Introduction

The World Health Organization (WHO) predicts that by 2030, an additional 40 million health care staff are required to meet the demands of society and populations (WHO, 2018). Demands for Chinese hospital outpatients services increased by 250 million with hospitalisations rising by 17.08 million between the years 2016 and 2017 (Department of planning, 2018). Workloads are growing significantly and these increased demands have resource implications – for both staff and service provision.

However, in many areas of the world there is a shortage of nurses – partially driven by substantial numbers of qualified nurses leaving the profession. This is particularly acute in China where nurse to population ratios are minimal. OECD sources show ratios of nurses to population in China is just 2.3/1000. This is significantly lower than many other developed countries: (America 11.1/1000, Japan 11/1000, Australia 11.6/1000, Germany 12.9/1000 and Norway 17.5/1000 (OECD, 2017)).

These workforce pressures are contributing to staff burnout with nurses leaving the profession in growing numbers (Monsalve-Reyes, 2018; Stamm, 2009). As work stress increases and staffing numbers decrease, patient safety and care provision may be compromised (MacPhee, 2017). Studies show rising workloads, poor work environment, demanding shift patterns, family-work conflicts and limited career development opportunities contribute to staff burnout and reduced attrition (Nei, 2015).

Transformational leadership is recognised as a good way of supporting the employees by engaging them emotionally and intellectually (Surakka, 2008). Transformational leadership has been shown to empower staff, encourage team-working and reduce work-related stress even contributing to a high quality patient care (Ferguson, 2015; Riahi, 2011; Schmidt, 2014; Weberg, 2010). It has significant positive effects on work environment culture and job satisfaction (S. L. G. Choi, C. F. Adam, M. B. Tan, O. K., 2016; Cummings, 2018). Thus, nurse leaders must build a supportive culture in the nursing environment.

Spirituality Theory encompasses qualities valued by human spirit, such as 'love and compassion, patience, tolerance, forgiveness, contentment, personal responsibility and a sense of harmony'(Fry, 2016). Spiritual climate that is a work culture of encouraging the respectful expression of personal spiritual views together with the promotion of self-value, peer support, a sense of being engaged in meaningful work. It can have positive benefits on stress, burnout and nurses' intentions to quit their job (Jufrizen, 2019; Nowrouzi, 2015). It is a climate of encouraging the respectful expression of personal spiritual views where staff can bring more of themselves to their role (Doram, 2017).

Supportive spiritual climate is linked with improved nurse performance (Doram, 2017; Zhang, 2019). Open and honest, shared communication can benefit nursing practice in hospitals (Cruz, 2018; Doram, 2017). The two issues of transformational leadership and fostering a positive spiritual climate in the workplace seem complimentary – however, to date, there have been no studies to examine this relationship.

Therefore, this is the first study to evaluate whether there is a link between perceived positive spiritual environment and transformational leadership and whether this impacts burnout and intention to leave the profession.

Background

Transformational leadership was first identified in the 1970s by Burns (Burns, 1978). He identified transformational leaders as possessing the ability to inspire and motivate their staff. People identified with this trait are able to provide unconditional support to their employees, because they effectively communicate their organizations' vision and mission to employees, so that all can engage with strategies to improve provisions for their organizations (Peterson, 2009). Transformational leadership has four central components: idealized influence: inspirational motivation: intellectual stimulation; individualized consideration (Bass, 1985). Many industries and disciplines, including nursing, adopt this style of leadership as means to enhance organizational and individual performance (Broome, 2013; Gang, 2001).

Spirituality is a natural aspect of human nature (Fry, 2016). Human nature is the integration of spirit, body and mind, which if in balance, results in internal harmony and peace (Fiori, 2004). Nurses are sensitive to workplace spirituality and have strong social values and ethical standards for their work (ICN, 2012; Sprung, 2012). They should be able to demonstrate their value in the workplace so that they can recognize their work as meaningful. Positive effects of promoting spiritual climate prove the benefits to healthcare workers and patients in many literature (Doram, 2017; Zhang, 2019). In healthcare environment, certain work attitudes, such as job involvement and organizational commitment and productivity are improved and absenteeism or turnover are reduced (B. Pawar, 2009; B. S. Pawar, 2009).

