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Review

Nurses' job embeddedness and turnover intention: A systematic review and meta-analysis

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ABSTRACT

Objective: This study aimed to review the relationship between job embeddedness and turnover intentions among nurses and explore the effects of the Job Embeddedness Scale, number of years in the career, education, and marital status on this relationship.
Methods: The review was conducted by searching the China Knowledge Resource Integrated Database (CNKI), Weipu Database (CQVIP), China Biology Medicine (CBM), Wanfang Database, PubMed, Web of Science, Embase, CINAHL, and APA-PsycNet for articles on nurses' job embeddedness and turnover from intention up to March 2024. The research quality was evaluated using the Agency for Healthcare Research and Quality (AHRQ) assessment criteria. The review protocol has been registered on PROSPERO [CRD42023483947].
Results: The results of this review included 47 studies consisting of 15,742 nurses from seven countries worldwide. A moderate negative correlation was found between job embeddedness and turnover intention (r = -0.487). Furthermore, on-the-job embeddedness (r = -0.527) was more negatively associated with turnover intention than off-the-job embeddedness (r = -0.234). The highest negative correlation was found between sacrifice and turnover intention (r = -0.460), while the lowest was for the link (r = -0.185). Furthermore, the relationship between job embeddedness and its dimensions with turnover intention was affected by different job embeddedness scales, number of years in the career, education, and marital status ($P < 0.05$).
Conclusion: This systematic review and meta-analysis analyzed the relationships between nurses' job embeddedness, dimensions, and turnover intention. Meanwhile, subgroup analysis and meta-regression explored the factors influencing these relationships. It is an important reference for nurse managers to promote nurse retention.

What is known?

- Job embeddedness (JE) is a strong predictor of turnover intention.
- The studies on the correlation between JE and nurse turnover intention demonstrate inconsistent results because of different types of measurement.
- Most studies have examined JE as an overall variable for turnover intention.

What is new?

- The correlation between JE and its dimensions and turnover intention was analysed.
- The multidimensional JE scales were stronger than the unidimensional JE scales in predicting nurses' turnover intention.
- On-the-job embeddedness is more strongly correlated with turnover intention than off-the-job embeddedness.

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1. Introduction

The global shortage of nurses should be treated as a public health emergency, with the pandemic from early 2020 acting as a multiplier to the demands on the global nursing workforce [1]. Furthermore, the global shortage of nurses is now in the millions. It is predicted that by 2030 the global shortage of nurses is estimated at 5.9 million [2]. The International Council of Nurses (ICN) [3] reports that nurses' turnover intentions have increased to 20% or more, and annual hospital turnover rates have risen to 10% or higher. Compared to other health workers, nurses have been at greater risk and are more likely to report burnout and turnover intentions.

Job embeddedness (JE) is a key predictor of turnover intention [4], diverging from the traditional attitude model that attributes employee retention and turnover to job attitudes and alternatives. Mitchell et al. [5] advanced the concept of this new construct to capture the integrated forces that keep employees stuck or embedded in their jobs. The concept of JE has been defined as "a broad set of influences on the employee's decision to stay on the job" [6], considering JE as a web in which an individual can get stuck and which can impact an individual's stay or leave their job [5].

Mitchell et al. [5] proposed that JE is composed of two subdimensions: on-the-job (organizational) embeddedness and off-the-job (community) embeddedness. They created a 2×3 matrix of the aforementioned dimensions. Six dimensions of JE were identified: on-the-job link, off-the-job link, on-the-job fit, off-the-job fit, on-the-job sacrifice, and off-the-job sacrifice. The degree to which employees are integrated into their organization and community is contingent upon these three dimensions. Holtom et al. [7] further articulates link (formal or informal connections between an employee and institutions or people), fit (an employee's perceived compatibility or comfort with an organization and with his or her environment), sacrifice (the perceived cost of material or psychological benefits that are forfeited by organizational departure).

