



## Job satisfaction among hospital nurses: A literature review

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### ABSTRACT

**Background:** Globally there are mounting concerns about nurses' job satisfaction because of its pivotal role in nurse turnover and the quality of care of patients.

**Objectives:** To identify a more comprehensive and extensive knowledge of the job satisfaction of qualified general nurses working in acute care hospitals and its associated factors drawing upon empirical literature published in the last five years.

**Design:** Literature review.

**Data sources:** A comprehensive electronic database search was conducted in PubMed (2012–2017), Web of Science (2012–2017), CINAHL (2012–2017), Embase (2012–2017), PsycINFO (2012–2017) and the Applied Social Sciences Index (2012–2017), CNKI (2012–2017), WanFang (2012–2017), SinoMed (2012–2017) and VIP (2012–2017) to retrieve relevant articles published in both English and Chinese between January 2012 and October 2017.

**Review methods:** Key terms and phrases associated with job satisfaction, occupational stress, professional commitment, role conflict and role ambiguity were utilized in the subject search in combination with nurses following guidelines for searching the OVID interface. The abstracts or full texts of research papers were reviewed prior to their inclusion in the review according to inclusion criteria and quality assessment using the Strobe guidelines.

**Results:** A total of 59 papers were included in this review. The impact of job satisfaction upon sickness absence, turnover intention, as well as the influencing factors of job satisfaction such as working shift and leadership, job performance, organizational commitment, effort and reward style has been identified in a number of research studies yielding equivocal findings. Job satisfaction of hospital nurses is closely related to work environment, structural empowerment, organizational commitment, professional commitment, job stress, patient satisfaction, patient–nurse ratios, social capital, evidence-based practice and ethnic background. Various mediating or moderating pathways have been identified with nurses' job satisfaction being mediated by various factors.

**Conclusions:** It is vital to increase nurses' job satisfaction because this has the potential both to improve patients' perceptions of care quality and ensure an adequate nursing workforce. The indirect relationships and predictors of job satisfaction contribute to a more comprehensive understanding of the complex phenomenon of job satisfaction, which in turn may aid the development of effective strategies to address the nursing shortage and increase the quality of patient care.

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### What is already known about the topic?

- Low job satisfaction of nurses has contributed to their high turnover rate and decreased quality and safety of patient care.

- The sources of nurses' job satisfaction, its effect and the related factors affecting nurses' job satisfaction have been identified, but they are not all-inclusive.

### What this paper adds

- Applying the context of modern healthcare provision which values patient-centered care, the relationship between nurses'

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job satisfaction and patients' perceptions of the quality of care was proposed and tested.

- Job satisfaction is a complex phenomenon with many affecting components yielding some inconsistent findings within different cultural settings and values. The review identifies the predictors of job satisfaction which need further testing and verification through longitudinal and intervention studies.
- Various theoretical models and mediating or moderating pathways of nurses' job satisfaction are identified, making further development of a comprehensive and causal model possible.

## 1. Introduction

Nursing shortages have been a challenge for some time and will worsen because of longer life expectancies and more people living with chronic disease in many countries (Lu et al., 2012; Ravari et al., 2012; Roelen et al., 2013; Dall'Ora et al., 2015; Masum et al., 2016; Lo et al., 2017). Job satisfaction is a global concern because of the potential impact on the quality and safety of patient care in addition to low job satisfaction being a contributing factor associated with nurses leaving their current jobs and the profession (Roelen et al., 2013; Masum et al., 2016). More evidence relating to nurses' job satisfaction continues to emerge with the recent reviews focusing on one aspect or one geographical region, for example, the relationship between job satisfaction and task delegation, psychological empowerment, workplace empowerment and nurses' general job satisfaction in Iran (Chiyasvandian and Adera Gebra, 2014; Amiresmaili and Moosazadeh, 2013; Jang and Oh, 2017; Yarbrough et al., 2017; Riisgaard et al., 2016; Ke et al., 2017; Cicolini et al., 2014). A new update drawing upon this recent evidence is needed to extend knowledge and identify the continuing gaps in knowledge. This review updates two previous reviews (Lu et al., 2005, 2012) and examines the extensive empirical literature regarding the job satisfaction of qualified general nurses working in hospitals and its associated factors.

## 2. Methods

### 2.1. Literature search

The literature relating to job satisfaction and nurses was identified through electronic databases using the same method as in the previous review (Lu et al., 2012). The electronic databases searched were: PubMed (2012–2017), Web of Science (2012–2017), CINAHL (2012–2017), Embase (2012–2017), PsycINFO (2012–2017) and the Applied Social Sciences Index (2012–2017). Chinese databases such as the CNKI (2012–2017), WanFang (2012–2017), SinoMed (2012–2017) and VIP (2012–2017) were also used. The search terms (title, abstract, key words) used were: “nurse”, “nursing”, “job satisfaction”, “professional satisfaction”, “work satisfaction”, “career satisfaction”. Based on our previous experience of two reviews on nurses' job satisfaction, which were conducted in 2005 and 2012 respectively, some papers could not be found using the search terms (Lu et al., 2005, 2012). Nevertheless, they did include job satisfaction as part of their studies. Therefore, to maximize the amount of relevant literature, key terms and phrases associated with job satisfaction such as “occupational stress”, “professional commitment”, “role conflict” and “role ambiguity” were utilized in the subject search in combination with nurses following the OVID search guidelines.

### 2.2. Inclusion and exclusion criteria

Inclusion criteria were: qualified general nurses working in acute care hospitals, published in English or Chinese. Exclusion criteria were:

student nurses, nurse assistants and qualified nurses working in specialized hospitals, other health care settings or non-adult health-care. We confined the work setting to acute care hospitals because they typically have a variety of clinical areas including medical, surgical, emergency departments, intensive/critical care units and operating theatres. Nurses working in these areas are often presented with complex nursing decisions, long hours, shift work and rapid patient turnover (Hayes et al., 2010). There is a global shortage of critical care nurses working in acute inpatient settings (Upenieks, 2003). Retention of nurses working in the acute care hospital setting is vital and this can be achieved by ensuring that nurses find satisfaction with their jobs.

### 2.3. Study selection and quality assessment

Before the study selection, search results were all exported to Endnote X7 and the duplicates were removed. This identified a total of 9265 published research papers from all the databases searched. The studies were then screened for eligibility and relevance based on titles and abstracts. If title/abstract did not provide sufficient information or if a final decision could not be made, we assessed the full article. After full text screening, papers that did not meet the inclusion criteria were removed. This was followed by using the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) instrument comprising a 22 item checklist that relates to the title, abstract, introduction, methods, results and discussion sections of articles and facilitates critical appraisal and the interpretation of studies, to assess the quality of the studies with confirmed inclusion criteria, and to arrive at the final sample of included papers (Vandenbroucke et al., 2014). The quality of the retrieved studies was relatively high, with scores higher than 15. Disagreements occurring in selection process were resolved by discussion in order to reach a consensus.

Finally, 8784 papers were deemed not relevant and 422 papers were of poor quality with reference to the STROBE guidelines (Altman et al., 2007). A total of 59 papers were included in this review (Fig. 1).