Nursing practice can be very rewarding – often helping people at the worst times of their lives (Santiago, 2019). However, it often comes with a price - that of workplace stress. Burnout is a real threat to nursing – it can affect the quality of care and may result in nurses wanting to leave their job (Khamisa, 2016). 'I am exhausted' was frequent expression of burnout and many researchers have adopted the emotional exhaustion to represent burnout (Fernandez-Castro, 2017; Zadow, 2017). High stress and burnout amongst nurses has been shown to result in care being missed or mistakes being made (Van Gerven, 2016).

Galea suggests that spirituality could be a useful solution in addressing work related nursing stress (Galea, 2014). Spirituality and a spiritual climate can serve as a coping mechanism and help nurses to embrace the meaningfulness of their work (Pio, 2018). Indeed, there is some research that links a more positive spiritual climate to the reduction of nurse burnout (Zhang, 2019). Doram et al (2018) and Cruz et al (2017) suggest that part of the process of creating a spiritual climate managers should be open and actively listen and respond to the feelings and views of nurses – in other words, leadership can be a driver of an increased spiritual climate. Transformational leadership works as a positive leadership style influence the psychological well-being and the work environment (Doody, 2012). It can motivate, inspire and stimulate followers act in a way that sustains the greater good rather than their own interests (Burns, 1978). Transformational leadership in the workplace is a positive leadership style and may be a vital factor in influencing both the spiritual climate and rets of burnout among nurses(Paal, 2018). The two issues of transformational leadership and fostering a positive spiritual climate in the workplace therefore seem complimentary – however, no studies have looked at this relationship. Therefore, this study explores the relationship between transformational leadership and spiritual climate and how this relationship affects burnout and other work-related factors, such as teamwork.

Methods

A cross-sectional questionnaire survey of clinical nurses in practice across two hospital sites in the Jiangsu Province of China.

Data and sample

Cluster random sampling was undertaken between during March to May in 2019 in two hospitals within the Jiangsu province of China. Clinical nurses with at least one year of nursing experience were asked to complete questionnaires developed from pre-validated scales. (These scales measured perceived spiritual climate, leadership, emotional exhaustion and turnover intention)

For validity, sample size was calculated using formula N ≥20*m (m=number of independent variables) . Our study has 15 independent variables tested in each hospital, so the minimum sample size was 300. Considering 20% dropout rate, we estimated larger sample size. Out of 400 questionnaires distributed, 391 were completed indicating a response rate of 97.75%.

Measures

Demographic variables included characteristics and work-related variables including; age, clinical site (workplace) and total years clinical experience. Participants were asked about teamwork in their usual clinical practice. Four pre-validated scales were applied to develop the questionnaires to assess participants' perceived levels of spiritual climate, leadership, emotional exhaustion and intention to leave. (see Table 1)

The spiritual climate scale (Sexton et al 2006) possesses good psychometric properties and internal consistency. The validated Chinese translation (Zhang, 2019) was applied to this research. Similarly, the prevalidated Chinese translation of the Multifactor Leadership Questionnaire (MLQ) (Hui, 2008) was used to develop responses.

Maslach's emotional exhaustion scale, offers a widely used and validated tool to represent burnout (Maslach, 2001). The Chinese version of the scale has been validated in previous studies (Peng et al, 2014). The Chinese translation (Li, 2000) of Michael's (1982) turnover intention scale was applied to generate information on nurses' intention to leave.

Ethics

This study received ethics approval by both the host university and Affiliated Hospitals. All participants were informed of the aim of research and provided written consent. They were informed of their rights to withdraw at any time during the research.

Data analysis

Questionnaires were derived from pre-validated tools. Spirituality was used as a third hypothetical variable, to determine the influence of spiritual climate on emotional exhaustion (independent variable) and transformational leadership (dependant variable). Descriptive statistics, correlation and reliability were conducted using SPSS (IBM,2016a). All variables are standardized and p-value < 0.05 was considered significant.

Results

Participants' demographics are shown in Table 2. Participants worked in a range of clinical sites, with 77% having worked longer than 3 years. Most participants identifies teamwork as usual practice (80.6%).

Perception that clinical sites had a positive spiritual climate was high (m 65.20 – SD 19). With 73% of nurses identifying acceptance of diversity in beliefs. Most (61%) also felt encouraged to express spirituality in this clinical area.

