A Meta-Analysis of Factors Related to Job Satisfaction: Focused on Korean Nurses

Sanghoo Yoon 1, *Young A Kim 2

1. Division of Mathematics and Big Data Science, Daegu University, Gyeongsan, Republic of Korea
2. College of Nursing, Jeju National University, Jeju, Republic of Korea

*Corresponding Author: Email: yakim@jejunu.ac.kr

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Abstract

Background: Nurses comprise the majority of the healthcare workforce, and their job satisfaction can have a substantial impact on patient health.

Methods: This study aimed to provide a comprehensive overview of studies that performed statistical analyses focused on the job satisfaction of nurses and relevant factors, as well as synthesizing existing data. Overall, 144 studies published between 1986 and 2018 were reviewed for qualitative synthesis.

Results: The most frequently measured variable was job stress, followed by burnout and turnover intention. Overall, 53 studies published between 1994 and 2018 were reviewed for quantitative synthesis. In the meta-analysis, the weighted mean effect size using a random-effects model was moderate for all variables: -0.539, -0.484, and -0.395 for burnout, turnover intention, and job stress, respectively.

Conclusion: The results revealed a long history of variables related to job satisfaction among Korean nurses since data retrieval was not subject to any restrictions. These findings can be used as evidence for the formulation of policies to enhance the retention of nurses committed to their profession. Further, they can facilitate stable workforce management in healthcare.

Keywords: Nurse; Job satisfaction; Job stress; Burnout; Personnel turnover

Introduction

Nurses comprise the majority of the healthcare workforce, and the quality of nursing care and nurse staffing levels in clinical practice are major factors that impact patient health (1-3). In most Organization for Economic Cooperation and Development (OECD) countries, nurses are playing an increasingly important role not only in traditional healthcare environments such as hospitals and long-term care facilities but also in health management in primary care (4). The OECD average of practicing nurses per capita increased from 7.3 per 1,000 population in 2000 to 9 per 1,000 population in 2015; the corresponding growth in Korea was nearly twofold but far lower—from 3 nurses per 1,000 population to 5.9 (5).

Job satisfaction refers to a pleasant emotional state that results from performing one’s job or evaluating one’s job experiences and is defined as an attitude that perceives one’s work as fun and positive.
Nurses with high job satisfaction enhance an organization’s productivity by committing to their job with a positive attitude, thus reducing turnover. Nurses’ job satisfaction is an important issue in hospital management because job dissatisfaction in this population not only increases turnover and personnel management costs but also poses a risk to patients. Moreover, retaining older nurses is crucial to preventing nursing shortages; the loss of knowledge associated with these experienced veterans may lead to high costs in terms of patient outcomes and safety. The diverse factors related to the job satisfaction of nurses include turnover, turnover intention, stress, burnout, empowerment, job flow, organizational factors, personal characteristics, and financial conditions.

In Korea, there have been some literature reviews pertinent to the job satisfaction of nurses, but no study has adequately synthesized findings since the one performed by Chu. A relatively recent meta-analysis of the relationship between Korean nursing organizational culture and job satisfaction found that an enterprising and friendly culture positively influences the job satisfaction of nurses. From numerous cross-sectional studies about the job satisfaction of nurses in recent years, it is necessary to combine their findings to identify the nurses’ job satisfaction owing to changes in healthcare settings to devise strategies to boost their job satisfaction.

Materials and Methods

Data selection and collection
This study is a systematic review and meta-analysis based on PRISMA guidelines. The key research question established before the study was “What are the factors related to the job satisfaction of Korean nurses?” when the ratio of nurses per capita engaged in clinical practice is lower than the OECD average. The studies for analysis were selected per the Population, Intervention, Comparison, and Outcome criteria, but as this study does not attempt to combine intervention effects, the literature searches were performed based only on participants (nurses) and outcomes (job satisfaction). The search was limited to studies published in Korean journals (updated as of Sep 2018 on the search engines) and reporting correlation coefficients for factors related to job satisfaction and sample size.

When the Research Information Sharing Service and the Korean Information Service System were searched using the keywords “nurse” and “job satisfaction” or “nurse” and “work satisfaction,” 144 studies were identified, and 53 studies that addressed the three most frequently measured variables for quantitative synthesis—job stress, burnout, and turnover intention—were reviewed.

Quality assessment of the selected studies
The quality of the 144 selected studies was rated through a review and agreement process between the two researchers using the Joanna Briggs Institute (JBI) criteria. The quality of one intervention study was rated using nine items from the JBI Checklist for Quasi-Experimental Studies.