## 3. Results

### 3.1. Influencing factors of job satisfaction and factors influenced by job satisfaction

Beside the effects of job satisfaction on nurse absenteeism, burnout, turnover and intention to quit (Lu et al., 2005, 2012), the impact of job satisfaction upon intention to stay, sickness absence and job performance, as well as the influencing factors of job satisfaction such as working shift and leadership style have been explored in studies yielding equivocal findings.

#### 3.1.1. Sickness absence

Interestingly, in a prospective cohort study conducted by Roelen et al. (2013), low job satisfaction was revealed to be associated with higher odds of sickness absence (odds ratio [OR]=1.05, 95% confidence interval [CI] 1.01–1.09) and high (31 days) sickness absence (OR=1.10, 95% CI 1.06–1.14). However, job satisfaction poorly performed as a predictor of both sickness absence (Nagelkerke's  $R^2=0.7\%$ ) and high sickness absence (Nagelkerke's  $R^2=3\%$ ). In addition, job satisfaction did not adequately distinguish between nurses with and without sickness absence (AUC=0.54; 95% CI 0.51–0.58) or between nurses with and without high sickness absence (AUC=0.58; 95% CI 0.54–0.63), which means that job satisfaction failed to identify nurses at risk of sickness absence.

#### 3.1.2. Turnover intention

Recently Chen et al. (2016) conducted a cross-sectional survey to examine the effect of underlying contextual factors on the

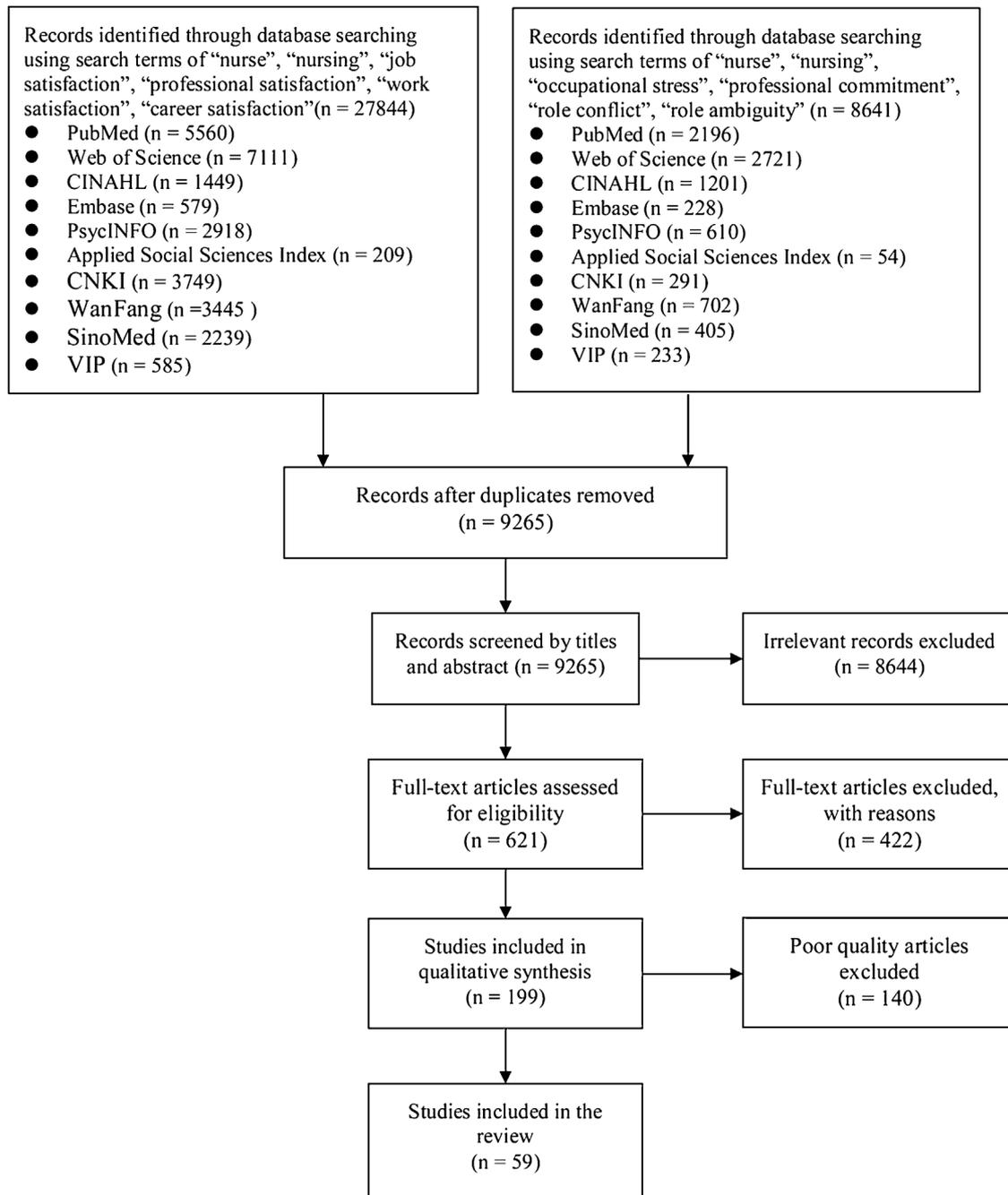


Fig. 1. The flow diagram illustrating the selection of publication.

intention to stay among nurses in Taiwan, and found that the significant direct effects of job satisfaction on the intention to stay was 0.43 ( $P < 0.001$ ). Further the organization-based self-esteem (OBSE) mediated indirect effects of job satisfaction on the intention to stay were significant ( $P < 0.05$ ). AbuAlRub and Alghamdi (2012) reported similar findings and found that job satisfaction explained 2% of the variation in intention to stay.

Regarding the effect of job satisfaction on turnover intention, there were some similar findings in the different studies. The mediating effect of job satisfaction on the relationship between professional identity and turnover intention among nurses was explored by Zhang et al. (2016a), who found that job satisfaction had a full mediating effect on the influence of professional identity on turnover intention. Zhao et al. (2015) established a model of turnover intention in which job satisfaction mediated between

nurse perceived organizational support and turnover intention, with the mediation effect of  $-0.224$ , and explained 43.6% of the total effects. Jayasuriya et al. (2012) also reported that job satisfaction was negatively associated with turnover intention ( $r = -0.18$ ,  $P < 0.05$ ).

Masum et al.'s (2016) study of the influencing factors of job satisfaction and intention to quit among Turkish nurses found that intention to quit was statistically significantly explained by job satisfaction ( $\beta = -0.91$ ,  $P = 0.001$ ). Specifically, every one unit increase on the job satisfaction scale was associated with being 61% less likely to consider turnover. and intention to leave the profession among nurses was also investigated in Sabanciogullari and Dogan (2015) study. Using logistic regression analysis, job satisfaction ( $\beta = 0.646$ ,  $SE = 0.081$ ,  $Wald = 63.947$ ,  $df = 1$ ,  $P < 0.001$ ) significantly affected the nurses' intention to leave the profession.

Lo et al. (2017) conducted two nationwide cross-sectional surveys of full-time hospital nurses in Taiwan in 2011 and 2014 to examine the structural relationships linking job stress to leaving intentions through job satisfaction. The results of the structural equation modelling indicated that job satisfaction had a direct effect on intention to leave the hospital ( $\beta = -0.611/-0.606$ ,  $P < 0.001$ ) and intention to leave the profession ( $\beta = -0.102/-0.073$ ,  $P < 0.001$ ). Additionally job stress ( $\beta = -0.039/-0.039$ ,  $P < 0.001$ ) and stress adaptation ( $\beta = 0.16/0.18$ ,  $P < 0.001$ ) had a direct effect on job satisfaction.

