nurses	Maslach Burnout Inventory-General Survey	0.416) and psychological safety (β = 0.342; CI = 0.143, 0.350) exhibited an inverse correlation with burnout among nurses, accounting for 63.1% of the variance. Servant leadership notably diminished burnout levels in nurses, while psychological safety served as a mediator in this correlation.	
Wu et al. [32] 2020 China	Quantitative, cross-sectional survey 391 nurse clinicians	Chinese translation of the Multifactor Leadership Questionnaire Maslach's Emotional Exhaustion Scale	The positive spirituality among nurse clinicians enhanced transformational leadership, which in turn mitigated emotional exhaustion (indirect effect of −0.089, p < .01). A significant positive correlation was found between burnout and the intention to leave, associated with lower levels of perceived spirituality (r = .545, p < .01). In the workplace, transformational leadership had the potential to alleviate burnout among nurses, while a positive spiritual environment fostered a greater sense of meaning in their professional roles.	8/8

3. Results

3.1 Search Results

A total of 5,891 titles and abstracts were screened with the following search results, Pub Med (1,835), Web of Science (405), CINAHL Plus (561), Scopus (232), Science Direct (2,564), and EBSCO through the SDL (294). After duplicates were removed, 5,132 records

remained. Titles and abstracts were reviewed for relevance with 153 studies subjected to further review. Out of the 153 studies, 138 were excluded with reasons (see Figure 1). In total, 15 studies were included in the final review and meta-analysis.

3.2 Study Characteristics

All 15 studies included in this review and meta-analysis employed a correlational, cross-sectional design, and utilized various research instruments to evaluate the burnout levels among clinical nurses. Twelve of these studies utilized the Maslach Burnout Inventory [11,19,20,23-28,30-32], whereas the other three studies used the Occupational Burnout Scale [21,22] and the Burnout Assessment Tool [29]. Furthermore, the following research tools were used to measure the positive leadership styles, which include the Authentic Leadership Questionnaire [26,27], Head Nurse Leadership Scale [21], Empowering Leadership Scale [22], Ethical Leadership Scale [25], Inclusive Leadership Scale [24], Nurse Managers' Paradoxical Leadership Scale [23], Global Servant Leadership Scale [28,31] and Servant Leadership Survey [11], and Transformational Leadership Domain of the Multifactor Leadership Questionnaire [30,32]. Meanwhile, the Authoritarian Leadership Component of the Paternalistic Leadership Scale were used in one study [20] and the Destructive Leadership Questionnaire in two studies [19,29] to assess the negative leadership styles of nurse managers.

Among the 15 studies included, six were carried out in China, encompassing a total of 4,015 nurse clinicians. This number of Chinese nurse clinicians specifically comprised 1,160 nurses [20], 579 nurses [21], 360 nurses [24], 1,204 nurses [28], 321 nurses [30], and 391 nurses [32]. Two studies were conducted in each of the following countries, including Pakistan comprising 212 nurses [22] and 443 nurse [31], and USA with 216 nurses [25] and 248 nursing professionals [11]. Additionally, one study was carried out in each of the following countries: Egypt, which had 314 nurses [23]; Finland, with 2,115 registered nurses [29]; Oman, comprising 160 emergency nurses [27]; Saudi Arabia, which included 166 registered nurses [19]; and South Africa, which was participated by 241 nurses [26].

3.3 Influence of Nurse Managers' Leadership Styles on Clinical Nurses' Burnout

This review indicated that nurse burnout is a subject of global study and reporting, with nurse leadership significantly contributing to its reduction. The present review primarily highlighted that increased levels of the positive leadership styles exhibited by nurse managers, significantly reduced the burnout faced by clinical nurses. Notably, the effect sizes indicated direct negative effects. Among these positive leadership styles are authentic leadership (β = -0.575, R^2 = 0.132) [26] and specifically in another study's two domains of authentic leadership in transparency of nurse managers (β = -0.481, R^2 = 0.570) [27] and ethical/moral conduct of nurse managers (β = -0.408, R^2 = 0.570) [27]. Other positive leadership styles include effective head nurse leadership (β = -0.031, R^2 = 0.266) [21], empowering leadership (β = -0.150, R^2 = 0.700) [22], ethical leadership (β = -0.390, R^2 = 0.230) [25], inclusive leadership (β = -0.199, R^2 = 0.692) [24], paradoxical leadership (β = -0.120, R^2 = 0.660) [23], servant leadership (β = -0.569, R^2 = 0.431) [28] as well as in two

other studies (β = -0.200, R^2 = 0.430) [11] and (β = -0.318, R^2 = 0.631) [31], and transformational leadership (β = -0.284, R^2 = 0.162) [30] and (β = -0.115, R^2 = 0.013) [32].