Mean scores on transformational Leadership indicated nurses perceived 'medium levels' of leadership from their managers. However, scores were collated for staff working in a range of different clinical areas within the hospitals, thus, results reflect the amount of nursing leaders within the hospital. Emotional exhaustion was identified at 23, suggesting nurses frequently felt burned out. Similarly, turnover intention was 2.40, indicating nurses had thoughts of leaving the profession. (Figure 1).

Pearson product correlation was applied to measure the strength and direction of linear relationships between teamwork, spiritual climate, transformational leadership, emotional exhaustion and turnover intention. There was a significant negative relationship between spiritual climate and scores on emotional exhaustion and turnover intention ($r=-0.455$, $p<0.01$; $r=-0.323$, $p<0.01$).

Mild correlation were noted across teamwork with spiritual climate and transformational leadership ($r=0.100$, $p<0.05$; $r=0.181$, $p<0.01$) (see Table 3).

Mediation analysis was undertaken to reveal the influence of spiritual climate, transformational leadership and emotional exhaustion.

Transformational leadership was significantly associated with spiritual climate (estimate for a=0.198, $p<0.01$). It was negatively associated with emotional exhaustion (estimate for c=-0.115, $p<0.05$).

Spiritual climate showed a negative association with emotional exhaustion (estimate for b=-0.499, $p<0.01$). Sobel test was significant ($p<0.01$).

These results reveal an association between transformational leadership and emotional exhaustion which is mediated by a positive spiritual climate. There was an indirect effect of spiritual climate on the relationship between transformational leadership and emotional exhaustion (-0.089 with estimate for ab= -0.089, $p<0.01$).

Accounting for any direct association between transformational leadership and emotional exhaustion there was a partial mediation identifying positive spiritual climate had a mediating effect on transformational leadership and emotional exhaustion (estimate for c'=-0.026, p=0.570). (Fig 2).

5. Discussion

This study identifies that a positive spiritual climate is linked to more positive clincian's experiences (ie reduction in burnout scores and less intent to 'leave' in areas where participants felt supported in expressing their spirituality).

The study identified a relationship between transformational leadership and spiritual climate and that spiritual climate had a mediating effect on the impacts of leadership in reducing burnout and intention to leave.

There were 391 clinical nurses who participated in this study. Most had over 3 years experience (77.0%) and regularly engaged in teamwork (80.6%). Participants responses indicated they may have considered leaving the profession, which is reflected in other studies (James, 2017; Uthaman, 2015).

Participant demographics revealed most nurses were aged 30-50 years and this reflected the usual demographic for China. Seniority was high amongst participants. Studies identify that senior nurses are often reluctant to change employment because of family commitments (Drennan, 2016). Additionally, they have increased levels of emotional intelligence and their time served enhances work value. Many senior nurses feel proud of their positions – enjoying the professional values and behaviours and being intrinsic to patients' recovery (Freeling, 2015; Oliver, 2016).

Some studies show that a manager's behavior (e.g. leadership style) impacts on the employee's behavior (Rigotti, 2014). Transformational leadership is particular positively related with employees' proactivity (Den Hartog, 2012). This study scored nurse's perceptions of leadership style at just 2.66, suggesting a medium level of transformational leadership style (Peng, 2014). Idealized influence of four dimensions had highest score was 2.73 and intellectual stimulation had lowest score was 2.58. For idealized influence dimension, the leader has a role model effect (Bass, 1985). This may be because of the large range of clinical sites of working, thus meaning there were many different leaders and managers across the hospitals. However, it could signify the need to assist current nursing and healthcare leaders to develop their own competency as transformational leaders.

Nursing is a profession with a strong social responsibility and high ethical standards (ICN, 2012). Strong leadership supports this (Allen, 2016). This 'idealised influence' scored highest in responses within the study. Idealised influence exhibits a strong relationship with job satisfaction (Koveshnikov, 2018). Mean scores for nurses reporting they were intellectually stimulated were not as high as anticipated. Previous work demonstrates nurses need to feel a part of their clinical environment, to impact on improvements in care. Thus, leaders should be willing to take higher risks, listening to their staff and communicating effectively in order to expose inefficient systems and improve caregiving (Bass, 1985). Confucian and Taoist work values are held deeply in Chinese people, and this sometimes means they are hesitant to challenge authority. Breaking rules is a challenge to authority and loyalty and this may be why nurses are reluctant to force changes in systems (Lin, 2018).