Data analysis
A random effects model was used because the study population could not be considered homogeneous. If the moderators did not explain study heterogeneity, a hierarchical cluster analysis was performed using the complete linkage method based on the Euclidean distance. The R software was used for analysis, with the “metacor” function in the “meta” package and the “escalc” function in the “metafor” package. The fail-safe N (Nfs) was calculated to verify the reliability of publication bias and prove the robustness of a pooled effect size.
Results

General characteristics of studies selected for systematic review and meta-analysis

Overall, 144 prior studies were reviewed. The majority of the studies were published after 2010 ($n=75$), followed by those in the 2000s ($n=56$), 1990s ($n=11$), and between 1986 and 1989 ($n=2$).

The most frequently used instrument was the Index of Work Satisfaction by Slavitt et al. (22), used in 54 studies. Job stress ($n=33$), burnout ($n=15$), and turnover intention ($n=11$) were the most frequently assessed (Table 1).

Fifty-three studies (meta-analyzed) published between 1994 and 2018 were found to have addressed the three major factors related to the job satisfaction of nurses (Table 2).
Table 1: General characteristic of qualitative synthesis (n=144)

| Variable                           | Frequency | %   |
|------------------------------------|-----------|-----|
| Publication year                   |           |     |
| 1986-1989                          | 2         | 1.4 |
| 1990-1999                          | 11        | 7.6 |
| 2000-2009                          | 57        | 39.6|
| 2010-2018                          | 74        | 51.4|
| Study design                       |           |     |
| Cross-sectional survey             | 142       | 98.6|
| Mixed method                       | 1         | 0.7 |
| Non-randomized controlled trial    | 1         | 0.7 |
| Gender                             |           |     |
| All included                       | 44        | 30.6|
| Female only                        | 9         | 6.2 |
| Male only                          | 1         | 0.7 |
| Not reported                       | 90        | 62.5|
| Marital status                     |           |     |
| All included                       | 126       | 87.5|
| Married only                       | 3         | 2.1 |
| Not reported                       | 15        | 10.4|
| Workplace                          |           |     |
| Hospital nurse                     | 125       | 86.8|
| Community nurse                    | 13        | 9.0 |
| Army nurse                         | 1         | 0.7 |
| Correctional nurse                 | 1         | 0.7 |
| School nurse                       | 1         | 0.7 |
| Community + Hospital nurse         | 2         | 1.4 |
| Correctional + Hospital nurse      | 1         | 0.7 |
| Work shift type                    |           |     |
| All included                       | 43        | 29.9|
| Day only                           | 16        | 11.1|
| Shift only                         | 1         | 0.7 |
| Not reported                       | 84        | 58.3|
| Sample size calculation            |           |     |
| Yes                                | 49        | 34.0|
| No                                 | 95        | 66.0|
| Measurements for job satisfaction  |           |     |
| Slavitt et al. (1978)              | 54        | 37.5|
| Stamps et al. (1978)               | 21        | 14.6|
| Others                             | 69        | 47.9|
| Related variables                  |           |     |
| Job stress                         | 33        | 9.4 |
| Burnout                            | 15        | 4.3 |
| Turnover intention                 | 11        | 3.1 |
| Others                             | 293       | 83.2|
Table 2: General characteristic of quantitative synthesis (n=53)