The findings of this review also indicated that a decrease in the levels of negative leadership styles significantly mitigated the burnout experienced by clinical nurses. The effect sizes indicated direct positive effects. These negative leadership styles include authoritarian leadership (β = 0.340, R^2 = 0.027) [20], and destructive leadership (β = 0.320, R^2 = 0.190) [29]. Notably, one study reported destructive leadership had significant direct positive effects on three domains of burnout, particularly on emotional exhaustion (β = 0.360, R^2 = 0.390), and depersonalization (β = 0.280, R^2 = 0.240), but direct positive effect on personal accomplishment (β = 0.34, R^2 = 0.330) [19].

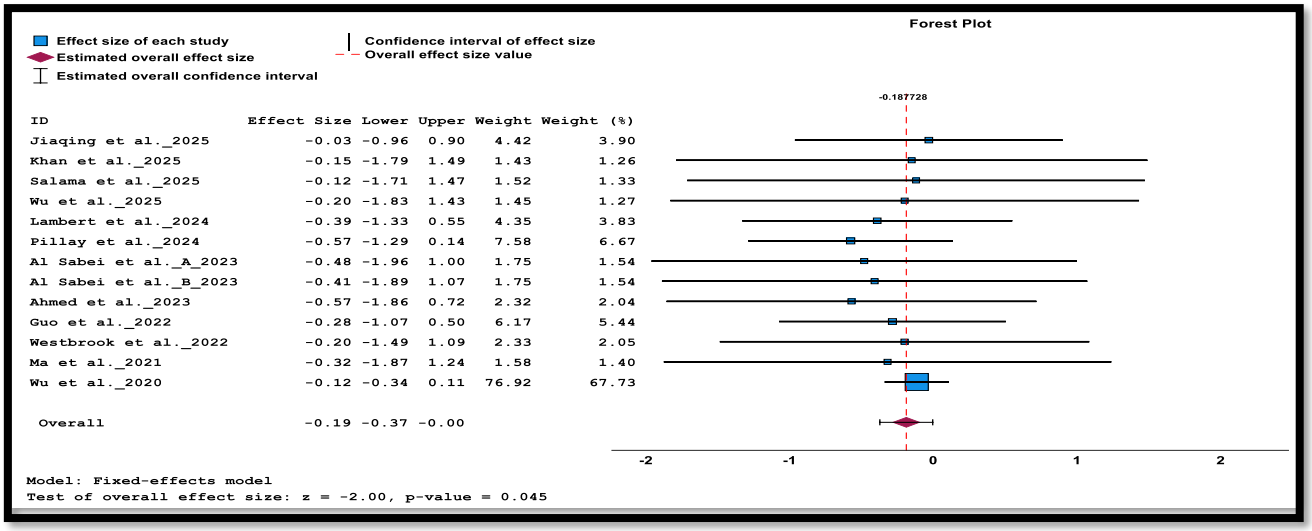
This review also indicated that various factors, both directly and indirectly, significantly contributed tothe reduction in burnout faced by clinical nurses. These factors encompass: formal support systems [19], organizational climate and psychological capital [20], job demands and job resources [21, 29], worka holism and psychological hardiness [22], organizational cynicism [23], professional identity and workplace social capital [24], and bullying at workplace [25]. Additional factors comprise a favorable work environment, managerial ability and support, and sufficient staffing and resources [27], along with psychological safety [28,31] and trust in the nurse leader [28], over qualification [30], job satisfaction and individual performance [11], and positive spiritual environment [32].

3.4 Meta-analysis Findings

In the meta-analysis of this current systematic review examining the impact of nurse managers' leadership styles on the burnout reported by clinical nurses, a total of 15 studies provided effect values. The effect values are conveyed through the unstandardized regression coefficient (β) values, which signify the direct measurement of the effect size and the direction of the correlation between the leadership styles of nurse managers and the burnout experienced by clinical nurses. These studies revealed significant findings regarding both the negative and positive direct effects of leadership styles on clinical nurses' burnout, as depicted in Figures 2 and 3 forest plots.