### 3.1.3. Working shift

Dall'Orta et al. (2015) conducted a cross-sectional survey of 31,627 RNs from twelve European countries and found that working shifts constituted a predictor of job satisfaction. For nurses working 12 h or more, the odds of reporting being dissatisfied with their job (aOR = 1.40; 95% CI 1.20–1.62) and intending to leave their current job due to dissatisfaction (aOR = 1.29; 95% CI 1.12–1.48) were increased by 40% and 29% respectively, in comparison with nurses working 8 h or less.

Ferri's (2016) study examined whether shift work including nights as compared with day shifts only was associated with risk factors predisposing nurses to lower job satisfaction and poorer health. Nurses engaged in rotating night shifts reported the lowest mean scores in both the items of job satisfaction (including "Generally speaking, I am very satisfied with my nursing", "I am generally satisfied with the kinds of activities I do in this job" and "People in this job often think of quitting") and general job satisfaction in comparison with the day shift workers ( $P < 0.01$ ).

Similarly, Cheung and Ching (2014) found that RNs in Hong Kong with no night duty (mean = 3.90, SD = 0.55) were more satisfied with their jobs than those who had two (mean = 3.61, SD = 0.49,  $P < 0.05$ ) or more (mean = 3.59, SD = 0.50,  $P < 0.05$ ) night duties per week.

### 3.1.4. Leadership

Regarding the impact of nurse managers' leadership styles on nurses' job satisfaction, using a hierarchical regression analysis AbuAlRub and Alghamdi (2012) reported that 28% of the variation in job satisfaction was explained by the transformational and transactional leadership styles. Abdelhafiz et al. (2016) has also explored the effects of nurse leaders' leadership styles on job satisfaction among nurses working in Saudi Arabia. The results suggested that job satisfaction correlated positively with transformational leadership ( $r = 0.374$ ,  $P < 0.001$ ) and transactional leadership ( $r = 0.391$ ,  $P < 0.001$ ). Conversely, the overall correlation between passive-avoidant leadership and job satisfaction was negative ( $r = -0.240$ ,  $P < 0.001$ ).

Recently Morsiani et al. (2017) explored staff nurses' perceptions of the impact of the nurse managers' leadership style in terms of job satisfaction using mixed methods comprising a questionnaire survey and three focus groups. The findings suggested that a transactional leadership style aimed at monitoring errors and intervening to correct errors and punishing, had a negative impact on staff nurses' levels of job satisfaction. In addition, the transformational leadership style, which was rarely practiced by nurse managers, was positively correlated with satisfaction.

The effect of gender on transformational leadership and job satisfaction among Saudi nurses was explored by Alghamdi et al. (2017). The results indicated a main effect of the manager's gender ( $F = 51.8$ ,  $P < 0.001$ ) with staff nurses who worked under the leadership of male managers having higher job satisfaction than those who worked under female managers. This was further confirmed by the results of the ANOVA calculations with both male and female subordinates reporting higher job satisfaction and rating higher transformational leadership behaviours when their manager was male.

### 3.1.5. Job performance

Hou et al. (2013) investigated the influence of nurses' job satisfaction on the job performance of staff nurses. They found that, after controlling for demographic variables, nurses' job satisfaction independently explained 11.8% of the total variance of job performance.

### 3.1.6. Effort and reward

Liu et al. (2013) investigated the influence of effort-reward imbalance on job satisfaction among nurses and found that nurses' job satisfaction was affected by effort ( $\beta = -0.241$ ,  $P < 0.001$ ) and reward ( $\beta = 0.297$ ,  $P < 0.001$ ). Li et al. (2012) reported similar findings with nurses' job satisfaction being positively correlated with reward ( $\beta = 0.209$ ,  $P < 0.05$ ) and effort ( $\beta = -0.101$ ,  $P < 0.05$ ).

### 3.1.7. Organizational commitment

Organizational commitment refers to identification with and loyalty to the organization and its goals (Blau and Boal, 1987) which Mowday et al. (1979) defined as the relative strength of an individual's identification with and involvement in a particular organization. Chen (2015) investigated the effect that job rotation and internal marketing had on job satisfaction and organizational commitment among hospital nursing staff, and found that job rotation (Path coefficient = 0.60,  $P < 0.05$ ) and internal marketing (Path coefficient = 0.52,  $P < 0.05$ ) positively affected job satisfaction, and their job satisfaction in turn positively affected their organizational commitment (Path coefficient = 0.56,  $P < 0.05$ ), internal satisfaction (Path coefficient = 0.51,  $P < 0.05$ ) and external satisfaction (Path coefficient = 0.61,  $P < 0.05$ ).

Peng et al. (2016) explored the influence that core self-evaluations had on job burnout and the mediator roles of organizational commitment and job satisfaction. They reported that structural equation modeling indicated that core self-evaluation ( $\beta = 0.266$ ,  $P < 0.01$ ) and organizational commitment ( $\beta = 0.739$ ,  $P < 0.01$ ) had a significant direct effect on job satisfaction, which in turn negatively influenced job burnout ( $\beta = -0.316$ ,  $P < 0.01$ ).

### 3.1.8. Patients' perceptions of overall quality of care

In Kvist et al.'s (2014) study the relationship between patients' perceptions of overall quality of care and nurses' general job satisfaction was modeled by fitting a simple linear regression, which was statistically significant, with overall quality of care as the dependent variable and general job satisfaction as the independent variable (ANOVA,  $F_{1, 96} = 4.63$ , Pearson's correlation coefficient  $r = 0.21$ ,  $P = 0.034$ ). According to the model, when general job satisfaction increased by 1, the overall quality of care increased by 0.16 ( $y = 3.719 + 0.156x$ ).

### 3.1.9. Others

Atefi et al. (2015) investigated the level of nurses' job satisfaction and its associated factors among RNs working at a large hospital in Mashhad, Iran. The univariate linear regression analysis showed that young age ( $\beta = 0.112$ ,  $P < 0.01$ ), being female ( $\beta = 0.238$ ,  $P < 0.01$ ) and being married ( $\beta = 0.335$ ,  $P < 0.01$ ) were significantly associated with a higher level of job satisfaction.

Using the 2004 National Database of Nursing Quality Indicators<sup>®</sup> (NDNQI<sup>®</sup>) RN Survey, Klaus et al. (2012) explored predictors of job satisfaction in four age cohorts of RNs. The results of three-level hierarchical linear modelling suggested that overtime demand (age 20–29 years:  $\beta = -0.075$ ,  $P < 0.001$ ; age 30–39 years:  $\beta = -0.112$ ,  $P < 0.001$ ; age 40–49 years:  $\beta = -0.121$ ,  $P < 0.001$ ; age 50–59 years:  $\beta = -0.116$ ,  $P < 0.001$ ) and involuntary floating (age 20–29 years:  $\beta = 0.089$ ,  $P < 0.001$ ; age 30–39 years:  $\beta = 0.066$ ,  $P < 0.001$ ; age 40–49 years:  $\beta = 0.091$ ,  $P < 0.001$ ; age 50–59 years:  $\beta = 0.107$ ,  $P < 0.001$ ) resulted in significantly lower job

satisfaction in all age cohorts. The oldest two cohorts reported higher job satisfaction with increased unit tenure (age 40–49 years:  $\beta=0.003$ ,  $P<0.001$ ; age 50–59 years:  $\beta=0.005$ ,  $P<0.001$ ) whereas the youngest cohort reported decreased job satisfaction with increased unit tenure (age 20–29 years:  $\beta=-0.034$ ,  $P<0.001$ ).

