



Literature Review

Factors Affecting and Affected Nurse's Job Satisfaction Before and During COVID-19: A Systematic Literature Review

Martha Oktavia Setyaningrum^{1*}, Nursalam Nursalam², Rizki Fitryasari P.K², Silvia Farhanidiah¹ and Gabriella Ester Jermia¹

¹Master of Nursing Study Program, Faculty of Nursing, Universitas Airlangga, Surabaya, East Java, Indonesia

²Faculty of Nursing, Universitas Airlangga, Surabaya, East Java, Indonesia

ARTICLE HISTORY

Received: June, 23 2021
Revised: January, 20 2022
Accepted: February, 2 2021
Available online: April, 1 2022

KEYWORDS

job satisfaction; nursing management; COVID-19; systematic literature review

CORRESPONDING AUTHOR

Martha Oktavia Setyaningrum
martha.oktavia.setyaningrum-2021@fkip.unair.ac.id
Master of Nursing Study Program, Faculty of Nursing, Universitas Airlangga, Surabaya, East Java, Indonesia

ABSTRACT

Introduction: The global pandemic COVID-19 has affected health services including nursing. During the pandemic COVID-19, the high need on nursing services resulted imbalances between demands and supply of nurses, and less of job satisfaction. This study was aimed to systematically identify factors associated with nurse's job satisfaction before and during the pandemic COVID-19.

Method: This study was reviewing published papers that met the inclusion criterias. Included studied were assessed for its quality using the Joanna Briggs Institute's critical appraisal checklists. Four electronic databases; ScienceDirect, Scopus, SAGE and PubMed were accessed comprehensively to retrieved targeted articles published from 2017 to 2020. A PRISMA 2020 flow diagram was applied to report the stages of search strategies.

Results: A total 26 studies were selected in this review. Factors affecting nurse's job satisfaction before and during the pandemic COVID-19 can be classified as personal factors, organizational factors, and psychological factors. Psychosocial risk, emotional intelligence, workload, supervisor quality, and salary were found to have strong association with job satisfaction. Thus, turnover and burnout were the most frequent reasons reported by nurses before the pandemic COVID-19.

Conclusion: Nurse's job dissatisfaction resulted turnover and burnout. The current study underlined three factors affecting nurse's job satisfaction as follow: personal, organizational and psychological factors. Therefore, it's imperative to increase job satisfaction by way controlling the aforementioned factors.

Cite this as:

Setyaningrum, M.O., Nursalam, N., Fityasari, R., Farhanidiah, S., & Jermia, G. E. (2022). Factors Affecting and Affected Nurse's Job Satisfaction Before and During COVID-19: A Systematic Literature Review. *Fundam Manaj. Nurs. J.* 5(1), 1-17. doi.org/10.20473/fmnj.v5i1.36866

1. INTRODUCTION

Currently, technological developments and globalization in the industrial revolution 4.0 rise challenges for the growth of hospital industry. The high expectation of the community to get the best health service from hospital is challenge for hospital management. This causes hospital must maintain and improve the quality of health service in order that hospital can be accepted its existence (Sidin et

al., 2021). Furthermore, pandemic of Coronavirus Disease 2019(COVID-19) has become new challenge lately for hospital. Nurses as the front line have a direct impact on maintaining the quality of health services in this situation (Sharif Nia et al., 2021).

Nurses have a key role to contribute in maintaining the quality of hospital services. Nurses are the largest health workers in hospitals around 60% and as primary service providers in health services (Bell et al., 2020). The welfare of nurses is

an important point that must be considered by organizations in achieving quality service quality. Welfare for health workers can be achieved if the health needs and satisfaction of all involved in the care process are met such as job satisfaction for nurses (De Simone et al., 2018). Therefore, nurses' job satisfaction is crucial point for hospital to maintain the quality of health service.

The shortage of nurses is still a problem globally. The global shortage of nurses was estimated at 6.6 million in 2016 and 5.9 million in 2018. Likewise, it is predicted to be 5.7 million in 2030 (WHO, 2020). The large number of labor shortages globally indicates that this problem is enormous for the health care workplace and called as worrying global phenomenon. The shortage of nurses is associated with turnover of nurses from their workplaces (De Simone et al., 2018). Job dissatisfaction is a strong reason for nurse to leave their jobs (A. P. Putra et al., 2020). Job satisfaction is an emotional condition that is taken from the consequences of evaluating their work or work experience. Job satisfaction for nurses can determine success in treating patients. Higher job satisfaction of nurses will increase their ability to give quality care to patients. Patient satisfaction can be fulfilled if nurses can achieve job satisfaction. Job satisfaction affects nurses' personal quality of life (Bolandianbafghi et al., 2017). Moreover, nurses are a front-line health care provider in pandemic COVID-19. Nurses are faced with various situations while caring for COVID-19 patients such as high workloads, long work shifts with unknown diversity and high demands, fear of contracting from patients, and high mortality rates. It all causes stress on nurses in workplace and ultimately lead to job dissatisfaction (Said & El-Shafei, 2021). There is an impact of job dissatisfaction on nurses such as labor disputes that cost money, turnover, and risks to patients (Aloisio et al., 2021).