Compliance can breed lack of stimulation and this may be why the dimension of intellectual stimulaton had the lowest mean score.

Many (73.4%) of the participants identified that a diverse set of spiritual views were accepted in their clinical site. This is important, because pervious work links this with a positive effect on work related satisfaction (Albashayreh, 2019). However, 40% of the participants did not feel they were encouraged to express spirituality in the clinical area. This indicates potential reticence among some nurses to express themselves – which may be associated with poorer leadership, where the managers fear being challenged with new ideas (Harris, 2018; Lin, 2018).

Emotional exhaustion is a key aspect of burnout and is closely related to nurse job satisfaction and turnover intentions (Lopez-Lopez, 2019; Maslach, 2001). This study indicated that nurses frequently felt emotional exhaustion and burnout. A South Korean study also reported similar mean scores for burnout in nursing (Choi et al., 2018). Previous research reports that a heavy workload, unorganized and difficult work conditions, work-family conflicts and low rates of pay are associated with burnout in nursing (Chemali, 2019; Monsalve-Reyes, 2018). Age, gender, marital status and having children, time in career are also be variables that impact on burnout (Canadas-De la Fuente, 2018). Research is also clear that long term exposure work-related stress harms not only mental health but also physical health (Potter, 2010).

Transformational leaders are good at inspiring workers, stimulating and motivating their followers (Lewis, 2016). Transformational nurse leaders built an environment respectable for the whole team members in the working areas. Nurses are motivated and inspired and discovering their meaningful and purposed work in saving people's lives (Boamah, 2018). This study associated higher levels of transformational leadership with teamwork and this is important. Healthcare provision is full of complexity, challenges and uncertainty. There are high task interdependencies which draw nurses

into an array of different tasks and duties. This is probably why team ethos is essential and produces a more positive working environment. Team working provides opportunities for members to exchange information, resources and materials for optimal performance (Gracia, 2010). Team-based methods of care delivery are essential and – as diseases and treatments become more complex, these methods are increasing (Aveling, 2016). Good communication and networking offers a more supportive and interactive environment and this can improve patient safety and satisfaction (Salas, 2007). Findings from this study suggest that there is a positive correlation between higher levels of transformational leadership and reduction in nursing burnout. These findings are supported by previous research (Tafvelin 2019, Diebig 2017).

Spiritual climate has a mediation role in transformational leadership and burnout. Thus, transformational leadership can be instrumental to a supportive spiritual climate, which positively impacts emotional exhaustion.

Nurse leaders must therefore, respect their nurses' spiritual needs. By altruistic intent, they can offer a supportive workplace environment (Paal, 2018; Reimer-Kirkham, 2012). Nurse leaders could develop workplace spirituality by recognizing nurses' emotions and feelings and listening to their community (Pirkola, 2016). This can then help nurses to express their own values and promote a less stressful environment (Arnetz, 2013). Spiritual climate offers a process for nurses to recover their spiritual well-being and sense of community (Pirkola, 2016). Nurses are more likely to find purpose and meaning in life, in part of patients' recovery and show ready recovery from life stress when engaged in a supportive environment (Caldeira, 2012).

This study revealed the impact burnout has upon intention to leave and this is essential to note. Increasing workforce pressures mean nurses must be able to manage. Attrition rates must be considered, because there are not enough nurses to manage demand. We should advocate transformational leadership in nursing management and create a positive spiritual climate by giving appreciation, acceptance in nursing practice so as to reward and encourage nurses interact with

patients and improve quality of care. Meaningful nursing practice reveals value of being nurse and reduces burnout even attracts nurses devoting into their work.

Limitations

Although findings from this study are important, it does have limitations. The survey was only undertaken in hospitals affiliated with the university. Results were also aggregated across units, wards and environments and reported at institutional level. Further studies should account for particular areas of practice. ICU nurses, for example, have different pressures to those experienced in acute medical wards, for example.

Additionally, leadership is a complex entity to study. It can be dependant upon individuals in the workplace, on communication strategies and on service demands. It is multifaceted in nature, and many measurement scales do not reflect this complexity.

Implication for nursing management

Internationally, there is a significant nursing shortage and burnout leads to increased attrition in the profession. Nursing leaders must be able to meet both their patients' and clinicians' individual needs. They must be able to inspire, motivate and support their staff to improve nursing practice. (Kent, 2019; Trombka, 2018). The clinical nurses' personal and professional environment must be conducive to support a refreshed and relaxed approach so that burnout is reduced in both work and daily life.