| ID | First author | Year | Studies | Sample | Related variables | Quality score |
|----|--------------|------|---------|--------|-------------------|---------------|
|    |              |      | Gender  | Age (group or M±SD) | Marital status | Work place | Work type | n | Cal. |               |              |
| 1  | Noh          | 2018 | All     | All     | All               | H            | All       | 239 | +   | JS             | 8             |
| 2  | Kwon         | 2017 | NR      | All     | All               | School       | D          | 131 | +   | B              | 6             |
| 3  | Hwang        | 2017 | All     | All     | NR                | H            | All       | 85  | -   | TI             | 6             |
| 4  | Ko           | 2016 | NR      | All     | All               | H            | NR        | 130 | +   | JS             | 6             |
| 5  | Kim          | 2016 | NR      | All     | All               | Com          | D          | 70  | +   | JS             | 6             |
| 6  | Oh           | 2016 | NR      | All     | All               | H            | NR        | 200 | +   | JS, B          | 6             |
| 7  | Jang         | 2016 | All     | 28.7±3.9| All               | H            | All       | 136 | +   | JS, B          | 8             |
| 8  | Jun          | 2016 | NR      | All     | All               | H            | S         | 292 | -   | JS             | 6             |
| 9  | Jeong        | 2016 | All     | All     | All               | H            | All       | 100 | +   | TI             | 6             |
| 10 | Park         | 2015 | All     | 41.8±9.3| All               | All          | H         | 206 | +   | B              | 6             |
| 11 | Yi           | 2015 | NR      | All     | All               | All          | H         | 312 | +   | JS             | 6             |
| 12 | Chae         | 2015 | All     | 29.5    | All               | All          | H         | 154 | +   | TI             | 8             |
| 13 | Kim          | 2014 | All     | All     | All               | H            | NR        | 142 | -   | JS             | 8             |
| 14 | Park         | 2014 | NR      | 38.5    | All               | Com          | D          | 237 | -   | TI             | 6             |
| 15 | Son          | 2014 | All     | 31.4±5.2| All               | H            | D         | 153 | +   | JS             | 8             |
| 16 | Yi           | 2014 | NR      | All     | All               | H            | All       | 312 | +   | TI             | 6             |
| 17 | Chung        | 2014 | All     | 32.9±5.3| All               | H            | NR        | 63  | +   | B              | 8             |
| 18 | Jung         | 2014 | All     | All     | All               | H            | NR        | 220 | +   | TI             | 8             |
| 19 | Choi         | 2014 | All     | All     | NR                | H            | All       | 240 | +   | TI             | 6             |
| 20 | Kim          | 2013 | NR      | All     | All               | H            | NR        | 285 | -   | JS             | 6             |
| 21 | Kim          | 2013 | NR      | 27.5±4.6| All               | H            | All       | 205 | +   | B              | 4             |
| 22 | Park         | 2013 | F       | 41.7±5.7| All               | Com          | D          | 149 | +   | JS             | 8             |
| 23 | Lee          | 2013 | NR      | 30.2±7.6| All               | H            | NR        | 210 | +   | JS             | 6             |
| 24 | Lim          | 2013 | All     | 40.8±7.1| All               | Com          | All       | 201 | +   | JS             | 6             |
| 25 | Oh           | 2012 | All     | All     | NR                | H            | NR        | 356 | +   | JS             | 6             |
| 26 | Kim          | 2011 | All     | 30.2±6.9| All               | H            | NR        | 433 | -   | JS             | 8             |
| 27 | Kim          | 2011 | NR      | 37.2    | All               | Com          | D          | 109 | -   | JS             | 6             |
| 28 | Park         | 2011 | NR      | 27.9±5.3| All               | H            | NR        | 300 | -   | JS             | 6             |
| 29 | Baik         | 2011 | NR      | 34.1±7.1| All               | H            | NR        | 337 | -   | B              | 6             |
| 30 | Lee          | 2011 | All     | 36.4±7.4| All               | H            | All       | 206 | +   | TI             | 8             |
| 31 | Han          | 2011 | All     | 29.3±6.4| All               | H            | NR        | 240 | +   | B              | 8             |
| 32 | Kang         | 2010 | NR      | 26.9±6.4| All               | All          | H         | 218 | -   | JS             | 6             |
| 33 | Kim          | 2010 | NR      | 37.9±7.2| All               | Com          | All       | 78  | +   | JS, TI         | 4             |
| 34 | Kim          | 2010 | All     | All     | All               | H            | NR        | 122 | -   | JS             | 8             |
| 35 | Shin         | 2009 | F       | 24.9±1.7| NR                | H            | NR        | 32  | -   | B              | 8             |
| 36 | Choi         | 2009 | NR      | All     | All               | H            | NR        | 203 | -   | TI             | 6             |
| 37 | Sung         | 2008 | All     | 28.5±5.3| All               | H            | NR        | 153 | -   | B              | 8             |
| 38 | Kim          | 2007 | NR      | All     | All               | H            | D         | 139 | -   | JS, B          | 6             |
| 39 | Kim          | 2007 | NR      | 28.7±7.0| All               | H            | NR        | 123 | -   | JS             | 6             |
| 40 | Park         | 2007 | NR      | All     | All               | H            | All       | 225 | -   | JS             | 6             |
| 41 | Sun          | 2007 | NR      | All     | All               | All          | H         | 302 | -   | JS             | 6             |
| 42 | Sung         | 2007 | NR      | 26.6    | All               | H            | NR        | 280 | -   | JS             | 6             |
| 43 | Kang         | 2006 | NR      | All     | All               | H            | NR        | 173 | -   | JS             | 6             |
| 44 | Kim          | 2005 | NR      | 28.0±5.6| All               | H            | NR        | 302 | -   | JS             | 6             |
| 45 | Kim          | 2005 | NR      | 38.3    | All               | All          | H         | 205 | -   | JS, B          | 8             |
| 46 | Lee          | 2004 | F       | 33.3    | All               | H            | All       | 220 | -   | JS             | 6             |
| 47 | Lee          | 2003 | NR      | 28.6±6.5| All               | H            | NR        | 126 | -   | JS             | 6             |
| 48 | Choi         | 2003 | NR      | 34.6    | NR                | H            | D         | 154 | -   | JS             | 6             |
| 49 | Lee          | 2001 | NR      | NR      | NR                | H            | NR        | 131 | -   | JS             | 6             |
| 50 | Song         | 1998 | NR      | 28.8    | All               | H            | All       | 225 | -   | B              | 6             |
| 51 | Yang         | 1998 | NR      | 30.3    | All               | H            | NR        | 367 | -   | JS             | 6             |
| 52 | Lee          | 1996 | NR      | All     | All               | H            | NR        | 132 | -   | JS             | 6             |
| 53 | Lee          | 1994 | NR      | 27.4    | All               | H            | NR        | 104 | -   | B              | 6             |