Theories suggest that when JE is high, employees will fully engage in their job roles; when JE is low, employees will tend to stray from their roles, have negative attitudes towards their jobs, or even desire to leave. Currently, the studies on JE have mostly been limited to correlations with specific variables. Moreover, research into JE in nursing is still in its early stages. Several studies have shown that increasing nurses' JE can help to improve nurses' innovative work behavior, self-management, job satisfaction, professional identity, job performance, and work environment [8–11]. In addition, several studies [12,13] have investigated the relationship between JE and turnover intention, demonstrating considerable variation between studies. A prominent issue is that the two dimensions of JE (on and off-the-job embeddedness) have an inconsistent effect on nurse turnover. For example, Lee et al. [12] found that off-the-job embeddedness, but not on-the-job embeddedness, significantly predicted subsequent voluntary turnover, whereas Porter et al. [13] found the opposite. These inconsistent findings suggested conducting in-depth analyses of nurses' JE and turnover intentions is necessary. When Mitchell et al. [5] proposed the concept of JE and argued for a general view of the "web" that traps individuals in their organizations and communities without distinguishing the relative strengths and weaknesses of the three work-related forces. Lee et al. [12] further argue that the role of JE needs to be further discussed by exploring the effect of dimensionality on turnover intentions, which can help predict turnover and understand the internal mechanisms. Kim and Ryu [14] found that organizational fit and sacrifice significantly affected Korean nurses' turnover intention; Yao's study [15] demonstrated that the impact of job engagement dimensions on turnover intention varies across different career stages among Chinese nurses. There are differences in the results of other studies, and the relationship between JE and its dimensions and turnover intentions needs to be clarified. Therefore, this study's first research question is: what is the strength of the relationships between nurses' JE and its dimensions and turnover intention?

Given that JE is a complex concept, the variety of scales reflects different conceptualizations of JE and other mechanisms for explaining employee turnover. It is better to understand and evaluate the impact of measurement tools on the relationship between JE and nurses' turnover intentions to identify the factors inherent to nurse turnover through JE. Measurement tools for JE can be divided into multidimensional and unidimensional scales. The most commonly used multidimensional scale is the "Job Embeddedness Scale" developed by Mitchell et al. [5]. It has 40 items and six dimensions and was first administered to a sample of chain stores and hospital employees. Based on Mitchell et al. [5] and Lee et al. [12] framework of JE embeddedness, a Chinese version of the JE Scale for healthcare workers, was developed by Liang [16], a multidimensional scale with 37 items and six dimensions. The most commonly used unidimensional scale is the "Global Job Embeddedness Scale" developed by Crossley et al. [17], which has seven items, and Crossley argues that unidimensional scales are better predictors of turnover than multidimensional scales. In summary, due to the different measurement tools, there may be significant differences in the ability of the two types of JE scales to predict nurses' turnover intentions. The second research question of this study is: does the type of JE scale moderate the relationship between JE and turnover intention?

Previous research has indicated that JE is a significant antecedent in the formation of retention intention [18]. However, early reviews of JE and turnover intentions showed a wide range of correlations from −0.170 to −0.690 [19,20]. Thus, the relationship between nurses' JE and turnover intentions needs to be more conclusive. One review [18] focused on predictors of turnover intentions among Korean nurses but only reported the relationship between JE and turnover intentions without analyzing the relationship between different dimensions of JE and turnover intentions and did not perform subgroup analyses and meta-regressions of possible moderators. Given the lack of current research, the moderators of the relationship between nurses' JE and turnover intentions remain unclear. Therefore, this study conducted an exploratory analysis. Specifically, we conducted a comprehensive review of the relationship between JE and turnover intentions and extracted data on nurses' educational level, marital status, and years of career. The influences of these factors on the relationship were explored through meta-regression. The third research question of this study is: what factors influence the relationship between JE and turnover intentions among nurses?

2. Methods

2.1. Selection criteria

This study was reported by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) guidelines [21]. The protocol has been registered in PROSPERO [CRD42023483947].

The inclusion criteria for including the primary studies in this review were: 1) the study population was nurses; 2) the study investigated both nurses' JE and turnover intentions; 3) the research study reported correlation coefficients (r) between nurses' JE and its dimensions and turnover intentions, or provided t-value, F-value, χ^2-value, and linear regression β-value that could be transformed into r; and 4) the sample size was explicit. The

exclusion criteria were: 1) the study did not provide a clear definition of the relationship between JE and turnover intention, nor did it present data from nurses independently; 2) duplicated data; 3) the study reported incomplete data or unclear measurements; 4) the theoretical studies, qualitative studies and reviews and 5) full text is not retrievable.