Conclusions

Our study illustrated positive relationship between transformational leadership and spiritual climate. The positive effect on reducing burnout could finally influence the nurse intention to leave. We suggest appropriate leadership in workplace may not only benefit nurses' well-being but also make nurses find their work meaningful.

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Fig 1

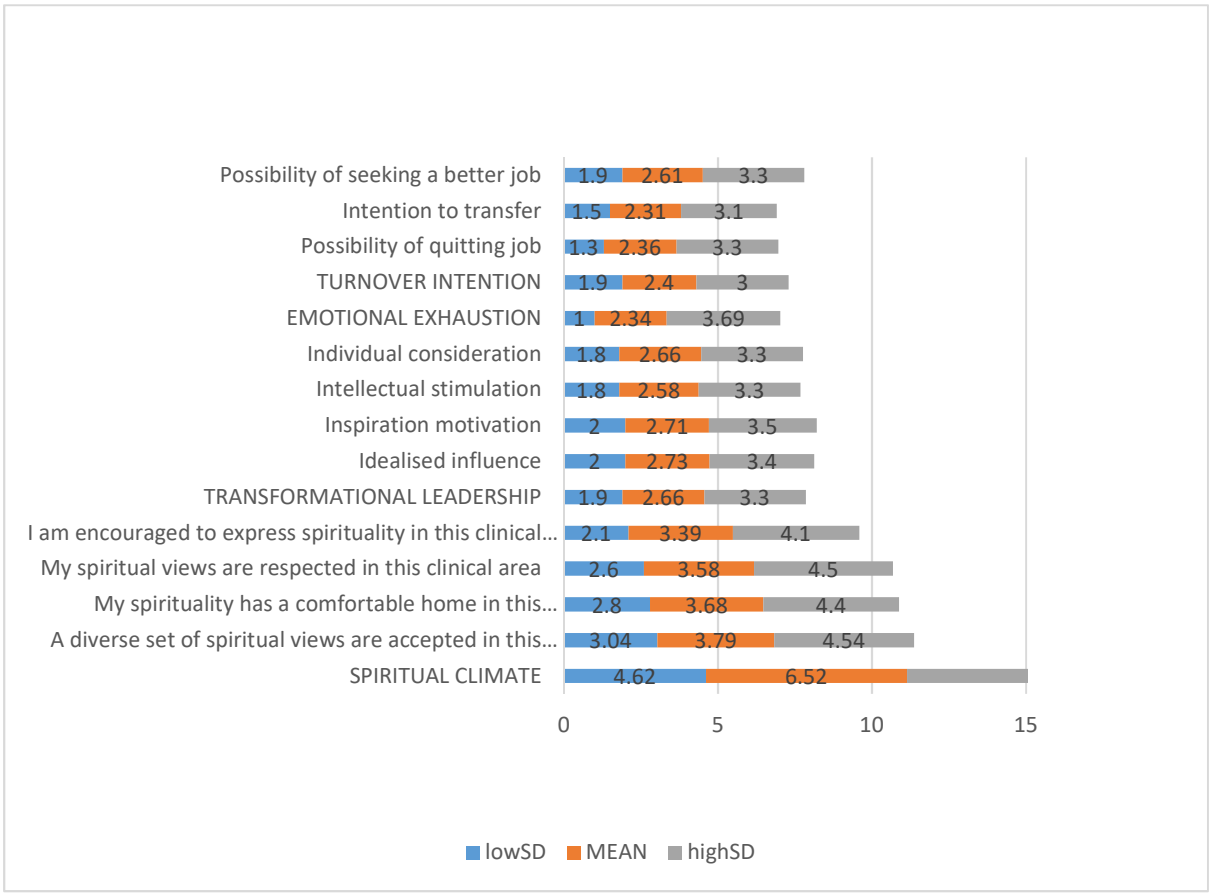

Possibility of seeking a better job
Intention to transfer
Possibility of quitting job
TURNOVER INTENTION
EMOTIONAL EXHAUSTION
Individual consideration
Intellectual stimulation
Inspiration motivation
Idealised influence
TRANSFORMATIONAL LEADERSHIP
I am encouraged to express spirituality in this clinical...
My spiritual views are respected in this clinical area
My spirituality has a comfortable home in this...
A diverse set of spiritual views are accepted in this...
SPIRITUAL CLIMATE
1.9 2.61 3.3
1.5 2.31 3.1
1.3 2.36 3.3
1.9 2.4 3
1 2.34 3.69
1.8 2.66 3.3
1.8 2.58 3.3
2 2.71 3.5
2 2.73 3.4
1.9 2.66 3.3
2.1 3.39 4.1
2.6 3.58 4.5
2.8 3.68 4.4
3.04 3.79 4.54
4.62 6.52
0
5
10
15
lowSD
MEAN
highSD