B, burnout; Cal, calculation; Com, community; Cor, correctional; D, day only; F, female; H, hospital; JS, job stress; NR, not reported; S, shift only; TI, turnover intention.
Meta-analysis
Although 33 studies examined the correlation between the job satisfaction of nurses and job stress, a meta-analysis was performed on 37 studies because four studies presented correlation coefficients for job satisfaction and job stress for two different nurse groups. The overall effect size was -0.395, but there was heterogeneity among studies ($I^2=85\%$, $r^2=0.033$, $P<.001$). A meta-regression was performed to determine whether gender, marital status, workplace, and work shift type explained the correlation between job satisfaction and job stress. The amount of heterogeneity accounted for was 0%, and the test of moderators was not statistically significant ($Q_m=4.372$, $P=.822$). Figure 2 shows the results of the hierarchical cluster analysis with five clusters.

![Fig. 2: The forest plot between job satisfaction and job stress](http://ijph.tums.ac.ir)
Fifteen studies assessed the correlation between the job satisfaction of nurses and burnout; however, a meta-analysis was performed on 16 studies because ID 6 (28) presented findings on both intensive care unit and general ward nurses. The overall effect size was -0.539, indicating a negative correlation of moderate size, but there was heterogeneity among the studies ($I^2=90\%$; $r^2=0.059$, $P<.001$). In the meta-regression, the amount of heterogeneity accounted for was 3%, and the test of moderators was not statistically significant ($Q_m=6.636$, $P=.356$). Hierarchical cluster analysis with three clusters showed that all studies with subgroups were homogeneous (Fig. 3).

![The forest plot between job satisfaction, burnout and turnover intention](http://ijph.tums.ac.ir)
Eleven studies assessed the correlation between the job satisfaction of nurses and turnover intention. The overall effect size was -0.484, indicating a negative correlation of moderate size, but there was heterogeneity among the studies ($I^2=64\%$; $r^2=0.010$, $P=.002$). In the meta-regression analysis, $R^2$ was 0%, and the test of moderators was not statistically significant ($Q_m=1.595$, $P=.902$). Hierarchical cluster analysis with two clusters showed that all studies with subgroups were homogeneous (Fig. 3).

**Discussion**

The studies reviewed were published between 1986 and 2018, with the majority being published after 2010, which suggests that the job satisfaction of nurses has become an increasingly significant problem in Korea. This highlights the rising importance of studies examining job satisfaction of Korean nurses in terms of management of healthcare personnel (3). Of the studies reviewed, 98.6% were cross-sectional and 86.8% enrolled only hospital nurses, which warrants more diverse methodologies. Moreover, a considerable percentage (66.0%) did not present evidence for sample size computation in their data collection, possibly due to the inclusion of several older studies that did not provide this information, and this factor should be addressed in future research.

Thirty-one instruments were used to assess the job satisfaction of nurses, and the Index of Work Satisfaction developed by Slavitt et al. (22) was the most frequently used. The most frequently assessed factor related to the job satisfaction of nurses was job stress, followed by burnout and turnover intention. This differs from the factors identified by Blegen (76), namely, stress and organizational commitment, as well as those identified by Zangaro and Soeken (77), namely, job stress, nurse-physician collaboration, and autonomy. Further, this finding also differs from the factors identified by Chu (13), namely, organizational commitment, leadership styles, professional self-concept, organizational characteristics, and autonomy. This result is significant in that it elucidates the factors on which Korean researchers have focused in recent years.