The relationships between work-family conflict, coping styles and job satisfaction were investigated among clinical nurses in Zhao's (2013) study, in which findings of the hierarchical regression analysis revealed that 24.9% of the variation in job satisfaction was explained by work-family conflict and coping styles.

Findings of Gountas et al.'s (2014) study suggested that both surface acting ( $\beta=-0.20$ ,  $P<0.01$ ) and emotional exhaustion ( $\beta=-0.30$ ,  $P<0.01$ ) had a negative effect on job satisfaction, while self-efficacy ( $\beta=0.28$ ,  $P<0.01$ ) had a positive effect on job satisfaction (Table 1).

In summary, a number of influencing factors of job satisfaction and factors influenced by job satisfaction have been newly identified in different studies, however, both longitudinal studies and intervention studies are needed for further verification, especially when it comes to predictors (Table 2).

### 3.2. Related factors to job satisfaction of nurses

Apart from the predicting role exerted by job satisfaction in our previous reviews (Lu et al., 2005, 2012), various factors, such as work environment, patient-nurse ratios and structural empowerment, have recently been identified as related factors of job satisfaction. In the last five years, many theoretical models have been developed to explain and guide the study of the complex relationships and interactions between job satisfaction and other factors.

#### 3.2.1. Turnover intention

Using a cross-sectional survey Choi et al. (2013) investigated how front-line Hong Kong RNs' (n = 1271) perceptions of their work

environment were associated with and predicted nurse outcomes in terms of job satisfaction and turnover intention. They found a significant negative association between nurses' self-indicated level of job satisfaction and intention to leave (Spearman Coefficient =  $-0.465$ ,  $P<0.001$ ).

Lo et al. (2017) found that job satisfaction was related to intention to leave the profession ( $r=-0.46/-0.46$ ,  $P<0.001$ ), intention to leave the hospital ( $r=-0.55/-0.23$ ,  $P<0.001$ ), stress adaptation ( $r=0.3/0.12$ ,  $P<0.001$ ) and depressed mood ( $r=-0.35/-0.27$ ,  $P<0.001$ ).

Wang et al. (2012) explored the relationships of job satisfaction, occupational commitment and intent to stay among 560 nurses in mainland China. Their findings indicated that job satisfaction was significantly related to intent to stay ( $r=0.507$ ,  $P<0.001$ ) and occupational commitment ( $r=0.128-0.714$ ,  $P<0.001$ ). The relationships between job satisfaction and retention willingness among nurses were also examined in Zhao (2013) study, in which job satisfaction was shown to be positively correlated with retention willingness ( $r=0.431$ ,  $P<0.01$ ) and perceived professional benefit ( $r=0.476$ ,  $P<0.01$ ).

#### 3.2.2. Work environment and management

Using a cross-sectional survey of Hong Kong' RNs (n=1271), Choi et al. (2013) found that nurses' overall perception of their work environment was significantly related to their sense of job satisfaction (Pearson coefficient =  $0.516$ ,  $P<0.001$ ). Similarly, a positive correlation between nursing work environment and job satisfaction was found in Shao et al. (2016) study ( $r=0.282-0.503$ ,  $P<0.01$ ). Further, a stressful work environment was reported to be a factor impacting job satisfaction among Saudi nurses in Alotaibi's et al. (2016) qualitative study.

Based on the Motivation-Hygiene Theory, McGlynn et al. (2012) examined the relationship between job satisfaction and satisfaction with the professional practice environment among RNs and

**Table 1**  
Influencing factors of job satisfaction among nurses.

Influencing factors	Key empirical sources
<b>Factors influencing job satisfaction:</b>	
Education background, night shift, personnel, effort, reward, Overburden	Liu et al. (2013)
Work-family conflict, problem solving, avoidance or self-blame	Zhao (2013)
Structural empowerment, professional work environment	Zhu et al. (2012)
Type D personality, compassion fatigue, burnout, compassion Satisfaction, job stress	Kim et al. (2017)
Meaningful work, follower's active engagement, follower's Independent critical thinking, emotional dissonance, workload	Gatti et al. (2017)
Working shifts	Dall' Ora et al. (2015), Ferri et al. (2016)
Perceived organizational support, need satisfaction	Gillet et al. (2013)
Gender of the manager	Alghamdi et al. (2017)
Surface acting, emotional exhaustion, self-efficacy	Gountas et al. (2014)
Job stress, stress adaptation	Lo et al. (2017)
Task oriented leadership, bullying, job demands (including Dilemmas and institutional stress	Olsen et al. (2017)
Structural empowerment, authentic leadership	Wong and Laschinger (2013)
Core self-evaluation, organizational commitment	Peng et al. (2016)
Job rotation, internal marketing	Chen et al. (2015)
Background variables, transformational leadership style, transactional style	AbuAlRub and Alghamdi (2012)
Lack of educational opportunities and support, poor image of the Nursing profession, perceptions of favouritism, high workloads and stressful work environment, effect of religion	Alotaibi et al. (2016)
Young age, being female, being married	Atefi et al. (2015)
Overtime demand, involuntary floating, unit tenure	Klaus et al. (2012)
Transactional leadership style, transformational leadership style	Morsiani et al. (2017)
Professional satisfaction, professional attitude and skills, overall Professional self-concept	Sabanciogullari and Dogan (2015)
<b>Factors influenced by job satisfaction:</b>	
Job performance	Hou et al. (2013)
Intention to leave the hospital, intention to leave the profession	Lo et al. (2017), Sabanciogullari and Dogan (2015)
Job burnout	Peng et al. (2016)
Organizational commitment, internal satisfaction, external Satisfaction	Chen (2015)
Intention to stay	AbuAlRub and Alghamdi (2012), Chen et al. (2016)
Intention to quit	Masum et al. (2016)

**Table 2**  
Predictors of job satisfaction among nurses.

Predictors	Key empirical sources
Work-to-family enrichment, family-to-work enrichment	Zhang et al. (2016b)
Positive emotion, negative emotion	Jin and Zhang (2015)
Organizational citizenship behavior	Liu et al. (2017)
Organizational career management	Cai et al. (2013)
Ownership of facility; organizational climate of the work place; supervisory support; community support	Jayasuriya et al. (2012)
Job control, negative affectivity, job demands squared, supervisor support squared, job control by supervisor support interaction, job demands by supervisor support interactions, interpersonal justice	Rodwell and Munro (2013)
Professional commitment, work climate	Caricati et al. (2014)
Ward practice, staffing and resources, management, co-worker relationship, professionalism	Choi et al. (2013)
Structural empowerment, leader empowering behaviours, psychological empowerment	Dahinten et al. (2016)
Race	Doede (2017)
Professional self-concept	Sabancıogullari and Dogan (2015)
Social capital	Shin and Lee (2016)
Beliefs of evidence-based practice	Kim et al. (2016)

found that there was a significant negative relationship between overall work satisfaction and satisfaction with the professional practice environment ( $r=0.49$ ,  $P<0.0001$ ). Zhang et al. (2014) explored the relationship of work environment with nursing outcomes in a sample of 9698 nurses from 181 hospitals in China. They found that job dissatisfaction was associated with better work environments (OR = 0.53, 95%CI: 0.49–0.57,  $P<0.01$ ).