2.2. Search strategy

Nine electronic databases were searched, including the China Knowledge Resource Integrated Database (CNKI), Weipu Database (CQVIP), China Biology Medicine (CBM), Wanfang Database, PubMed, Web of Science, Embase, CINAHL, and APA-PsycNet. The references of relevant studies were manually screened to identify other studies. Search terms included 'nurse,' 'nursing,' 'job embeddedness,' 'organizational embeddedness,' 'occupational embeddedness,' 'organizational embeddedness,' 'turnover intention,' 'intent to leave,' 'intention to leave,' 'intention to quit' and 'quit intention,' and Boolean operators such as 'AND' and 'OR' were used to construct the search strategy. The information on the search strategy is in Appendix A. Studies were searched from inception up to March 2024, and a total of 237 articles were retrieved. Using EndNote X9 software to import and manage the search results, the literature screening process is shown in Fig. 1.

2.3. Data extraction and coding

Two reviewers used data sheets (Microsoft Excel) to extract data independently from the final articles that were included. Any disagreements were resolved through discussion. The data extraction characteristics included the following: author, publication year, country, sample size, correlation coefficient, age, marriage, education level, career (year), JE scale, scale type, and study subjects. If the study did not report the correlation coefficient, but did report the *t*-value, *F*-value, χ^2-value, and unary linear regression β-value, the corresponding formula [$r = \sqrt{\frac{t^2}{t^2+df}}$; $r = \sqrt{\frac{F}{F+df_e}}$; $r = \sqrt{\frac{\chi^2}{\chi^2+N}}$; $r = \beta \times 0.98 + 0.05(\beta \geq 0)$; $r = \beta \times 0.98 - 0.05\ (\beta < 0)$] was used, which was converted into *r*-value before coding [22,23]. Furthermore, if the original literature only reported the Pearson correlation between turnover intention and the sub-dimensions of JE, we adopted the formula of $\left[r_{xy} = \frac{\sum r_{xy_i}}{\sqrt{n+n(n-1)\overline{r_{y_i y_j}}}}\right]$ to calculate the correlation coefficient between JE and turnover intention for coding [24]. The correlation coefficient *r*-value was transformed into Fisher's *Z* to approximate a normal distribution for data analysis. In addition, at the end of the study, the *Z*-value was converted into the *r*-value for interpretation of the results (Comprehensive Meta-Analysis V3 (CMA) software automatically performs the conversion between the Z-value and the r-value). Detailed data is available for download from the website (https://osf.io/vfwce/).

2.4. Assessment of quality

To assess the methodological quality of all articles on nurses' JE and turnover intention, we used the Agency for Healthcare Research and Quality (AHRQ) quality assessment criteria, which included 11 items to assess the quality of observational studies [25]. Each item is scored as 0 (no/uncertain) or 1 (yes), with a maximum score of 11. The higher the score, the higher the quality of the literature. A quality score between 1 and 3 is assessed as low quality, a score between 4 and 7 is assessed as medium quality, and a quality score between 8 and 11 is assessed as high quality. Two independent reviewers conducted the quality assessment, and any inconsistencies were resolved through discussion with a third reviewer.

2.5. Statistical analyses

CMA was used for meta-analysis and meta-regression. We used the I^2 and Cochran Q (χ^2) test for heterogeneity. I^2 values of 25%, 50%, and 75% represent low, medium, and high heterogeneity, respectively [26], and to construct either fixed effects or random effects model based on the heterogeneity of the results analyzed. A