Table 1

The **spiritual climate scale** Sexton et al (Doram, 2017). Likert scales to answer: A diverse set of spiritual views are accepted in this clinical area: My spirituality has a comfortable home in this clinical area: My spiritual views are respected in this clinical area: I am encouraged to express spirituality in this clinical area	
% agreement	Higher scores reflect higher spiritual climate
Hui Pan et al (2008) **Chinese Leadership Questionnaire** (reliability coefficient Cronbach α.880 measures Idealised influence: Inspiration motivation: Intellectual stimulation: Individual consideration	
⩽ 1.33	low level leadership style'
1.34⩽ 2.66	medium level leadership style
⩾ 2.67	high level leadership style
Emotional Exhaustion scale (Maslach Burnout Inventory (MBI) - (Maslach, 2001) translated by Peng et al (Peng, 2014). Questions cover Emotional exhaustion: Personal Accomplishment: Depersonalisation	
>26	HIGH burnout
19-26	medium level burnout
⩾ 2.67	high level leadership style
Turnover intention scale. The turnover intention scale is developed by Michael and a Chinese version is translated by Li et al (Li, 2000; Michaels, 1982). (Cronbach's α = 0.859). Includes questions relating to Possibility of quitting job; Intention to transfer: Possibility of seeking a better job	
<1	lowest intention to leave
⩽ 2	low intention to leave
>3	High intention to leave

Table 2

Variables (n=391)	n	%
Age group		
<30	223	57.0%
30-50	164	41.9%
>50	4	1.00%

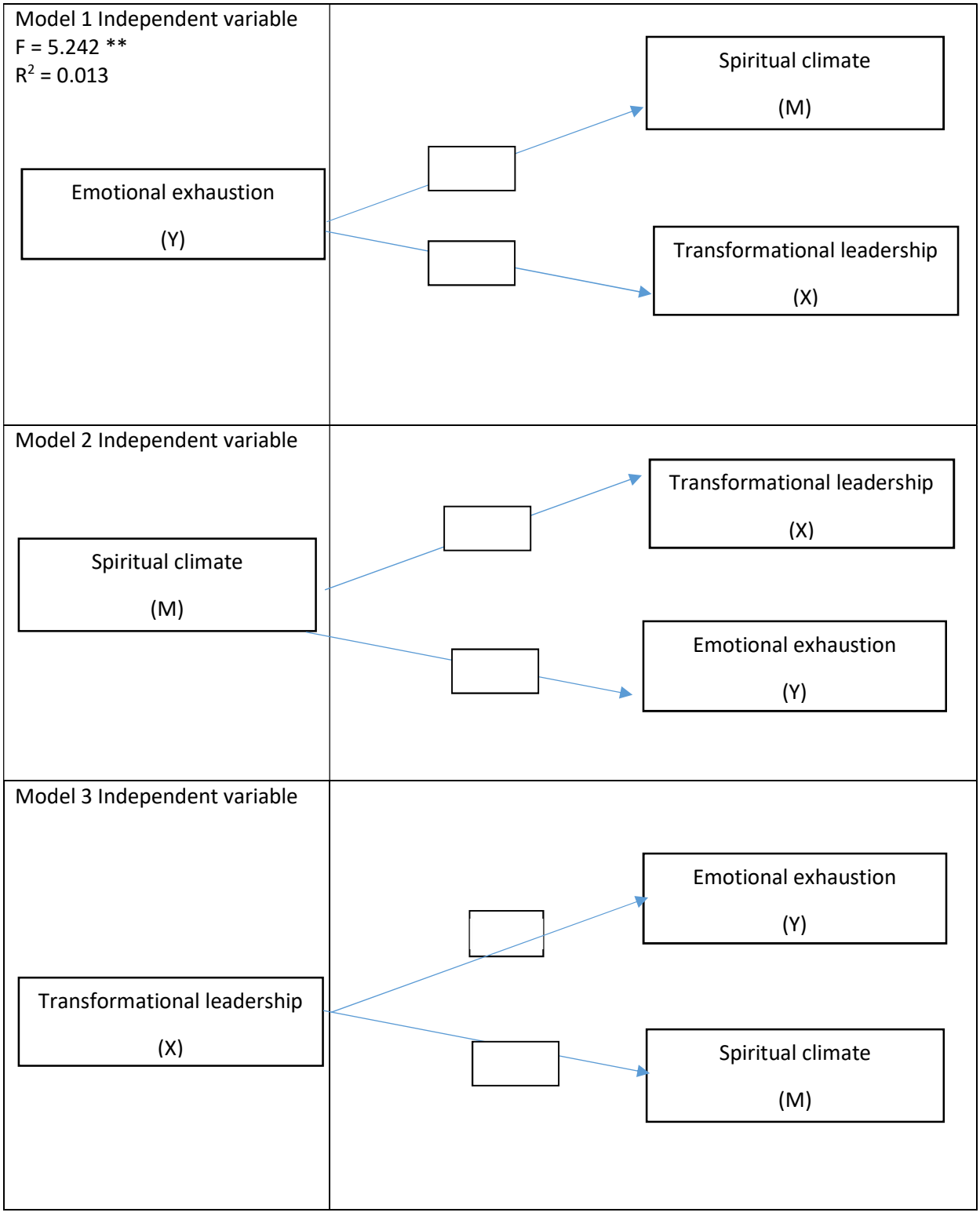
Working unit		
Medicine	117	29.9%
Surgery	125	32.0%
Pediatrics	23	5.9%
Obstetrics	57	14.6%
ICU	44	11.3%
Emergency	25	6.40%
Experience of this hospital		
Junior nurses (<=3 years)	90	23.0%
Senior nurses (>3 years)	301	77.0%
Applying teamwork	315	80.6%