The overall effect size for burnout was -0.539, which was higher than the mean observed correlation (-0.40) and mean corrected correlation (-0.50) among psychiatric nurses. The overall effect size for the turnover intention was -0.484, markedly higher than that found by Yin and Yang (79) (-0.23) among Taiwanese nurses. Further, it differed slightly from that for intent to leave (-0.54) (80). The overall effect size for job stress was -0.395, which was lower than that (-0.609) found by Blegen (76) among nurses, that (-0.43) found by Zangaro and Soeken (77) among nurses, and that (-0.43) found by Saber (9) among frontline nurses. According to Cohen (81), job stress, burnout, and turnover intention, all have moderate effect sizes. Statistically, significant heterogeneity was found for all three factors, which suggests that, although the data show a moderate effect size, there are substantial differences between individual studies. This is consistent with a previous report (9) indicating that studies may differ in their characteristics, such as patient management unit, geological location, and work environment type. Moreover, heterogeneity between studies was expected owing to differences in study contexts, as the years of publication ranged from 1994 to 2018, as well as due to differences in the methods of analysis. Despite heterogeneity, the lowest Nfs for the three factors was 2,576.

Negative emotions among nurses result in job dissatisfaction and ultimately hinder organizational growth (3). Job dissatisfaction not only worsens the already low retention of nurses but may also serve as a primary predictor of intent to leave (11). Organizations should note that patient satisfaction is markedly low in institutions with a high percentage of nurses burnt out and dissatisfied with their work (8). Multilateral attempts to reduce job stress, burnout, and turnover intention among nurses in Korea would increase nurse retention, and boost patient satisfaction and improve quality of care.
Finally, this study included only Korean publications, most of which employed cross-sectional designs and analyzed the correlations between job satisfaction and other major factors in the entire nurse population without restrictions on work shifts or places of work. Therefore, these results should be interpreted and generalized with caution. Subsequent studies should conduct a meta-analysis of the major factors predicting the job satisfaction of Korean nurses to shed light on specific effect sizes by the predictor.

Conclusion

As nurses account for the majority of healthcare personnel, exploring measures to increase their job satisfaction is crucial in managing the quality of healthcare services. In this study, the job satisfaction of Korean nurses was directly correlated with job stress, burnout, and turnover intention. It is, therefore, essential to make integrated efforts at the individual, institutional, and governmental levels to help regulate the variables directly related to nurses’ job satisfaction, along with demanding further professional commitment from them. It is also important to reduce turnover intention in a workforce that is already below the OECD average.

Journalism Ethics considerations

Ethical issues (including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflict of interests

The authors declare that they have no conflicts of interest.

References

1. Asif M, Jameel A, Hussain A, et al (2019). Linking transformational leadership with nurse-assessed adverse patient outcomes and the quality of care: assessing the role of job satisfaction and structural empowerment. Int J Environ Res Public Health, 16 (13): 2381.
2. Jeong EY (2013). Empowerment and job satisfaction among clinical nurses in South Korea: systematic review. J Korean Acad Nurs Adm, 19 (5): 599-612.
3. Jeong GS, Jung MS (2013). Job satisfaction among Korean nurses: a literature review. J Muscle Jt Health, 20 (3): 235-46.
4. Organization for Economic Cooperation and Development. Health at a glance 2017 [Internet]; 2017. Available from: https://www.oecd-ilibrary.org/sites/health_glance-2017-56-en/index.html?itemId=/content/component/health_glance-2017-56-en
5. Organization for Economic Cooperation and Development. OECD health statistics 2017 [Internet]; 2017. Available from: https://doi.org/10.1787/888933604761
6. Stamps PL, Piedmont EB, Slavitt DB, et al (1978). Measurement of work satisfaction among health professionals. Med Care, 16 (4): 337-52.
7. Karlsson AC, Gunningberg L, Bäckström J, et al (2019) . Registered nurses’ perspectives of work satisfaction, patient safety and intention to stay – a double-edged sword. J Nurs Manag, 27 (7): 1359-1365.
8. McHugh MD, Kutney-Lee A, Cimiotti JP, et al (2011). Nurses’ widespread job dissatisfaction, burnout, and frustration with health benefits signal problems for patient care. Health Aff (Millwood), 30 (2): 202-210.
9. Saber DA (2014). Frontline registered nurse job satisfaction and predictors over three decades: a meta-analysis from 1980 to 2009. Nurs Outlook, 62 (6): 402-14.
10. Robert Wood Johnson Foundation. The importance of the older and experienced nurse in
11. Lu H, Zhao Y, While A (2019). Job satisfaction among hospital nurses: a literature review. Int J Nurs Stud, 94: 21-31.