Recently Al-Hamdan et al.'s (2017) study revealed a positive association between nurses' job satisfaction and the nursing work environment ( $t=6.42$ ,  $P<0.001$ ). Specifically, for each one-unit increase in the total score of the Practice Environment Scale of the Nursing Work Index (PES-NWI), nurses' average job satisfaction increased by 1.3 points, controlling for other factors. In addition, nurses employed in public hospitals were more satisfied than those working in teaching hospitals ( $t=3.87$ ,  $P<0.001$ ). Similarly nurses' job satisfaction was reported to be positively correlated with professional work environment ( $r=0.558$ ,  $P<0.01$ ) and structural empowerment ( $r=0.729$ ,  $P<0.01$ ) in Zhu et al.'s (2012) study. They also found that job satisfaction was influenced by the professional work environment and structural empowerment which explained 56.3% of the total effects.

Dahinten et al.'s (2016) study also examined the relationships between structural empowerment, psychological empowerment and job satisfaction among staff nurses, after controlling for their leaders' use of empowering behaviours. Job satisfaction was associated with leader empowering behaviours ( $r=0.52$ ,  $P<0.01$ ), structural empowerment ( $r=0.67$ ,  $P<0.01$ ), and psychological empowerment ( $r=0.45$ ,  $P<0.01$ ).

Cai et al. (2013) found that nurses' organizational career management was positively correlated to job satisfaction ( $r=0.607$ ,  $P<0.01$ ). After controlling for the demographic variables, the overall state of organizational career management could predict 34.2% of the variances of job satisfaction independently.

Other factors relating to nurses' job satisfaction have also been explored. Chang and Zhang (2012) found a relationship between nurses' job satisfaction and patients' satisfaction ( $P<0.01$ ). Lu et al. (2015) developed an adjusted logistic regression model to examine the influence of nurse staffing on nurse job satisfaction and quality of care. Her results revealed that patient-nurse ratios of 4 or less were related to a decrease in the odds of job dissatisfaction (odds ratio 0.55, 95% confidence interval 0.36–0.85) and increase in the odds of high quality of care (odds ratio 1.78, 95% confidence

interval 1.02–2.82). Similarly, Cheung and Ching (2014) found that RNs were less satisfied when the nursing staff-to-patient ratio was high in the morning or afternoon shifts ( $r=-0.18$ ,  $P<0.001$ ), or the night shift ( $r=-0.22$ ,  $P<0.001$ ).

The effect of social capital on job satisfaction and quality of care was examined in Shin and Lee's (2016) study which found social capital to be a significant positive predictor of nurses' job satisfaction ( $R^2=0.50$ ,  $P<0.001$ ) as well as to be positively related to job satisfaction ( $r=0.62$ ,  $P<0.001$ ).

Rodwell and Munro (2013) conducted a cross-sectional survey to investigate the relationship between three types of organizational resources (job control, social support and organizational justice) and the impact of job demands on nurse's well-being and attitudes towards their work. It was found that job control ( $r=0.43$ ,  $P<0.01$ ), supervisor support ( $r=0.32$ ,  $P<0.01$ ), co-worker support ( $r=0.33$ ,  $P<0.01$ ), procedural justice ( $r=0.20$ ,  $P<0.01$ ), distributive justice ( $r=0.18$ ,  $P<0.01$ ), interpersonal justice ( $r=0.30$ ,  $P<0.01$ ), informational justice ( $r=0.20$ ,  $P<0.01$ ), negative affectivity ( $r=-0.25$ ,  $P<0.01$ ) and well-being ( $r=0.32$ ,  $P<0.01$ ) had significant relationships with nurses' well-being and job satisfaction.

Hunt (2014) examined the effect of value congruence between nurses and supervisors on job satisfaction and turnover, and found a positive correlation between job satisfaction and value congruence on leadership support (workload barriers:  $r=0.327$ ,  $P<0.05$ ; administrative support:  $r=0.544$ ,  $P<0.05$ ; collegiality:  $r=0.920$ ,  $P<0.05$ ).

### 3.2.3. Nurses' behaviors and individual factors

Gatti et al. (2017) investigated the relationships between followers' behaviours and nurses' job satisfaction. They found that job satisfaction showed positive correlations with meaningful work ( $r=0.41$ ,  $P<0.001$ ), followers' active engagement ( $r=0.21$ ,  $P<0.001$ ) and followers' independent critical thinking ( $r=0.10$ ,  $P<0.05$ ), and negative correlations with emotional dissonance ( $r=-0.29$ ,  $P<0.001$ ) and workload ( $r=-0.14$ ,  $P<0.001$ ). In addition, multiple regression suggested that: in model 1, there is a significant positive linear relationship between job satisfaction and followers' active engagement ( $\beta=0.013$ ,  $P<0.05$ ), as well as meaningful work ( $\beta=0.034$ ,  $P<0.001$ ); in model 2, there is a U-shaped curvilinear relationship between job satisfaction and followers' active engagement ( $\beta=0.013$ ,  $P<0.05$ ); in model 3, job satisfaction has a significant negative linear relationship with emotional dissonance ( $\beta=-0.22$ ,  $P<0.001$ ) and workload ( $\beta=-0.12$ ,  $P<0.05$ ).

Kim et al. (2016) examined the relationships between evidence-based practice implementation, job satisfaction, and group cohesion, and found a positive correlations between evidence-based practice implementation and job satisfaction ( $r=0.17$ ,  $P=0.029$ ). Hierarchical multiple regression models showed that beliefs in evidence-based practice was a significant predictor of job satisfaction ( $\beta=0.25$ ,  $P=0.011$ ), whereas evidence-based practice implementation was not a significant predictor of job satisfaction.

Liu et al. (2017) explored the relationship between job satisfaction, work engagement and organizational citizenship among nurses and found that nurses' job satisfaction was positively correlated with work engagement ( $r=0.529$ ,  $P<0.01$ ) and organizational citizenship behaviour ( $r=0.481$ ,  $P<0.01$ ).

Doede (2017) explored US minority nurses' job satisfaction and turnover and found that Asians were less dissatisfied (OR = 0.69, 95% CI = 0.57–0.84) than white nurses, which suggests that nurse managers should endeavour to create a workplace free of discrimination in their efforts to increase the job satisfaction of all nurses. In mainland China, Tao et al. (2012) conducted a cross-sectional survey to compare the differences between northern and southern hospitals in China with respect to nurses' job satisfaction.

They found significant correlations between job satisfaction and age ( $r=0.144$ ,  $P<0.01$ ), educational level ( $r=0.095$ ,  $P<0.01$ ), and job rank ( $r=0.091$ ,  $P<0.01$ ). In addition, there was a significant ( $t=11.208$ ,  $P<0.01$ ) difference between regions, with nurses' job satisfaction in southern hospitals lower than that in northern hospitals ( $t=11.208$ ,  $P<0.01$ ). The stepwise multiple regression revealed that the southern region ( $\beta=0.268$ ,  $P<0.001$ ) and age ( $\beta=0.061$ ,  $P<0.001$ ) were significant predictors of nurses' job satisfaction.

