DOI: 10.1111/jonm.12509

ORIGINAL ARTICLE

WILEY

When nurse emotional intelligence matters: How transformational leadership influences intent to stay

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Funding information

The research was funded by Shanghai Municipal Education Commission (no. 14YS023); and by Shanghai Municipal Health and Family Planning Commission (no. 20134Y041); and by National Social Science Foundation (no. 16BGL102). **Aim:** The purpose of this study was to examine the role of staff nurse emotional intelligence between transformational leadership and nurse intent to stay.

Background: Nurse intent to stay and transformational leadership are widely recognized as vital components of nurse retention. Staff nurse emotional intelligence that has been confirmed improvable has been recently recognized in the nursing literature as correlated with retention. Yet, the nature of the relationships among these three variables is not known.

Methods: Cross-sectional data for 535 Chinese nurses were analysed using Structural Equation Modelling.

Results: Transformational leadership and staff nurse emotional intelligence were significant predictors of nurse intent to stay, accounting for 34.3% of the variance in nurse intent to stay. Staff nurse emotional intelligence partially mediates the relationship between transformational leadership and nurse intent to stay.

Conclusion: The findings of the study emphasized the importance of transformational leadership in enhancing nurse emotional intelligence and to provide a deeper understanding of the mediating role of emotional intelligence in the relationship between nurse manager's transformational leadership and nurse's intent to stay.

Implications for Nursing Management: Nurse leaders should develop training programmes to improve nursing manager transformational leadership and staff nurse emotional intelligence in the workplace.

KEYWORDS

emotional intelligence, nurse intent to stay, transformational leadership

1 | INTRODUCTION

The World Health Organization announced recommendations for effective solutions to the international nursing shortage, requiring action at multiple levels, from global health policy to individual nursing unit manager actions (Buchan & Aiken, 2008). The global nursing shortage is one of the most concerning issues in health care today. The nursing shortage is associated with a substantial reduction in health care quality, as nurses deliver the majority of patient care across settings (Chang et al., 2015; D'Ambra & Andrews, 2014; Oulton, 2006). A high nurse turnover rate is one important factor contributing to this ongoing nurse shortage (Hayes et al., 2012; Tian, 2011). A partial solution to the nurse shortage would be to retain the nurses who are already in the workforce. To achieve this, a better understanding of what might influence nurse turnover is necessary.

Studies of leadership style in nursing and other disciplines have documented a high correlation with employee turnover (Green, Miller, & Aarons, 2013; Lavoie-Tremblay, Fernet, Lavigne, & Austin, 2016). Transformational leadership has been consistently correlated with significantly lower nurse turnover rates (Failla & Stichler, 2008) and emotional intelligence has been found to have a significant mediating effect on both transformational leadership style and employee workplace behaviours (Xiao, Zhao, & Luo, 2016).

Emotional intelligence is defined as "the ability to monitor one's own and other's feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990; Zhu, Liu, Guo, Zhao, & Lou, 2015). Law, Wong, and Song (2004) confirmed that emotional intelligence was conceptually a distinct personality trait, consisting of a set of abilities that a person can use to understand, regulate, and make use of his or her emotions, and that it can be learned and modified. Employee emotional intelligence has also been associated with turnover in education and manufacturing with increasing employee emotional intelligence correlated with decreased burnout and lower turnover rates (Alavinia & Ahmadzadeh, 2012; Jordan & Troth, 2011; Karakus, 2013). Research on the relationship between staff nurse emotional intelligence and retention/turnover is very limited, but initial findings suggest that emotional intelligence correlate positively with both performance level and retention (Codier, Kamikawa, Kooker, & Shoultz, 2009) and that improving emotional intelligence reduces the incidence of chronic stress and occupational burnout (Mansoor, Fida, Nasir, & Ahmad, 2011). The mediating and/or moderating effect of emotional intelligence on staff retention/burnout has been documented in two studies of nurses (Baik & Yom, 2012; Görgens-Ekermans & Brand, 2012) and other healthcare providers (Ford, 2010). The purpose of this study was to examine the role of staff nurse emotional intelligence on the relationship between transformational leadership and nurse intent to stay, using the ability model of emotional intelligence.