12. Ahn SH (2000). Analysis of studies on job satisfaction among Korean nurses. J Korean Acad Nurs Adm, 6 (3): 319-31.

13. Chu YS. A meta-analysis of related variables of nurse’s job satisfaction [Master’s Thesis]. Korea University, Seoul, Korea; 2003.

14. Chung HJ. The relationship between organizational culture and job satisfaction among Korean Nurses: A meta-analysis [Master’s Thesis]. Catholic University, Seoul, Korea; 2018.

15. Kim SY, Park JE, Seo HJ, et al (2011). NECA’s guidance for undertaking systematic reviews and meta-analyses for intervention. Seoul: National Evidence-based Healthcare Collaborating Agency, 25.

16. Liberati A, Altman DG, Tetzlaff J, et al (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. J Clin Epidemiol, 62 (10): e1-34.

17. Joanna Briggs Institute. Critical appraisal tools [Internet]. Available from: https://jbi.global/critical-appraisal-tools

18. Karami H, Taheri M (2017). A novel framework to generate clustering algorithms based on a particular classification structure. In: Artificial Intelligence and Signal Processing Conference (AISP), 2017 Oct 25-27; Shiraz, Iran; 2017. pp. 201-04.

19. Schwarzer G (2007). Meta: An R package for meta-analysis. R news, 7 (3): 40-5.

20. Viechtbauer W (2010). Conducting meta-analyses in R with the metafor package. J Stat Softw, 36 (3): 1-48.

21. Acar F, Seurinck R, Eickhoff SB, et al (2018). Assessing robustness against potential publication bias in activation likelihood estimation (ALE) meta-analyses for fMRI. PloS One, 13 (11): e0208177.

22. Slavitt DB, Stamps PL, Piedmont EB, et al (1978). Nurses’ satisfaction with their work situation. Nurs Res, 27 (2): 114-20.

23. Noh JR, Choi EA (2018). Relationship of job stress and job satisfaction by types of nurses’ leisure activities. J Digit Converg, 16 (1): 207-215.

24. Kwon OY, Park KS (2017). The influences of burnout on job satisfaction on school health teachers (school nurse): focused on the mediating effects of self-leadership. J Korean Soc Sch Health, 30 (1): 1-11.

25. Hwang JW, Bae JY (2017). Influence of mental health nurses’ moral distress and job satisfaction on turnover intention. J Korean Acad Psychiatr Ment Health Nurs, 26 (4): 325-32.

26. Ko YJ (2016). A study of the effect of emotional intelligence and job stress on the job satisfaction for nurses. Journal of The Korean Data Analysis Society, 18 (4): 2245-56.

27. Kim SY, Kim SM (2016). MBTI personality types, ways of coping with job stress, and job satisfaction of visiting nurses working at a public health care center. J Korean Health & Fundamental Med Sci, 9 (2): 51-9.

28. Oh EH, Yang SM, Kim SH, et al (2016). Compare the level of job stress, burn-out and job satisfaction between intensive care unit nurses and general unit nurses. Journal of the Korea Institute of Oriental Medical Informatics, 22 (1): 27-36.

29. Jang TU, Choi EF (2016). Relationships between occupational stress, burnout and job satisfaction of physician assistants. J Korean Public Health Nurs, 30 (1): 122-35.

30. Jun YH, Song YS (2016). The moderating effect of the leisure satisfaction in the job stress on job satisfaction of nurses on shift work. Korean Journal of Occupational Health Nursing, 25 (3): 208-215.

31. Jeong YH, Lee CS, Choe HN, et al (2016). Emotional labor, job satisfaction and turnover intention of nurses in the regional general hospital. The Journal of the Korea Contents Association, 16 (1): 708-19.

32. Park JW, Choi EF (2015). Factors influencing job satisfaction of nurses working in long-term care hospitals: Focused on burnout and burden for caring problematic behaviors in dementia. J Korea Acad Industr Coop Soc, 16 (11): 7403-7413.

33. Yi HJ, Cho YC (2015). Relationship between job stress and job satisfaction among nurses in general hospitals. J Korea Acad Industr Coop Soc, 16 (8): 5314-24.
34. Chae SN, Ko IS, Kim IS, et al (2015). Effect of perception of career ladder system on job satisfaction, intention to leave among perioperative nurses. *J Korean Acad Nurs Admin*, 21 (3): 233-242.