Table 3

Correlation	1	2	3	4
1.Teamwork		0.100*	0.181**	-0.108*
2.Spiritual climate	0.100*		0.198**	-0.455**
3.Transformational leadership	0.181**	0.198**		-0.115*
4.Emotional exhaustion	-0.108*	-0.455**	-0.115*	
5.Turnover intention	0.026	-0.323**	-0.068	0.545**

Table 3 Correlation between groups

Table 4 Mediation effect analysis model


Model 1 Independent variable
F = 5.242 **
R2 = 0.013
Emotional exhaustion
(Y)
Spiritual climate
(M)
Transformational leadership
(X)
Model 2 Independent variable
Spiritual climate
(M)
Transformational leadership
(X)
Emotional exhaustion
(Y)
Model 3 Independent variable
Transformational leadership
(X)
Emotional exhaustion
(Y)
Spiritual climate
(M)

Abstract

Aim: To explore the relationship between, spiritual climate, transformational leadership, and reveal their impacts upon perceived emotional exhaustion and intention to quit.

Background : Transformational leadership is known to have a significant positive effect on work environment and job satisfaction. Additionally, promoting spiritual climate amongst staff can benefit workers by increasing self-worth. The relationship between the two is unknown.

Methods : N391 nurse clinicians from 2 sites in the Jiangsu province of China completed self-report questionnaires based on spiritual climate, emotional exhaustion, clinical leadership and turnover intention scales. Mediation analysis was applied to evaluate impact of spiritual climate.

Results: Perceived positive spirituality amongst nurse clinicians reinforces transformational leadership to reduce emotional exhaustion and retention of staff (indirect effect of -0.089, $p<0.01$). Burnout and intention to leave showed significantly positive correlation with lower levels of perceived spirituality ($r=0.545$, $p<0.01$).

Conclusions: Studies show that transformational leadership in the workplace can reduce nurses' burnout. However, nurses report that a positive spiritual climate increases meaningfulness in their work. This paper evaluates how spiritual climate mediates emotional exhaustion and supports transformational leadership.

Implications for Nursing Management: Healthcare leaders must look beyond transformational leadership to maintain a positive and supportive clinical climate and this may involve acknowledgement of clinician's spiritual needs.

Keywords : transformational leadership, spiritual climate, burnout, turnover intention, nurse