1.1 | Transformational leadership and nurse intent to stay

Transformational leadership is characterized by practices that inspire workers by building on their subordinates' values, beliefs, attitudes, and motivations (Lewis & Cunningham, 2016). Transformational leadership is composed of four dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass, Avolio, Jung, & Berson, 2003). Nurse intent to stay (ITS) is the probability of an individual staying in the current job (Gregory, Way, LeFort, Barrett, & Parfrey, 2007), and is determined by measuring nurses' perceptions of their likelihood of staying for a specified time (McCloskey & McCain, 1987). Evidence supports a positive relationship between nurse managers using a transformational leadership style and nurse ITS (Lavoie-Tremblay et al., 2016; Weberg, 2010). Nurse manager transformational leadership has a positive influence on nurses' well-being, job satisfaction, and nurse retention (Roberts-Turner et al., 2014). The transformational leadership style of nurse managers also has been shown to improve the quality of care by increasing patient satisfaction, reducing patient mortality, and medication errors (Wong, Cummings, & Ducharme, 2013).

1.2 | Emotional intelligence and nurse intent to stay

Emotional intelligence has been conceptualized using three distinct models.

The mixed or performance model was developed in 1998 and defined as a wide array of competencies that were not innate talents, but rather learned capabilities that must be worked on and could be developed to achieve outstanding performance (Goleman, 1998).The trait model was developed in 2001 and encompassed behavioural dispositions and an individual's self-perceptions of their emotional abilities (Petrides & Furnham, 2001). The ability model was developed in 2004 and emphasized the individual's ability to process emotional information and use it to navigate the social environment (Mayer, Salovey, & Caruso, 2004). This ability is seen to manifest itself in certain adaptive behaviours. Many recent researchers have confirmed that emotional intelligence can be increased through appropriate training (Sharif, Rezaie, Keshavarzi, Mansoori, & Ghadakpoor, 2013; Slaski & Cartwright, 2003; Ulutas & Omeroglu, 2007), that supports the ability of emotional intelligence to be improved. Research consistently identifies that employee emotional intelligence and retention are associated with each other, (Judeh, 2013, Carmeli, 2003; Jordan & Troth, 2011) that focused on the relationship between emotional intelligence and turnover intentions.

In a study of frontline staff at a large healthcare organization, Ford (2010) found a positive relationship between emotional intelligence and job satisfaction; that is staff with higher emotional intelligence were more optimistic and demonstrated more positive relationships through the use of emotions for problem-solving and control of emotional reactions (Vakola, Tsausis, & Nikolaou, 2004). Employees with high emotional intelligence had healthier and happier lives (Akerjordet & Severinsson, 2007; Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007). Research examining the relationship between staff nurse emotional intelligence and ITS is lacking.

1.3 | Transformational leadership and emotional intelligence

Research examining the relationship between transformational leadership and emotional intelligence in managers consistently indicates that manager emotional intelligence is positively related with transformational leadership in nursing and other fields (Sayeed & Shanker, 2009; Spano-Szekely, Quinn Griffin, Clavelle, & Fitzpatrick, 2016; Tyczkowski et al., 2015). However, one recent study (Xiao et al., 2016) on airline employees reveals a direct, positive association between transformational leadership and employees' emotional intelligence, suggesting a similar effect that a manager's transformational leadership may have a positive impact on staff nurses' increase in emotional intelligence.

1.4 | Theoretical framework

Overall, research on the impact of staff nurse emotional intelligence on nurse ITS and the relationship between transformational leadership and nurse ITS is still underexplored. The present study examines the mediating role of staff nurse emotional intelligence on the relationship between managers' transformational leadership and staff

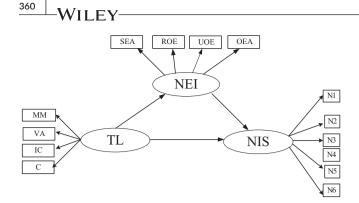


FIGURE 1 The theoretical framework for this study. NEI, nurse emotional intelligence; TL, transformational leadership; NIS, nurse intent to stay; SEA, self emotional appraisal; ROE, regulation of emotion; UOE, use of emotion; OEA, other's emotion appraisal; MM, moral modeling; VA, vision articulation; IC, individualized consideration; C, Charisma; N1–N6, the items of nurse intent to stay

nurse intent to stay. Based on a review of the literature, we created a theoretical framework (Figure 1) to test the following three hypotheses: (1) Transformational leadership has a positive influence on staff nurse emotional intelligence; (2) Staff nurse emotional intelligence has a positive influence on staff nurse intent to stay; and (3) staff nurse emotional intelligence will mediate the relationship between transformational leadership and nurse intent to stay.