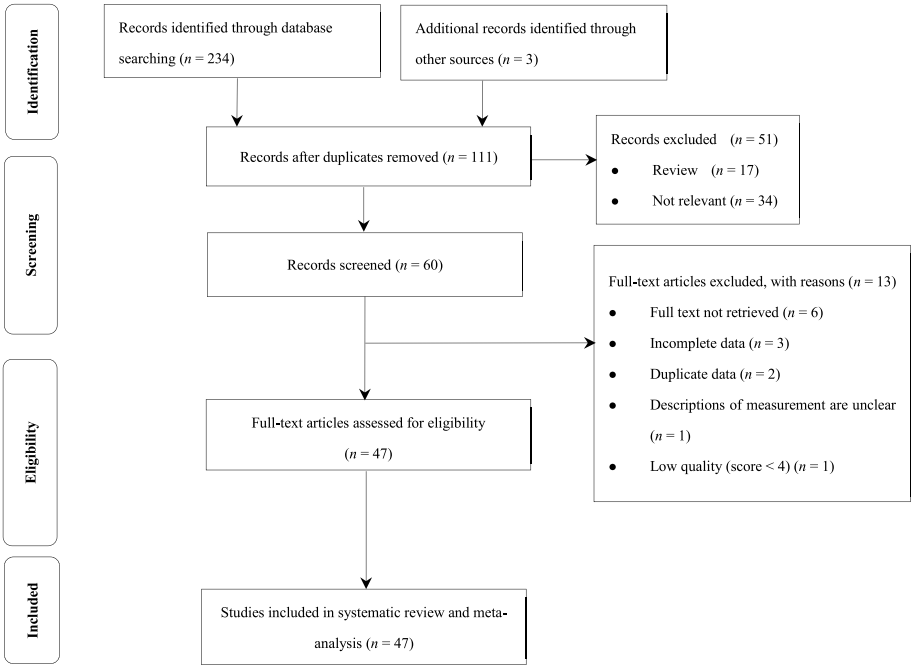

Fig. 1. Flowchart for selection of included studies.

random effects model was selected if the Q test result was significant or the I^2 value exceeded 75%. Conversely, a fixed effects model was selected [27]. We calculated the effect size using the effect size Fisher''s *Z* and the sample size. Cohen et al. [28] propose a scale for the strength of correlation coefficients. According to this scale, a coefficient with an absolute value of 0–0.1 (0.1 not included) is classified as weak, 0.1–0.3 (0.3 not included) as modest, 0.3–0.5 (0.5 not included) as moderate, 0.5–0.8 (0.8 not included) as strong, and 0.8 or higher as very strong. The correlation was considered significant if the 95% confidence interval (CI) did not include zero [29]. A sensitivity analysis was conducted using CMA software, and Egger's regression test [30] and fail-safe N [31] were used to assess publication bias. Subgroup analyses and meta-regression were conducted to explore the sources of heterogeneity [32,33]. Subgroup analyses aimed to compare the effects of categorical variables (different JE scales and scale types) on study effect sizes. To ensure the representativeness of studies within each subgroup, subgroup analyses should include at least three effects per subgroup [22]. Meta-regression was used to examine the effects of continuous variables (number of years in the career, rate of undergraduate and above education level, and married rate) on effect sizes. According to the requirements of CMA software, meta-regression for continuous variables should have at least four effects. Finally, we conducted meta-regression analyses of the different JE scales to explore differences in comparisons between subgroups.

3. Results

3.1. Study characteristics

A total of 234 studies were identified from nine databases and three from the reference lists. Finally, 47 articles were included in this review (Appendix B) [13,14,19,20,34–75]. Among these studies, the publication year was from 2004 to 2023. The total sample size was 15,742 nurses from 7 countries (America, Australia, China, Italy, Korea, Thailand, and the United Kingdom), all cross-sectional studies, and 13 different JE scales were adopted [5,12,16,17,41,52,58,76–80]. The correlation effect values for JE and turnover intention among nurses ranged from -0.170 to -0.690, the mean age of the nurses ranged from 26.50 ± 3.60 to 55.00 ± 6.00 years, and the mean number of years in the career ranged from 2.00 ± 1.27 to 16.82 ± 10.41 years. The marriage rate ranged from 8.7% to 80.7%, and the education (undergraduate and above) rate ranged from 14.7% to 100% (Appendix B).

3.2. Assessment of quality

Appendix B presents the results of the quality assessment conducted for each study. Thirty-two studies (68.1%) had a medium quality score of between 4 and 7, and 15 studies (31.9%) had a high quality score of between 8 and 9. All included studies achieved a score between 4 and 9; thus, all of them were included in the meta-analysis.