Specifically, Figure 2 depicts the significant findings regarding the negative impacts of various positive leadership styles—namely, authentic leadership [26,27], effective head nurse leadership [21], empowering leadership [22], ethical leadership [25], inclusive leadership [24], paradoxical leadership [23], servant leadership [11,28,31], and transformational leadership [30,32]—on the burnout experienced by clinical nurses. This is evidenced by the fixed-effects model, which indicates an overall effect size of -0.19 (CI = -0.37, -0.00; p = 0.045).

Figure 2. Forest plot on the negative influence of nurse managers' leadership styles on



Clinical nurses' burnout with a fixed-effects model

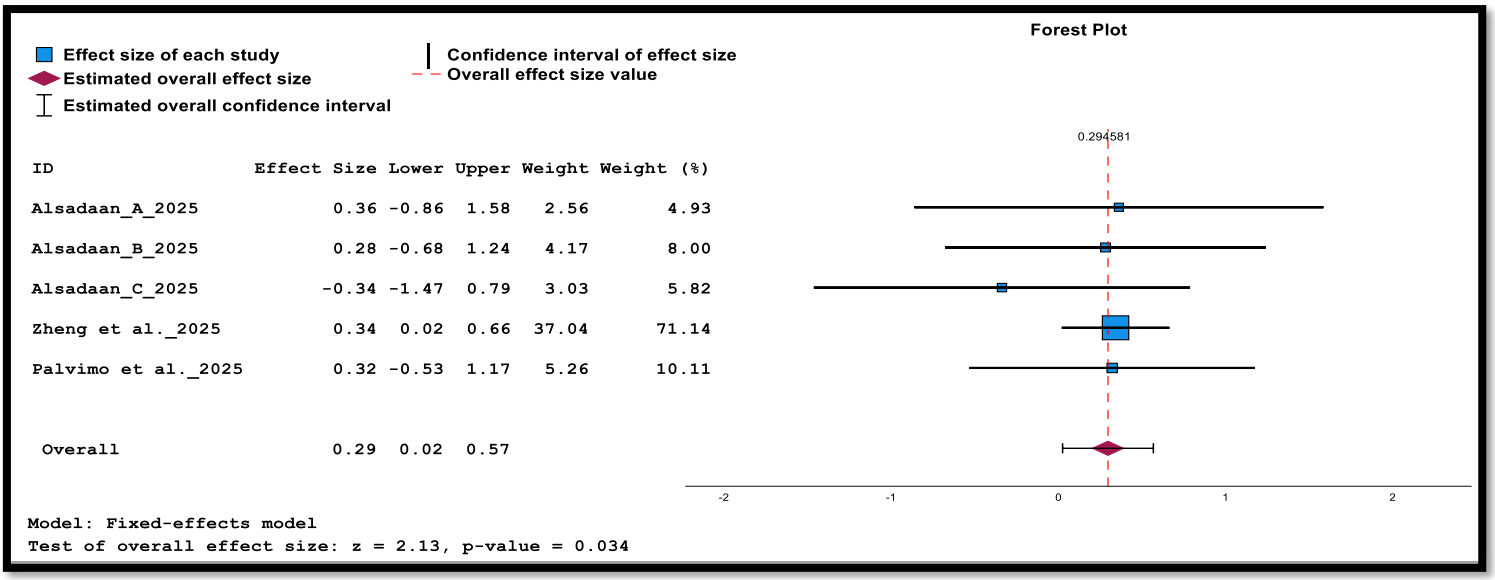
Note. ID = Identification of the study's author/s and year of publication.

Al Sabei et al._A_2023 = Influence of authentic leadership in transparency of nurse managers on clinical nurses' burnout.

Al Sabei et al._B_2023 = Influence of authentic leadership in ethical/moral conduct of nurse managers on clinical nurses' burnout.

The remaining three studies [19,20,29] showed significant results for the positive effectsof authoritarian and destructive leadership styleson clinical nurses' burnout, as demonstrated by the fixed-effects models shown in Figure 3 (overall effect size = 0.29; CI = 0.02, 0.57; p = 0.034).

Figure 3. Forest plot on the positive influence of nurse managers' leadership styles on clinical nurses' burnout with a fixed-effects model



Note. ID = Identification of the study's author/s and year of publication.
Alsadaan_A_2025 = Influence of destructive leadership of nurse managers on clinical nurses' burnout in emotional exhaustion.
Alsadaan_B_2025 = Influence of destructive leadership of nurse managers on clinical nurses' burnout in depersonalization.
Alsadaan_C_2025 = Influence of destructive leadership of nurse managers on clinical nurses' burnout in personal accomplishment.