2 | METHODS

2.1 | Design and data collection

This study utilized cross-sectional descriptive design. Data were collected by a self-report survey questionnaire between May and August 2015. The survey was reviewed and approved by the Institutional Review Board of Shanghai Jiao Tong University.

2.2 | Sample

A convenience sample of 623 nurses was recruited, with a response rate of 85.9% (n = 535).

2.3 | Setting

Participants were registered nurses from four general hospitals in Shanghai, China. Inclusion criteria were nurses who had been working full-time for at least 1 year at the study hospitals and agreed to be a participant. The survey, distributed by the head nurse of each department, included a cover letter and survey items. The cover letter described the study goal, assured anonymity, emphasized the voluntary nature of participation, and instructed participants to return completed questionnaires in accompanying envelopes via collection boxes placed in centrally located nursing offices. Implied consent was used by the statement "A signature is not required and completion of the survey will imply agreement to participant in the study".

2.4 | Measures

The survey included demographic questions and scales measuring staff nurse emotional intelligence, intent to stay and staff nurse's perceptions of manager's transformational leadership.

Emotional intelligence was measured by the Wong and Law Emotional Intelligence Scale (WLEIS) (Law et al., 2004). WLEIS is a 16item scale consisting of four subscales, which includes Self Emotion Appraisal (e.g., "I really understand what I feel"), Regulation of Emotion (e.g., "I can always calm down quickly when I am very angry"), Use of Emotion (e.g., "I would always encourage myself to try my best") and Other's Emotion Appraisal (e.g., "I have good understanding of the emotions of people around me"). Responses are scored on a 5-point Likert scale with 1 = strongly disagree and 5 = strongly agree. The WLEIS has been validated by many studies with the internal consistency reliability coefficients ranging from .69 to .84 (Zhu et al., 2015). In the present study, the Cronbach's alpha was .860 for the scale and ranged from .80 to .89 for the subscales.

The staff nurse's perception of transformational leadership was measured by the Chinese version of the transformational leadership scale (Li & Shi, 2005). Transformational leadership scale is a 26-item scale consisting of four subscales, which include moral modeling (e.g., "My leader is morally clean and corruption-free"), individualized consideration (e.g., "My leader is ready to help employees and their families"), vision articulation (e.g., "My leader helps employees understand the management philosophy, vision, and mission of the organization") and charisma (e.g., "My leader takes immediate and firm actions to solve problems"). The reliability established by previous studies is high with a range of 0.91 to 0.94. The Cronbach's alpha was .90 for this study and ranged from .89 to .92 for the subscales.

The nurse ITS scale developed by Tao and Wang (2010) was adopted to measure nurses' intent to stay. The scale comprises six items (e.g., "I will consider continuing in the current job as a nurse"). The ITS scale has been widely adopted in measuring the nurse intent to stay in China. The original internal consistency reliability was .78. The Cronbach's alpha for this study was .79.

2.5 | Statistical analysis

Statistical analyses were performed using SPSS version 23.0 (SPSS Inc., Chicago, IL, USA) and Mplus Version 7.11 (Muthen & Muthen, 1999–2013). The level of statistical significance was set at .05. Descriptive statistics were used to analyse the demographic characteristics, the level of transformational leadership, emotional intelligence and nurse intent to stay. Structural equation modelling was used to test whether emotional intelligence mediated the relationship between transformational leadership and nurse intent to stay. Age was controlled for in the structural equations for each endogenous variable in the structural model. This study used Maximum likelihood (ML) estimation methods. The goodness of model fit was examined using a ratio of Chi-square (χ^2/df), comparative fit index (CFI), the Tucker–Lewis index (TLI) and the root-mean-square error of approximation (RMESA).