3.3. Correlations between job embeddedness and turnover intention

The results indicated that 47 studies extracted and coded a total of 48 effect sizes for the correlation between JE and turnover intention, and the overall effect size was moderate [r = -0.487 (95% *CI*: -0.520, -0.453), I^2 = 86.72, $P < 0.001$], in other words, JE and turnover intention were moderately negatively correlated as represented by the forest plot (Appendix C.). Among the six dimensions of JE, the correlation between off-the-job link, off-the-job fit, and off-the-job sacrifice and turnover intention was modest (r = -0.151, -0.190, -0.215), the correlation between on-the-job link and on-the-job fit and turnover intention was moderate (r = -0.318, -0.488), and the correlation between on-the-job sacrifice and turnover intention was strong (r = -0.505).

The correlation between on-the-job embeddedness and turnover intention (r = -0.527) was stronger than between off-the-job embeddedness and turnover intention (r = -0.234). Among the three work-related forces (link, fit, and sacrifice) of JE, the correlation between sacrifice and turnover intention was the most strongly (r = -0.460), and the link was least strongly (r = -0.185) correlated with turnover intention. Correlations between JE and its dimensions and turnover intentions' effect sizes, heterogeneity, and effect model results are in Appendix D.

3.4. Moderating effect test

3.4.1. Subgroup analyses

Subgroup analyses of the correlation between JE and turnover intention were conducted using the JE scale and scale types as moderating variables; the results are presented in Appendix E. A total of 40 effect sizes were included in seven categories with different JE scales as moderator variables. The results showed that the On-the-job Embeddedness Scale (OJES) had the highest correlation with turnover intention (r = -0.580), and the Global Job Embeddedness Scale (GJES) had the lowest correlation with turnover intention (r = -0.406), there were significant differences in the correlations between different JE scales and turnover intention (P = 0.011). Further subgroup analyses were conducted with JE scale types, and the results showed that scale types were significant moderators of the correlation between JE and turnover intention (P = 0.006), and the multidimensional scale (r = -0.502) was more strongly correlated with nurses' turnover intentions compared to the unidimensional scale (r = -0.366).

3.4.2. Meta-regression analyses

Meta-regression analyses were conducted to investigate the relationship between JE and its dimensions with turnover intention. The moderating variables included the year of career, undergraduate and above education level, and marriage rate. The results indicated that the number of years in the career moderated the relationship between on-the-job embeddedness and turnover intention (b = 0.039, 95%*CI* [0.015, 0.063], P = 0.002), rate of undergraduate and above education level significantly moderated the relationship between on-the-job link and turnover intention (b = -0.698, 95%*CI* [-1.038, -0.358], $P < 0.001$), and marriage rate significantly moderated the relationship between link and turnover intention (b = -0.681, 95%*CI* [-1.142, -0.220], P = 0.004), detailed results shown in Appendix F.

Finally, we conducted a meta-regression with different JE scales as variables (Appendix G.). Taking the CJES and the GJES as the reference groups, the degree of correlation between OJES and turnover intention was significantly stronger (b = -0.207, 95%*CI* [-0.394, -0.020], P = 0.030; b = -0.233, 95%*CI* [-0.408, -0.058], P = 0.009). All significant meta-regression results were visualized in Appendix H.

3.5. Publication bias and sensitivity testing

Publication bias showed that Egger's regression test for the study between JE and turnover intention was significant with an intercept of -3.921, 95%*CI* [-6.217, -1.625], P = 0.001, and the results of Egger's regression test for other studies were not significant; the effects of Fail-safe N showed that the correlation between all variables and turnover intention had fail-safe rates <1. Consequently,

publication bias was likely present in the analysis of the study between JE and turnover intention. However, there was no evident publication bias in the analyses of other studies. When each study was excluded from the sensitivity analysis, there was no significant difference in the pooled mean scores obtained, as shown in Appendix D.