4. Discussion

This systematic review and meta-analysis provided a quantitative evaluation of the evidence concerning the effects of nurse managers' leadership styles on the burnout levels experienced by clinical nurses globally. The review findings contribute to the existing body of literature, demonstrating a substantial amount of research that highlighted the significant influence of nurse managers' leadership styles, encompassing both negative and positive leadership behaviors/styles, on the burnout levels faced by clinical nurses. The findings of this review also imply that it is essential to further investigate strategies for mitigating the negative leadership styles exhibited by nurse managers, which in turn could lead to a decrease in the burnout levels faced by clinical nurses. This can contribute to the existing literature on this topic, as prior literature reviews [33,34] have highlighted a lack in studies on the negative leadership styles among nursing leaders.

In terms of the negative direct effects, these pertain to the inverse relationship between the positive leadership styles of nurse managers and the burnout experienced by clinical nurses. In other words, as the levels of positive leadership styles increase, the levels of burnout diminish. The inverse correlation between positive leadership styles and burnout could imply that fostering a supportive nursing work environment through positive leadership can contribute to a healthier workplace culture, thereby decreasing the prevalence of burnout among staff nurses. This resonates similarity to earlier research conducted among other professionals, such as teachers in Turkey, which indicated that authentic leadership, servant leadership, and transformational leadership contributed to a reduction in burnout [35]. In the field of nursing, this finding aligns particularly with prior review [9]. In addition, the results of the current meta-analysis exhibit similar findings to a prior study conducted in Canada, which indicated a negative direct effect of transformational leadership by nursing deans and directors on the burnout levels of their nursing faculty [13].

On the other hand, the positive direct effects pertain to the similar direction of relationship between the negative leadership styles of nurse managers and the burnout experienced by clinical nurses. In other words, as the levels of negative leadership styles decrease, the levels of burnout also diminish. This finding implies a crucial need to eliminate negative leadership styles among nurse leaders in the nursing profession to alleviate the burnout experienced by clinical nurses. This further could subsequently enhance the well-being of nurses, improve retention rates, and ensure the delivery of

high-quality patient care [19]. This finding of the current meta-analysis further implies that hospitals and their administrators should improve their comprehension of negative leadership behaviors or styles exhibited by nursing leaders and take measures to either inform others or enact essential enhancements, as also highlighted in the findings of recent prior research [33].

This systematic review and meta-analysis presents some limitations. The results are relevant exclusively to registered nurses working within hospital settings. However, despite the potentially stringent inclusion criteria, the sample consisted of a varied group of registered nurses from several countries, indicating possible relevance to a wider demographic of clinical nurses. In this review, the authors of the 15 studies included in the present meta-analysis were not contacted or reached out for additional information mainly due to concerns about time limitations, and potential delay and expenses. It is also crucial to highlight that this review was confined to studies published in English language. Consequently, pertinent research published in other languages may have been excluded. In addition, nurses working in other settings aside from the hospitals may also experience burnout, that this review may not have addressed. Lastly, although the 15 studies included in the final review were analyzed regarding the impact of nurse managers' leadership styles on the burnout levels experienced by clinical nurses, other factors that may directly or indirectly affect this relationship were excluded from the meta-analysis.

5. Conclusions

Overall, leadership can reduce burnout in clinical nurses by fostering positive leadership styles such as authentic leadership, effective head nurse leadership, empowering leadership, ethical leadership, inclusive leadership, paradoxical leadership, servant leadership, and transformational leadership. Concurrently, it is crucial to minimize or eliminate the practice of negative leadership styles of nurse managers, including authoritarian leadership and destructive leadership.

Furthermore, this systematic review and meta-analysis has uncovered both negative and positive direct impacts of nurse managers' leadership styles on the burnout levels of clinical nurses. Most of the studies included in this review have indicated the negative direct effects of positive leadership styles employed by nurse managers, which have led to beneficial outcomes in reducing the burnout experienced by clinical nurses. Additionally, although a small proportion of the included studies have reported on the positive direct effects associated with the negative leadership styles of nurse managers, they highlight that mitigating these effects has also contributed to a reduction in the burnout levels faced by clinical nurses.

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