3 | RESULTS

3.1 | Demographic characteristics

Most respondents were female (n = 526, 98.3%). The average age was 32.75 years (SD = 8.88) and ranged from 19 to 57. The mean years of employment was 12.20 years (SD = 89.59) and ranged from 2 to 38. The majority of respondents (n = 312, 58.3%) had an associate's degree or nursing diploma degree (n = 171, 32%). The proportion of nurses being married (n = 325, 60.7%) was larger than single nurses (n = 197, 39.3%). In terms of job title, the proportions of junior nurses (n = 230, 43.0%) and senior nurse (n = 217, 40.6%) were about equal. In addition, 65.0% of respondents were permanent nurses whereas 35.0% had a temporary employment (Table 1).

3.2 | Transformational leadership

The mean score for transformational leadership was 4.23 (*SD* = 0.67). Among the four subscales of the transformational leadership scale, charisma scored highest (M = 4.27, SD = 0.72), followed by moral modelling (M = 4.25, SD = 0.77) and individualized consideration (M = 4.23, SD = 0.70), with the subscale vision articulation (M = 4.03, SD = 0.77) scoring lowest (see Table 2).

3.3 | Emotional intelligence

The mean score for emotional intelligence was 3.99 (SD = 0.66). Among the four subscales, the self-emotion appraisal was rated highest (M = 4.24, SD = 0.65), followed by regulation of emotion (M = 4.01,

TABLE 1	Demographic characteristics	of respondents
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Variable	n	%
Gender		
Male	9	1.7
Female	526	98.3
Educational level		
Diploma	171	32.0
Associate degree	312	58.3
Bachelor degree and above	52	9.7
Marital status		
Single	197	36.8
Married	325	60.7
Separated/divorced or widowed	13	2.5
Job title		
Primary nurse	88	15.4
Junior nurses	230	43
Senior nurse	217	41.6
Employment types		
Permanent	348	65
Temporary	187	35

TABLE 2 Nurse perceived transformational leadership inMainland China (n = 535)

Transformational leadership	М	SD
Moral modelling	4.25	0.77
Vision articulation	4.16	0.73
Individualized consideration	4.23	0.69
Charisma	4.27	0.71
Overall transformational leadership	4.23	0.67

TABLE 3	Emotional intelligence among nurses in Mainland China
(n = 535)	

Emotional intelligence	М	SD
Self-emotion appraisal	4.24	0.65
Other's emotion appraisal	3.86	0.86
Regulation of emotion	4.01	0.75
Use of emotion	3.84	0.83
Overall emotional intelligence	3.99	0.66

SD = 0.75), the subscale use of emotion (M = 3.84, SD = 0.83) had the lowest scores (see Table 3).

3.4 | Nurse intent to stay

The score of intent to stay ranged from 1.67 to 5, with a mean of 3.85 and an SD of 0.82.

3.5 | Testing the hypothesized model

As depicted in Figure 2, transformational leadership, nurse emotional intelligence and nurse intent to stay were presented as latent variables in the structural model. Specifically, the subscales of transformational leadership (moral modelling, vision articulation, individualized consideration and charisma), nurse emotional intelligence (self-emotion appraisal, regulation of emotion, use of emotion and other's emotion appraisal) and nurse intent to stay (item N1 through to item N6) were presented as the observed variables in the structural model. All parameters are standardized based on the raw (b) coefficients: StdYX(b) = b*SD(X)/SD(Y) (Muthen & Muthen, 1999-2013). All factor loadings were statistically significant, with standardized loadings ranging from .64 to .93. Values of χ^2/df (4.19) <5, RMSEA(.077) <.08, CFI(.950) and TLI(.938) larger than .09 indicates a good model fit. Transformational leadership was positively correlated with nurse emotional intelligence and nurse intent to stay with the standardized pathway coefficient of .663 and .375, respectively. Nurse emotional intelligence was positively correlated with nurse intent to stay with the standardized pathway coefficient of .168.