4. Discussion

The correlation coefficient between JE and turnover intention among 15,742 nurses in seven countries was-0.487, indicating a moderate negative correlation. The correlation between on-the-job embeddedness and turnover intention was stronger than between off-the-job embeddedness and turnover intention. Among the three work-related forces of JE, sacrifice was most strongly correlated with turnover intention, while the weakest link correlated with turnover intention. Subgroup analyses found that the JE scale type was the moderating variable influencing the relationship between nurses' JE and turnover intention, and the multidimensional scale was more strongly correlated with nurses' turnover intention than the unidimensional scale. Meta-regression analysis indicated a significant influence of the number of years in the career on the relationship between on-the-job embeddedness and turnover intention. Furthermore, the relationship between on-the-job link and turnover intention was influenced by education level, and marital status significantly influenced the relationship between link and turnover intention.

4.1. Principal findings

This meta-analysis highlighted a moderate correlation between JE and turnover intention among nurses and a stronger correlation between on-the-job embeddedness and turnover intention compared to off-the-job embeddedness. The study supports Porter et al. [13] and Fasbender et al. [71] that on-the-job embeddedness is more predictive of turnover intentions than off-the-job embeddedness. This could be due to the high degree of homogeneity among employees in the same regions regarding housing, health care, education, and benefits. Thus, the important role of on-the-job factors in reducing turnover while keeping off-the-job factors constant [38]. Among the relationships between the three work-related forces of JE and turnover intention, sacrifice and fit have moderate correlations, and the link has the weakest correlation, similar to the results of Kang and Kwon [49] and Ko and Lee [60]. Research has shown that employees who are better fitted to their organizations, communities, and environment and derive greater benefit from their organizations and communities are less likely to leave. That explains why sacrifice and fit have strong predictive power for turnover intention. The weak correlation between links and turnover intention in nursing may be due to the authoritative nature and hierarchical structure [14], which often results in horizontal violence [81]. As a result, nurses may experience greater difficulty establishing connections with their colleagues. Nursing administrators are advised to promote the development of a positive clinical work environment through activities such as gatherings, outside work activities, and so on. These activities can help nurses establish positive relationships with colleagues. Furthermore, aligning the organization's goals and values with the nursing staff is important to foster a sense of belonging and ultimately increase nurse retention [82].

4.2. Subgroup analysis and meta-regression findings

The study synthesized findings from subgroup analyses and meta-regressions to investigate the impact of different JE scales on the linkage between JE and turnover intention. It was concluded that different JE scales affected the relationship between JE and turnover intention, with the multidimensional scale showing a notably stronger correlation with turnover intention than the unidimensional scale. The discrepancies observed in the strength of the relationship may be attributable to variations in the validity of the distinct JE scales. The unidimensional scale may not capture critical factors, leading to construct deficiencies and a subsequently attenuated prediction of turnover intention [83]. Furthermore, meta-regression results have indicated that the OJES has a more substantial correlation with turnover intention than the Chinese Job Embeddedness Scale (CJES) and the GJES. Such findings echo previous results, reinforcing that on-the-job embeddedness is a paramount predictor of turnover intention. Some studies by Guo [41] and Sim et al. [68] examined on-the-job embeddedness as job embeddedness and developed the OJES [58] for predicting turnover intention based on the scale of Mitchell et al. [5], which may be one reason for the different relationship between job embeddedness and turnover intention.

Our study revealed that the relationship between on-the-job embeddedness and turnover intention was weaker with working years increasing. This result is consistent with previous study [15]. There are different capacities of on-the-job embeddedness in predicting turnover intention in various career stages. As working years increased, nurses adapted to their jobs, and the relationship between nurses and their organizations became stable. At this stage, they are more committed to maintaining their status and achievements within the organization and are more concerned about maintaining a work/family balance. In other words, newly recruited nurses' on-the-job embeddedness can predict turnover intentions more remarkably. Therefore, nursing managers should provide newly recruited nurses with skills training and personal development opportunities, strengthening their relationship with the organization and promoting on-the-job embeddedness, ultimately increasing retention [84].