In summary, much research has revealed that the job satisfaction of hospital nurses is closely related to work environment, structural empowerment, organizational commitment, professional commitment, patient satisfaction, patient-nurse ratios, social capital, evidence-based practice and ethnic background (Table 3).

### 3.3. Mediators of job satisfaction among nurses

The direct effects of various factors influencing or exerted by nurses' job satisfaction have been verified but the indirect effects have yet to be identified. In an attempt to fill the gap, mediation analysis and pathway analysis are being utilized by growing numbers of researchers to identify and clarify different pathways.

In mainland China a model was developed by Zhang et al., (2016b) in their study examining the mediating role of self-esteem, affective commitment between work-family enrichment and life satisfaction, and job satisfaction among nursing staff. In this model work-to-family enrichment and family-to-work enrichment

played a positive predictive role on job satisfaction with the path coefficients of 0.39. Self-esteem and affective commitment partially mediated the relationship between work-family enrichment and job satisfaction.

The findings of Wong and Laschinger's (2013) study indicated that structural empowerment mediated the relationship between authentic leadership and job satisfaction ( $z=2.61$ ,  $P<0.01$ ). Specifically, using structural equation modelling, it was reported that structural empowerment had a significant direct effect on job satisfaction ( $\beta=0.41$ ,  $P<0.01$ ) and authentic leadership had a statistically significant positive direct ( $\beta=0.16$ ,  $P<0.01$ ) and an indirect ( $\beta=0.19$ ,  $P<0.01$ ) effect on job satisfaction through empowerment.

With a view to exploring workplace bullying and its relation to work climate and different outcomes amongst nurses, Olsen et al. (2017) examined a proposed bullying model including both job resource and job demands, as well as nurse outcomes reflected in job performance, job satisfaction, and work ability. Results of confirmatory factor analyses and structural equation modelling showed that task oriented leadership ( $\beta=0.14$ ,  $P<0.001$ ), bullying ( $\beta=0.10$ ,  $P<0.001$ ) and job demands (including dilemmas and institutional stress) had a significant influence on job satisfaction. Both institutional stress ( $\beta=-0.30$ ,  $P<0.001$ ) and dilemmas ( $\beta=-0.14$ ,  $P<0.001$ ) reduced job satisfaction. Furthermore, bullying mediated the influence job resources (including colleague support, competence development) and job demands (including dilemmas, institutional stress) have on job satisfaction among nurses.

**Table 3**

Related factors to job satisfaction of nurses.

Related factors	Key empirical sources
Substantial to very strong relationship with job satisfaction (correlation coefficient > 0.5)	Fang (2001), Zhu et al. (2012), Wang et al. (2012), Choi et al. (2013), Cai et al. (2013), Hunt (2014), Zhao et al. (2015), Zhang et al. (2016b), Gao et al. (2016); Liu et al. (2017), Zhang et al. (2016a), Kim et al. (2017), Peng et al. (2016), Dahinten et al. (2016), Shin and Lee (2016), Masum et al. (2016)
Job stress; organizational commitment; structural empowerment; affective commitment; work engagement; professional identity; perceived organizational support; organizational career management; burnout, compassion satisfaction; intent to stay; work environment; leader empowering behaviour; administrative support, collegiality; social capital; turnover decision, experience, pay, promotion, fringe benefits, contingent rewards, communication	
Moderate to substantial relationship with job satisfaction (correlation coefficient 0.2–0.5)	Zhao et al. (2012), Wong and Laschinger (2013), Jayasuriya et al. (2012), AbuAlRub and Alghamdi (2012), McGlynn et al. (2012), Choi et al. (2013), Gillet et al. (2013), Gountas et al. (2014), Zhao (2013), Rodwell and Munro (2013), Cheung and Ching (2014), Hunt (2014), Zhao et al. (2015), Sabanciogullari and Dogan (2015), Mei and Zhao (2015), Zhang et al. (2016b), Gao et al. (2016), Peng et al. (2016), Dahinten et al. (2016), Masum et al. (2016), Liu et al. (2017), Shao et al. (2016), Gatti et al. (2017), Lo et al. (2017), Olsen et al. (2017)
Affectivity; supervisor/co-worker support; job performance; autonomy; fairness; locus of control; self-esteem; life satisfaction, the work-family; psychological empowerment; extrinsic factors, rewards; organizational citizenship behavior; work environment; intention to leave; problem solving; perceived professional benefit, intention to stay; psychological capital, positive emotion; meaningful work, follower's active engagement, emotional dissonance; organizational climate; community support; need satisfaction, perceived organizational support; self-efficacy, emotional contagion, surface acting, emotional exhaustion; stress adaptation, depressed mood; task oriented leadership, bullying, competence and development, institutional stress, dilemmas at work; well-being; structural empowerment, leadership; core self-evaluations, job burnout; job expectation; workload barriers; professional self-concept; age	
Slight relationship with job satisfaction (correlation coefficient < 0.2)	Jayasuriya et al. (2012); Tao et al. (2012), AbuAlRub and Alghamdi (2012), Wang et al. (2012), Gountas et al. (2014), Zhao (2013), Kvist et al. (2014), Cheung and Ching (2014), Dahinten et al. (2016), Kim et al. (2016), Kim et al. (2017), Gatti et al. (2017), Lo et al. (2017)
Age; year of experience; educational level; avoidance or self-blame, social support; compassion fatigue; follower's independent critical thinking, workload; turn over intention; quality of care; empathic concern; transactional leadership style; job position, occupational commitment; nursing staff-to-patient ratio; work status, hospital sector; evidence-based practice implementation	

Teo et al. (2013) established a path model showing direct and statistically significant paths from effectiveness of coping strategies (Path coefficient = 0.37,  $P < 0.001$ ) and nursing stressors (Path coefficient = -0.37,  $P < 0.001$ ) respectively to job satisfaction. In addition, Sobel's test (Preacher and Hayes, 2004) provided evidence to suggest that effective coping strategies have a mediating effect on the relationship between nursing stress to job satisfaction (Sobel = 2.03,  $P = 0.04$ ).

Gillet et al.'s (2013) study showed that work satisfaction was significantly and positively correlated with procedural justice ( $r = 0.24$ ,  $P < 0.001$ ), supervisor autonomy support ( $r = 0.17$ ,  $P < 0.001$ ), need satisfaction ( $r = 0.37$ ,  $P < 0.001$ ) and perceived organizational support ( $r = 0.29$ ,  $P < 0.001$ ). Among them, perceived organizational support and need satisfaction explained 15% of the variance in nurses' work satisfaction. According to the results of Sobel tests (1982), need satisfaction and perceived organizational support fully mediated the relationships of procedural justice and supervisor autonomy support to nurses' work satisfaction. Zhao et al. (2012) examined the relationship between occupational stress, perceived organizational support and job satisfaction among nurses and found that nurses' perceived organizational support partially mediated the relationship between occupational stress and job satisfaction.