Table 4 shows the unstandardized (β) and standardized ($\beta^* = \beta \times (SD(X)/SD(Y))$ parameter coefficients, standard errors, *p*-values, and confidence intervals of the individual paths of transformational leadership to the mediators and to nurse intent to stay, as

0.42

0.54

0.43

0.37

0.55

0.30

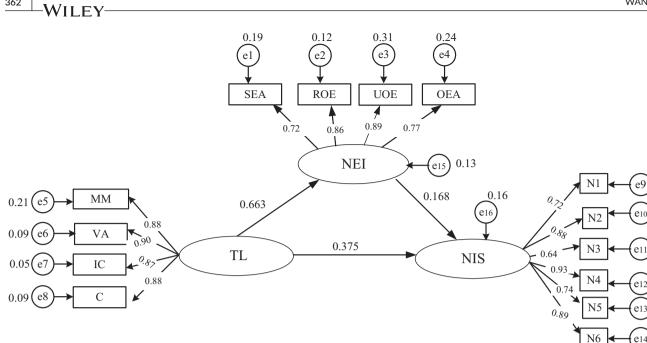


FIGURE 2 The final structural model with standard path coefficients. NEI, nurse emotional intelligence; TL, transformational leadership; NIS, nurse intent to stay; SEA, self emotional appraisal; ROE, regulation of emotion; UOE, use of emotion; OEA, other's emotion appraisal; MM, moral modeling; VA, vision articulation; IC, individualized consideration; C, Charisma; N1-N6, the items of nurse intent to stay

		β (SE)	β*	р	95% CI
Direct effect paths	TL → NEI	0.472 (0.046)	0.663	0.000	0.594, 0.729
	TL → NIS	0.426 (0.068)	0.375	0.000	0.269, 0.478
	NEI -> NIS	0.268 (0.107)	0.168	0.009	0.038, 0.290
Indirect effects	TL→NEI→NIS	0.127 (0.050)	0.111	0.011	0.025, 0.197
Total effects	TL → NIS	0.552 (0.051)	0.486	0.000	0.420, 0.554

TABLE 4 Effect paths of transformational leadership on nurse intent to stay (n = 535)

β, unstandardized parameter estimate; β*, standardized parameter estimate; CI, confidence interval; TL, transformational leadership; NEI, nurse emotional intelligence; NIS, nurse intent to stay.

well as the total effects, and total indirect effects of transformational leadership on nurse intent to stay. As predicted, transformational leadership had a positive effect on nurse emotional intelligence (β = .663), which in turn had a direct positive influence on nurse intent to stay $(\beta = .375)$. There was a direct positive effect of nurse emotional intelligence on nurse intent to stay (β = .168). In addition, transformational leadership had an indirect effect on nurse intent to stay through the mediator of nurse emotional intelligence and the mediator value was .111 (.663*.168 = .111). Therefore, the total effect of transformational leadership on nurse intent to stay was .486 (.375 + .111 = .486), and the indirect effect made up 22.8% of the total. Overall, transformational leadership and nurse emotional intelligence accounted for 34.3% of the variance in nurse intent to stay.

DISCUSSION 4

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This study examined the relationships among transformational leadership, nurse emotional intelligence and nurse intent to stay, using the ability model of emotional intelligence. As hypothesized, our findings supported the significant effects of transformational leadership on staff nurse emotional intelligence. Both transformational leadership and nurse emotional intelligence had significant effects on nurse intent to stay. Additionally, as hypothesized, nurse emotional intelligence had a partial but important mediating role between transformational leadership and nurse intent to stay. Nurses who possessed higher levels of emotional intelligence and/or worked for a manager with a transformational leadership expressed greater intent to stay. It is concluded that transformational leadership, directly and indirectly, affects nurse intent to stay.

This study reported that transformational leadership style positively correlated with nurse intent to stay, which may be explained by the following: Transformational leadership (1) provides intellectual stimulation that encourages the staff nurse to be more creative and increases their feelings of self-worth; (2) creates a positive organizational climate that has an impact on development of nurse's empowerment, regarding their engagement in the work, and their self-efficacy; and (3) transmits the message that the leader believes in the nurse's integrity

and ability, which motivates the nurse to be cooperative, loyal, and committed (Jung, Chow, & Wu, 2003; Kark & Shamir, 2002; Shin & Zhou, 2003). Rivers, Pesata, Beasley, and Dietrich (2011) also showed that transformational leaders encouraged and facilitated nurses to use evidence-based practice by providing substantial support to nurses thereby increasing nurse retention. This finding has implications for nurse managers in that implementing transformational leadership may be an effective strategy for enhancing nurse intent to stay and improving care quality. Training nurse managers in transformational leadership skills may be necessary to promote nurse retention (Hughes, Avey, & Nixon, 2010).