Educational background has a significant moderation effect on the relationship between on-the-job link and turnover intention. A stronger relationship between the two variables is associated with a higher proportion of nurses holding undergraduate and above education levels. You et al. [85] found that nurses with higher educational backgrounds were more likely to be competent in their nursing role to undertake more advanced work, research, and academic tasks. They were also more likely to develop professional identity and on-the-job embeddedness. In other words, individuals with higher educational backgrounds demonstrated greater nurse on-the-job embeddedness, which may be a stronger negative predictor of turnover intention. For highly educated nurses, managers should empower them appropriately, involving them in some work and research group activities [86], undertaking some management and operational work related to the department, and encouraging them to provide advice in management programs [87]. Consequently, enhancing their connection to the workplace is more likely to reduce their turnover intentions.

Finally, our study found that marital status moderated the relationship between link and turnover intention, with the link being a stronger predictor for turnover intention among married nurses. Considering the reasons for this, marital status represents a significant aspect of nurses' connections to their organizations and communities, and marriage reinforces these bonds [5]. Moreover, being married is a protective factor against leaving the profession [88]; married nurses benefit from more familial and socio-emotional support, which helps maintain positive relationships within their organizations and communities, thereby reducing burnout and the intention to leave. Therefore, nursing managers should pay particular attention to unmarried nurses, offering them

appropriate employment guidance and assisting them in their career planning [89]. At the same time, policymakers should focus on improving the community link among married nurses, such as focusing on their children's schooling, spouse's employment, and housing issues, which will help increase nurses' job embeddedness and reduce their turnover intention.

4.3. Strengths and limitations

Our review has several strengths. This study is the first systematic review and meta-analysis examining the relationship between job embeddedness and nurse turnover intention. We included comprehensive literature, performed a robust search through 9 databases, searched the gray literature, and screened the bibliographies of relevant papers. In addition, we used subgroup analyses and meta-analyses in this review to explore heterogeneity and the moderators that influence the relationships among various variables. While the review also has several limitations. First, most of the selected studies were conducted in Eastern countries, with only eight studies conducted in the Americas, the United Kingdom, and Italy, and the results may not represent a global phenomenon. Second, the included studies used different research tools, which resulted in extreme values in the coded data, and therefore, the Egger test reported some publication bias in the studies [30]. Finally, some of the meta-regressions included a small number of studies, so the results may be due to chance.

4.4. Implications for future research

This review showed that the multidimensional JE scale was stronger than the unidimensional JE scale in predicting nurses' turnover intention, and most studies have examined JE as an overall variable for turnover intention. However, as JE is a complex concept, future research is expected to investigate the prediction of the different dimensions of JE on turnover intention to identify further the driving force of embeddedness in nurses' retention. In addition, the moderating effects of the relationship between JE and turnover intention among nurses are unclear, and few studies have examined the moderating variables of this relationship. Therefore, future research should explore how JE affects turnover intentions. All existing JE scales do not specifically consider nurses' JE, and the link dimension has weak predictive power of turnover intention. Therefore, further development of the nurses' JE scale is needed to reflect the prediction of nurses' JE on turnover intention.

5. Conclusion

In conclusion, the meta-analysis showed that the effect size of the relationship between JE and nurse turnover intentions was −0.487. The relationship between on-the-job embeddedness and turnover intention is stronger than that between off-the-job embeddedness. Among the three work-related forces, sacrifice and turnover intention have the strongest relationship. The types of JE scale significantly affected the correlation between JE and turnover intention, and the relationship between the multidimensional scale and turnover intention is stronger than for the unidimensional scale, as confirmed by the subgroup analysis results. Finally, given the results of the meta-regressions, we find that the relationship between on-the-job embeddedness and turnover intention is significantly influenced by number of years in the career, and the relationship between on-the-job link and turnover intention is significantly affected by the rate of undergraduate and above education level. In addition, marriage significantly affects the relationship between link and turnover intention.

CRediT authorship contribution statement

Xin Wang: Methodology, Data curation, Formal analysis, Writing - original draft. **Ming Liu:** Conceptualization, Methodology, Project administration, Supervision, Writing - review & editing. **Angela Y.M. Leung:** Supervision, Writing - review & editing. **Xiaoyan Jin:** Methodology, Data curation. **Hongxia Dai:** Validation, Data curation. **Shaomei Shang:** Supervision, Writing - review & editing.

Data availability statement

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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Declaration of competing interest

The authors declare no conflict of interest regarding this article.

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Appendices. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijnss.2024.10.003.

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