Mei and Zhao (2015) explored the effect of psychological capital on nurses' job performance and satisfaction, and the mediating role of positive emotion between them. They found that job satisfaction was significantly positive correlated with psychological capital ( $r = 0.358$ ,  $P < 0.01$ ) and positive emotion ( $r = 0.452$ ,  $P < 0.01$ ). In the structural equation modeling, nurse' positive emotion acted as a partial mediator between psychological capital and job satisfaction with its mediating effect accounting for 61.5% (0.24/0.39) of the whole effect. Further, Jin and Zhang (2015) established a multivariate model to examine whether humor styles mediated the relationship between positive-negative emotion and job satisfaction among nurses. In this model, positive ( $\beta = 0.23$ ,  $P < 0.001$ ) and negative emotion ( $\beta = -0.26$ ,  $P < 0.001$ ) played a positive and negative role on nurses' job satisfaction respectively. In addition, adaptive and maladaptive humor style partly mediated the relationship between positive-negative emotion and job satisfaction.

Utilizing a hypothetical path model, Kim et al. (2017) evaluated the influence of type D personality on job stress and job satisfaction and identified the mediating effects of compassion fatigue, burnout, and compassion satisfaction among nurses in South Korea. The findings revealed that job satisfaction was significantly associated with compassion fatigue ( $r = -0.13$ ,  $P < 0.001$ ), burnout ( $r = -0.57$ ,  $P < 0.001$ ), compassion satisfaction ( $r = 0.69$ ,  $P < 0.001$ ) and job stress ( $r = -0.51$ ,  $P < 0.001$ ). In path analyses, type D personality had significant indirect and total effects on job satisfaction ( $\beta = -0.234$ ,  $P = 0.001$ ;  $\beta = -0.248$ ,  $P = 0.001$ , respectively), but had no significant direct effect on job satisfaction. Burnout ( $\beta = -0.147$ ,  $P = 0.001$ ;  $\beta = -0.063$ ,  $P = 0.001$ ;  $\beta = -0.210$ ,  $P = 0.001$ ) and compassion satisfaction ( $\beta = 0.500$ ,  $P = 0.001$ ;  $\beta = 0.056$ ,  $P = 0.001$ ;  $\beta = 0.556$ ,  $P = 0.001$ ) also had significant direct, indirect, and total effects on the job satisfaction, respectively. Job stress ( $\beta = -0.206$ ,  $P = 0.001$ ;  $\beta = 0.206$ ,  $P = 0.001$ ) had significant direct and total effects, respectively, on job satisfaction. Based on the squared multiple correlations (SMC) values, type D personality, compassion fatigue, burnout, and compassion satisfaction explained 53.8% of the total variance of job satisfaction. Additionally burnout and compassion satisfaction completely mediated the path of type D personality to job satisfaction, namely: a type D personality was significantly associated with job satisfaction via the effect of burnout, compassion satisfaction, and job stress.

Professional commitment is a person's involvement, pledge, promise or resolution towards his/her profession (Fang, 2001). It has an incremental effect on a professional's intention to leave the

organization (Blau and Lunz, 1998). Caricati et al. (2014) investigated the effect of some psychosocial variables on nurses' job satisfaction and found that professional commitment ( $\beta = 0.23$ ,  $Z = 6.64$ ,  $P < 0.001$ ) and work climate ( $\beta = 0.58$ ,  $Z = 16.39$ ,  $P < 0.001$ ) positively and significantly predicted job satisfaction. In addition, the effect of intrinsic versus extrinsic work value orientation on job satisfaction was completely mediated by professional commitment.

In Gao et al.'s (2016) study, the partial mediating effect of psychological empowerment between structural empowerment and nurses' job satisfaction was significant. In addition, nurses' job satisfaction were positively associated with both individual dimensions and total scoring of the structural empowerment ( $r = 0.605$ ,  $P < 0.01$ ) and psychological empowerment ( $r = 0.453$ ,  $P < 0.01$ ).

Various mediating or moderating pathways have been identified with nurses' job satisfaction being mediated by various factors. These findings have the potential to establish structural relationships linking job satisfaction to its related factors, influencing factors, predictors, mediators, to name but a few, and to provide a theoretical and practical framework for managers and administrators (Table 4).

#### 4. Discussion

A shortage of nurses has been a problem for a long time and is expected to continue worldwide. Nearly half of the World Health Organization (2017) members have reported fewer than three nurses per 1000 population with 27% reporting to have less than 1 per 1000 population. The retention of hospital staff nurses has been identified as a key factor to counteract the shortage (Wang et al., 2012; Zhao, 2013; Sabanciogullari and Dogan, 2015; Masum et al., 2016; Chen et al., 2016; Zhang et al., 2016a, b). The shortage of nurses reduces the efficiency and quality of nursing care which adversely affects patient outcomes (Kvist et al., 2014; Roelen et al., 2013; Masum et al., 2016). Empirical studies have highlighted the significant effect of job satisfaction on nurses' retention and turnover intention and on the quality and safety of patient care (Roelen et al., 2013; Masum et al., 2016; Alotaibi et al., 2016). Job satisfaction is therefore an important issue for ensuring an adequate nursing workforce and high quality healthcare.

A range of sources of job satisfaction among nurses have been reported from quantitative as well as qualitative studies, which were reported in the previous reviews (Lu et al., 2005, 2012). Recently, Ravari et al.'s (2012) study revealed that personal beliefs, rather than social interaction or organizational situation, constitute the core of job satisfaction. Thus they argued that the job satisfaction of the Iranian nurses reflected specific backgrounds and cultures which exhibit commonalities with the Eastern culture. The concept of job satisfaction has been examined in a variety of studies conducted in different countries worldwide. While some of the job satisfaction domains identified in previous studies are similar, there are some unique differences in the major themes due to the diversity of culture and values. Although several useful instruments exist, most of them concentrate on the nurses' working environment in general instead of job satisfaction specifically. Hence, there is a need for culturally sensitive instruments reflecting diverse healthcare systems that may be organized in different ways.

The mediating effect explored in studies conducted in the last five years opens up new directions for research into developing holistic perspectives on nurses' job satisfaction. Many factors such as self-esteem, positive emotion, psychological/structural empowerment, organizational/professional commitment were identified as mediators of nurses' job satisfaction revealing the psychological,

**Table 4**  
Mediators of job satisfaction among nurses.

Mediator (M)	Dependent Variable (Y)	Independent Variable (X)	Standardized Beta Coefficient	Key empirical sources
<b>Partial mediating effect:</b>				
Self esteem	job satisfaction	work-family enrichment	0.22	Zhang et al. (2016b)
	job satisfaction	family-work enrichment	0.22	
Affective commitment	job satisfaction	work-family enrichment	0.43	Gao et al. (2016)
	job satisfaction	family-work enrichment	0.43	
Psychological empowerment	job satisfaction	structural empowerment	0.62	
	job satisfaction	extrinsic factors (X <sub>1</sub> ), rewards (X <sub>2</sub> )	−0.091	
Adaptive style	job satisfaction	positive emotion	0.187	Jin and Zhang (2015)
Adaptive style	job satisfaction	negative emotion	0.19	
Maladaptive humor style	job satisfaction	positive emotion	−0.14	Mei and Zhao (2015)
Maladaptive humor style	job satisfaction	negative emotion	0.19	
Positive emotion	job satisfaction	psychological capital	−0.14	
Bullying	job satisfaction	colleague support (X <sub>1</sub> ), competence development (X <sub>2</sub> ), dilemmas (X <sub>3</sub> ), institutional stress (X <sub>4</sub> )	0.24	
			0.11	Olsen et al. (2017)
			0.35	
			−0.14	
			−0.30	
Structural empowerment	job satisfaction	authentic leadership	0.188	Wong and Laschinger (2013)
Organizational commitment	job satisfaction	core self-evaluations	0.219	Peng et al. (2016)
Effective coping strategies	job satisfaction	nursing stress	−0.37	Teo et al. (2013)
Burnout (M <sub>1</sub> ), compassion satisfaction (M <sub>2</sub> )	job satisfaction	type D personality	−0.234	Kim et al. (2017)
Professional commitment	job satisfaction	work climate	0.008	Caricati et al. (2014)
Professional commitment	job satisfaction	intrinsic vs. extrinsic work value orientation	0.084	
<b>Total mediating effect:</b>				
Need satisfaction	nurses' work satisfaction	procedural justice	Not given	Gillet et al. (2013)
Perceived organizational support	nurses' work satisfaction	supervisor autonomy support	Not Given	