35. Kim HJ, Bae JY (2014). The degree of job stress, self-efficacy and job satisfaction in psychiatric nurses. *Journal of Korean Association for Crisis and Emergency Management*, 6 (2): 21-32.

36. Park JS, Oh YJ (2014). Factors influencing turnover intention of customized home health care nurse. *J Agri Med Community Health*, 39 (2): 94-103.

37. Son SS, Yang SJ (2014). Job stress and job satisfaction among nurses in gastrointestinal endoscopy units. *J Korean Clin Nurs Res*, 20 (2): 189-99.

38. Yi HJ, Cho YC (2014). Relationship between job satisfaction and turnover intention among nurses in general hospitals. *J Korea Acad Industr Coop Soc*, 15 (7): 4404-15.

39. Chung BY, Han JY (2014). Influential factors related to job satisfaction in hospice nurses: Focus on emotional labor and burnout. *J Korean Acad Nurs Admin*, 20 (3): 322-331.

40. Jung HY, Sung MH (2014). Relationships among work environment, job satisfaction and turnover intention of nurses in an emergency department. *J East-West Nurs Res*, 20 (1): 29-36.

41. Choi YS (2014). Nursing professionalism, job satisfaction and turnover intention of nurses in small and medium-sized hospitals focused on “I” city. *J Korea Acad Industr Coop Soc*, 15 (5): 2695-2702.

42. Kim JH, Jo HS (2013). A comparative study on job stress and satisfaction between ward nurses and outpatient nurses. *Korean J Occp Health Nurs*, 22 (2): 83-92.

43. Kim HS, Jeong EJ, Park KY (2013). Influences of nurses’ attitudes toward sprain pains, pain knowledge, work overload and work satisfaction on burnout among nurses. *Journal of the Korean Data Analysis Society*, 15 (5): 2645-58.

44. Park MM, Han SJ (2013). Relations of job satisfaction with emotional labor, job stress, and personal resources in home healthcare nurses. *J Korean Acad Community Health Nurs*, 24 (1): 51-61.

45. Lee AK, Yeo JY, Jung SW, et al (2013). Relations on communication competence, job-stress and job-satisfaction of clinical nurse. *The Journal of the Korea Contents Association*, 13 (12): 299-308.

46. Lim HJ, Gang MH, Oh KO (2013). Nursing activity, job stress, and job satisfaction of nurses in community mental health facilities. *J Digit Converg*, 11 (12): 507-513.

47. Oh JW, Han JS, Moon YS (2012). Study on the awareness, satisfaction and job stress of nurses using EMR system. *J Digit Converg*, 10 (8): 257-64.

48. Kim BN, Oh HS, Park YS (2011). A study of nurses’ resilience, occupational stress and satisfaction. *Korean J Occp Health Nurs*, 20 (1): 14-23.

49. Kim H, Kim HL (2011). A study on occupational satisfaction and stress of visiting nurses at district health centers in Chungnam province. *Korean J Occp Health Nurs*, 20 (2): 204-211.

50. Park HM, Lee HS (2011). A study of communication style, critical thinking disposition, job satisfaction and job stress in hospital nurses. *Perspectives in Nursing Science*, 8 (2): 105-112.

51. Baik SH, Hwang JY, Lee DY, et al (2011). A study of the job satisfaction, professional nursing competence and burn-out in clinical nurses. *Holistic Health Science*, 1 (1): 73-87.

52. Lee JH, Jin SJ, Ju HJ (2011). Impact of the organizational commitment and organizational culture of nursing and turnover intention on the job satisfaction of public hospital nurses. *Health Soc Sci*, 30 (1): 205-30.

53. Han KS, Park YH, Kim SR (2011). The influence of stress-related personality traits, hardness, and burnout on job satisfaction in nurse. *Korean J Stress Res*, 19 (1): 79-87.

54. Kang HL (2010). A study of occupational satisfaction, stress and customer orientation of upper-scale general hospital nurses. *Korean J Occp Health Nurs*, 19 (2): 268-77.

55. Kim SJ, Choi MS, Sung KW (2010). Variables affecting competency of nurses in nursing homes. *J Korean Gerontol Nurs*, 12 (1): 29-39.

56. Kim MJ, Hong HS (2010). Job stressors and job satisfaction according to social support for correctional nurses. *Journal of Kyungpook Nursing Science*, 14 (1): 15-29.

57. Shin EH, Jung HG, Eun HB, et al (2009). Application of sociodrama for reducing burnout of nurses in general hospital. *Korean J Psychosom Med*, 17 (2): 62-67.