Most significantly, this study confirms the significant direct effects of manager transformational leadership on nurse emotional intelligence. Several studies previously demonstrated significant positive correlations between manager's transformational leadership and manager's emotional intelligence in nursing (Sayeed & Shanker, 2009; Spano-Szekely et al., 2016). However, our study focused on the impact of managers' transformational leadership on staff nurse emotional intelligence and provided new evidence of the importance of manager's transformational leadership and nurse emotional intelligence. This finding confirmed that the emotional intelligence could be improved, consistent with previous research (Sharif et al., 2013; Ulutas & Omeroglu, 2007). This finding has implications for nurse administrators and human resource managers that training nurse managers to use transformational leadership could be an effective strategy for enhancing nurse emotional intelligence. Development and application of transformational leadership among nurse managers could be an important strategy for increasing the level of nurse emotional intelligence. Another implication could be for hospital/organizations to ensure that nurse managers have opportunities to obtain training on transformational leadership as this is essential for enhancing nurse emotional intelligence.

The hypothesis that nurse emotional intelligence had significant direct effects on nurse intent to stay was confirmed by this study. Emotional intelligence may be involved in how nurses respond to their emotions and in their decision about remaining in the nursing profession. An explanation for this may be related to the definition of emotional intelligence used in this study, which consists of a set of abilities that a person uses to understand, regulate, and make use of his or her emotions (Law et al., 2004). Rankin (2013) found that nurses high in emotional intelligence had emotional self-awareness and self-control and knew how to resolve negative emotions appropriately and they could be more absorbed in the nursing profession. Nurses who have a higher level of emotional intelligence may have an increased perception of themselves as part of the solutions and lead to enhanced ability to deal with difficulties in adaptive ways, possibly increasing retention.

This study sheds new light on the partially mediating role of nurse emotional intelligence between nurse manager transformational leadership and nurse intent to stay. Nurse emotional intelligence accounted for part of the relationship between transformational leadership and nurse intent to stay. Nurses who perceived stronger transformational leadership would increase the level of nurse emotional intelligence and consequently enhance the level of nurse intent to stay. The finding is consistent with the findings of Xiao et al. (2016) whose research focused on the airline.

4.1 | Limitations

It is important to note several limitations of this study, and directions for further research. The study is limited to the sampling method and the regional hospitals. Randomized sampling from different regions is suggested for future study. This study is also limited by its crosssectional design. To find the definitive cause and effect over time, a longitudinal design might be merited for future study. In addition, this study used self-reporting that may cause bias.

4.2 | Conclusions

The findings of the study contributed to a better understanding of the mediating role of emotional intelligence in the relationship between nurse manager's transformational leadership and nurse's ITS. The results may be valuable for policy-makers, nursing administrators and nursing educators to formulate the nursing retention strategies. Developing the training programme of nurse manager transformational leadership and nurse emotional intelligence is an important organizational strategy for the human resource management. Nurse emotional intelligence promotion programmes could be developed for school education and continuing education programmes.

4.3 | Implications for nursing management

Although previous research has included factors related to nurse ITS, this research focused on the role of nurse emotional intelligence between transformational leadership and nurse intent to stay. The results of this study may provide additional understanding of established models and theories of nurse ITS. The study also supports the importance for nurse educators to consider emotional intelligence as a core curricular component (Por, Barriball, Fitzpatrick, & Roberts, 2011). Nurse managers should consider emotional intelligence training for nurses in clinical practice. In addition, the findings from this study suggest that increasing nurse managers' transformational leadership knowledge, skills, abilities and behaviours may improve nurse emotional intelligence and ultimately enhance nurse intent to stay. Dvir, Eden, Avolio, and Shamir (2002) reported that transformational leadership skills could be learned by training programmes. Therefore, nurse managers' transformational leadership training targeted to the development of effective measures is an important next step in future research.

ACKNOWLEDGEMENTS

The authors would like to thank all participating nurses in Shanghai whose inputs made this study possible. Thanks also to all participating hospitals in Shanghai for their great support.

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How to cite this article: Wang L, Tao H, Bowers BJ, Brown R, Zhang Y. When nurse emotional intelligence matters: How transformational leadership influences intent to stay. *J Nurs Manag.* 2018;26:358–365. <u>https://doi.org/10.1111/jonm.12509</u>