professional and environmental mechanisms of job satisfaction more deeply. In addition to the direct effects of job satisfaction being either influencing factors or influenced by other factors, more comprehensive relationships and influences including job satisfaction being the mediator or independent variable and moderation effect have been found. For instance, turnover intention has been identified both as a related factor and influenced by job satisfaction in many studies (Zhang et al., 2016a,b; Zhao et al., 2015; Jayasuriya et al., 2012; Masum et al., 2016; Sabanciogullari and Dogan, 2015; Lo et al., 2017; Choi et al., 2013; Wang et al., 2012; Zhao, 2013). Further Lo et al. (2017) found that stress is another factor in understanding the effect of nurse's job satisfaction on intention to leave. From job stress to intention to leave the hospital, 33.4% and 32.2% of the effect was mediated by job satisfaction. And from job stress to intention to leave the profession, 21.4% and 22.7% of the effect was mediated by job satisfaction which affected the intention to leave the hospital. In Gountas et al.'s (2014) study job satisfaction was affected by surface acting, emotional exhaustion and self-efficacy. While, as a mediator, job satisfaction partially mediated the relationships between surface acting, self-efficacy and emotional exhaustion and customer orientation. And when job satisfaction was not included in the model, the variation in customer orientation (R<sup>2</sup> statistic) fell to 0.23, suggesting that job satisfaction plays a mediating role. In addition, the direct effect of core self-evaluation and organizational commitment on job satisfaction and the negative influence of job satisfaction on job burnout have shown in Peng et al.'s (2016) study. Thus job satisfaction mediated the relationship between core self-evaluations

and job burnout, as well as that between organizational commitment and job burnout. And organizational commitment mediated the relationship between core self-evaluations and job satisfaction. Drawing upon Hochschild's theory, Cottingham et al. (2015) examined the moderation effect of gender between emotional labour and job satisfaction. They found that gender moderated the relationship between two dimensions of emotional labour (surface acting-covering emotion and deep acting) and two outcome measures (job satisfaction and turnover intention). After controlling for felt emotions, display rules, and hours worked per week, gender moderated the relationship of deep acting with job satisfaction, such that the relationship was strong and positive for men and weak for women. These results suggest that nurse managers should develop and implement strategies from a psychological, professional and environmental point of view, such as the adoption of more effective coping strategies, appropriate actions to reduce workplace bullying, involving nurses in decisions, and assisting frontline nurses to cope with organizational change-induced stressors, to enhance the job satisfaction of nurses and eventually to improve patient satisfaction and quality of care. Although findings of these studies confirm that it is important to consider mediators when explaining nurses' job satisfaction, future research is needed to examine the mechanisms in these relationships.

Based on the direct relationship of nurses' job satisfaction, some factors were identified as predictors of job satisfaction in many studies (Zhang et al., 2016a, b; Jin and Zhang, 2015; Liu et al., 2017; Cai et al., 2013; Jayasuriya et al., 2012; Rodwell and Munro, 2013;

Caricati et al., 2014; Choi et al., 2013; Dahinten et al., 2016; Doede, 2017; Sabanciogullari and Dogan, 2015; Shin and Lee, 2016; Kim et al., 2016). The correlational relationship between work environment and job satisfaction was identified in Choi et al.'s (2013) study. Ward practice, staffing and resources, management, co-worker relationship, and professionalism were shown to be significant factors predicting nurse job satisfaction. These findings indicate that managerial strategies of improving nurses' work conditions necessitate detailed resource planning, effective management and the removal of work constraints that affect nursing practice. A model for predicting rural nurse job satisfaction was developed by Jayasuriya et al. (2012) in which ownership, work climate, supervisory support, and community support were found to be significant predictors, accounting for 35% of the total variance in job satisfaction. Among them, the most significant contributing factor was work climate, followed by supervision, which empirically showed the significance of the work climate and supervisory support for job satisfaction of nurses in rural settings. Apart from correlating with job satisfaction, retention willingness was also found to be a significant predictor for retention willingness. The results also revealed that job satisfaction played a partial mediation role in the relationship between perceived professional benefit and retention willingness (Zhao, 2013). Liu et al. (2017) found the correlational relationship between job satisfaction, work engagement and organizational citizenship among nurses. Among these variables, job satisfaction and work engagement had a positive predictive effect on organizational citizenship behaviour with work engagement playing a partial mediation effect between job satisfaction and organizational citizenship behaviour with the mediating effect accounting for 30.8% of the total effect. Furthermore, other predictors of nurses' job satisfaction such as structural empowerment, leader empowering behaviours, psychological empowerment, job control, negative affectivity, and interpersonal justice were also identified (Dahinten et al., 2016; Rodwell and Munro, 2013). Managerial effort aimed at improving patient care and reducing nurse turnover, should be devoted to creating an empowering work environment that fosters job satisfaction within today's health-care environment characterized by shortage of human and financial resources.

## 5. Conclusion

The findings of this review add to the limited body of knowledge regarding nurses' job satisfaction through the identification of many mediating or moderating pathways and verification of several theoretical models. In addition to the previously identified influencing and related factors, which reflect direct effect, the indirect effects and structural relationships were explored to contribute to a deeper and more comprehensive understanding of the complex phenomenon of job satisfaction. However, longitudinal and intervention studies are needed to further validate the proposed structural models. A broader and clear understanding of nurses' job satisfaction and its affecting components may aid the development of effective strategies to address the nursing shortage and increase the quality of patient care. This review highlights how nurses' job satisfaction has subtle complexities that may be associated with different settings, geographical regions and cultural values. Managers should be aware that strategies to improve job satisfaction should be specific to culture and context. No single strategy is appropriate for all nursing personnel. The nurses' job satisfaction and patients' perceptions of care quality appear to be related, which suggests that gaining insights into patients' perceptions of the quality of care and assessments by nurses of their job satisfaction should be key components of quality of care evaluations by nurse managers and administrators.

It is vital to increase nurses' job satisfaction because this has the potential both to improve patients' perceptions of care quality and ensure an adequate nursing workforce to meet healthcare needs. The findings of this review provide nursing managers with the evidence to tailor their supervisory support to specific circumstances rather than taking a one-size-fits-all approach. The strategies based on a comprehensive and causal model may result in long-term benefits for nursing staff and the patients for whom they care. The review's findings are relevant not only for nurse leaders but also for education, service provision, and research.

## Conflict of interest

There are no conflicts of interest.

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