Available at: [http://ijph.tums.ac.ir](http://ijph.tums.ac.ir)
58. Choi EH, Kim JH, Lee HS, et al (2009). The effect of the intramural marketing activities on nurses' job satisfaction and turnover intention. J Korun Clin Nurs Res, 15 (1): 29-41.
59. Sung MH (2008). Relationship of the experience of violence to burnout and job satisfaction in emergency department nurses. J Korean Clin Nurs Res, 14 (2): 83-92.
60. Kim JO, Kim IS (2007). A study on the relationship of work stress, job satisfaction and burnout experience among medical insurance review nurses. Med J Chosun Univ, 32 (3): 23-34.
61. Kim JY, Hong JY (2007). Self-leadership, job stress and job satisfaction among clinical nurses. Journal of Korean Academy of Nursing Administration, 13 (2): 184-190.
62. Park JI, Jung SH, Chae YM (2007). Analysis of influencing factors that influence on the job satisfaction of nurses involved in medical insurance reviews. Health Policy and Management, 17 (4): 82-98.
63. Sung MH, Kim HW, Kim JW (2007). A comparative study on job stress and job satisfaction between preceptors and precepts. Korean J Health Promot Dis Prev, 7 (2): 131-8.
64. Sung MH, Yoon HO, Lee HJ (2007). A study on relationship between job stress, burnout experience and job satisfaction of nurses. Korean Journal of Occupational Health Nursing, 16 (2): 147-57.
65. Kang SJ, Kim IS (2006). A comparative study on the job stress and satisfaction of the oriental and western common university hospital nurses. Med J Chosun Univ, 31 (3): 90-101.
66. Kim JH, Hyun MY (2005). The moderating effects of social support between job stress and job satisfaction in staff nurses. Korean Journal of Occupational Health Nursing, 14 (2): 108-17
67. Kim HK, Ji HS, Ryu EK, et al (2005). Factors influencing on burnout of the nurses in hospitals. Clin Nurs Res, 10 (2): 7-18.
68. Lee ES, Jeong JY, Jeon MH (2004). The relationship between the satisfaction of benefits, job satisfaction and turnover intention of nurses in small-medium sized hospitals. The Korean Nurse, 43 (4): 66-81.
69. Lee KM, Hong MS (2003). A study on relationship of work stress, fatigue, and job satisfaction of emergency room nurses. Chonnam Journal of Nursing Science, 8 (1): 87-103.
70. Choi SH, Lee EJ, Park MJ (2003). Relationship between work stress and job satisfaction experienced by nurses in medical insurance. Journal of Korean Academy of Fundamentals of Nursing, 10 (3): 354-360.
71. Lee JA, Kim TS, Park IS (2001). The relationship of job stress, coping strategies and job satisfaction of operating room nurses. Chonnam Journal of Nursing Academy, 4 (1): 41-52.
72. Song MS, Kang KJ, Lee MH (1998). Relationships between job satisfaction and burnout experience among nephrology nurses. J Korean Acad Adult Nurs, 10 (1): 32-47.
73. Yang HJ, Park JS (1998). A survey on the work stress, interpersonal conflict resolution strategy and job satisfaction in clinical nurse. J Korean Community Nurs, 9 (2): 533-49.
74. Lee IS, Lee TY, Lee OK (1996). A study of job satisfaction, job stress and level of stress symptom among nurses in some private general hospitals. The Korean Central Journal of Medicine, 61 (10): 797-805.
75. Lee SJ, Chung SH (1994). A study on the burnout and job satisfaction of operating room nurses. Journal of Chonbuk National University, 37 (1): 245-56.
76. Blegen MA (1993). Nurses' Job satisfaction: A meta-analysis of related variables. Nurs Res, 42 (1): 36-41.
77. Zangaro GA, Soeken KL (2007). A meta-analysis of studies of nurses' job satisfaction. Res Nurs Health, 30 (4): 445-58.
78. Melchior ME, Bours GJ, Schmitz P, et al (1997). Burnout in psychiatric nursing: a meta-analysis of related variables. J Psychiatr Ment Health Nurs, 4 (3): 193-201.
79. Yin JC, Yang KP (2002). Nursing turnover in Taiwan: A meta-analysis of related factors. Int J Nurs Stud, 39 (6): 573-81.
80. Irvine DM, Evans MG (1995). Job satisfaction and turnover among nurses: integrating research findings across studies. Nurs Res, 44 (4): 246-53.
81. Cohen J (1977). Statistical power analysis for the behavioral sciences. New York: Academic Press.