Theory of job satisfaction has been conveyed by many experts. The most popular is Herzberg dual-factor or motivation-hygiene theory. The motivation factor is known as the intrinsic factors. These factors such as achievement and recognition, work itself, responsibility and advancement. The hygiene factor is known as the extrinsic factor. These factors are salary, supervision, company policies and administrative practices, benefits, job security, interpersonal relations, and work environment (Herzberg et al., 1959). However there has been no systematic assessment about the factors that affecting and are affected by job satisfaction before and during pandemic COVID-19. Therefore, it is important to understand the factors that affecting and are affected by nurse's job satisfaction before and during pandemic COVID-19. The main objective of this study was to identify the assessment of the factors affecting and being affected by nurse job satisfaction before and during the COVID-19 pandemic through a systematic review. The study also aimed to the differences and similarities in the

factors affecting and are affected by job satisfaction of nurse before and during COVID-19.

2. METHODS

2.1 Research Design

This study is a systematic review and using the Joanna Briggs Institute's (JBI) critical appraisal checklists. A systematic review is one of type of literature review that are characterized by being methodical, comprehensive, transparent, and replicable. Furthermore, the systematic review used a systematic and explicit method to formulate questions. The aim is to identify, select, and critically relevant studies, and to analyze and collect data from each study to engage in the review (Siddaway et al., 2019). We used the Joanna Briggs Institute's (JBI) critical appraisal for a cross-sectional study and there were 8-items checklist. The standardized score out of 10 for the resulted proportion. The final score consist into three categories are weak (≤ 5.9), moderate (6–7.9), and strong (≥ 8). See Figure 1 for the outcomes of JBI critical appraisal for a cross-sectional study.

2.2 Search Methods

We collect the sources comprehensively through four electronic databases. There are ScienceDirect, Scopus, SAGE, and PubMed. The sources only English language and between 2017-2022. We use a set of keywords are job satisfaction or work satisfaction, nursing, during COVID-19.

2.3 Inclusion and Exclusion Criteria

The independent variable of this study is the financial factor and access to health services, the dependent variable of this study is the quality of life.

2.4 Inclusion and Exclusion Criteria

We searched and selected the articles that published between in 2017-2022 and only use English language. The articles also have a topic about job satisfaction for nurse. Moreover, we selected the article used a cross-sectional study and it's in qualification Quartile 1 (Q1) and Quartile 2 (Q2). The exclusion criteria in this study are the articles that carried out before 2017 and has qualification Quartile 3 (Q3) and Quartile 4 (Q4). We exclude for article who identify nurse's job satisfaction in pediatric and critical area. This is decided to avoid bias that will occur due to differences in the stress level of nurses in pediatric, emergency and critical areas.

Figure 1. The outcomes of JBI critical appraisal for a cross-sectional study

1. Were the criteria for inclusion in the sample clearly defined?
2. Were the study subjects and the setting described in detail?
3. Was the exposure measured in a valid and reliable way?
4. Were objective, standard criteria used for measurement of the condition?
5. Were confounding factors identified?
6. Were strategies to deal with confounding factors stated?
7. Were the outcomes measured in a valid and reliable way?
8. Was appropriate statistical analysis used?

	1	2	3	4	5	6	7	8
Putra et al. (2021)	(-)	(+)	(+)	(?)	(-)	(-)	(+)	(+)
Ball et al. (2017)	(-)	(+)	(-)	(-)	(+)	(+)	(+)	(+)
Cheung et al. (2018)	(+)	(+)	(+)	(+)	(-)	(-)	(+)	(+)
Wachholz et al. (2019)	(+)	(+)	(?)	(+)	(-)	(-)	(+)	(+)
Soto-Rubio et al. (2020)	(+)	(+)	(?)	(+)	(-)	(-)	(+)	(+)
Lavoie-Tremblay et al., (2022)	(-)	(-)	(?)	(+)	(-)	(-)	(+)	(+)
Chen et al. (2019)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)
Kagan et al. (2021)	(-)	(-)	(-)	(+)	(-)	(-)	(+)	(+)
Al-Hamdan et al. (2017)	(+)	(+)	(+)	(+)	(-)	(-)	(+)	(+)
Falatah & Conway (2019)	(-)	(+)	(?)	(+)	(?)	(?)	(+)	(+)
Acea-López et al. (2021)	(+)	(+)	(?)	(+)	(-)	(-)	(+)	(+)
Almansour et al. (2020)	(+)	(-)	(+)	(+)	(-)	(-)	(+)	(+)
Ghawadra et al. (2019)	(+)	(+)	(+)	(+)	(-)	(-)	(+)	(+)
Wu et al. (2018)	(+)	(+)	(+)	(+)	(-)	(-)	(+)	(+)
Nurmeksela et al. (2021)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)
Chang & Chang (2019)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)
Gebregziabher et al., (2020)	(-)	(+)	(+)	(+)	(-)	(-)	(+)	(+)

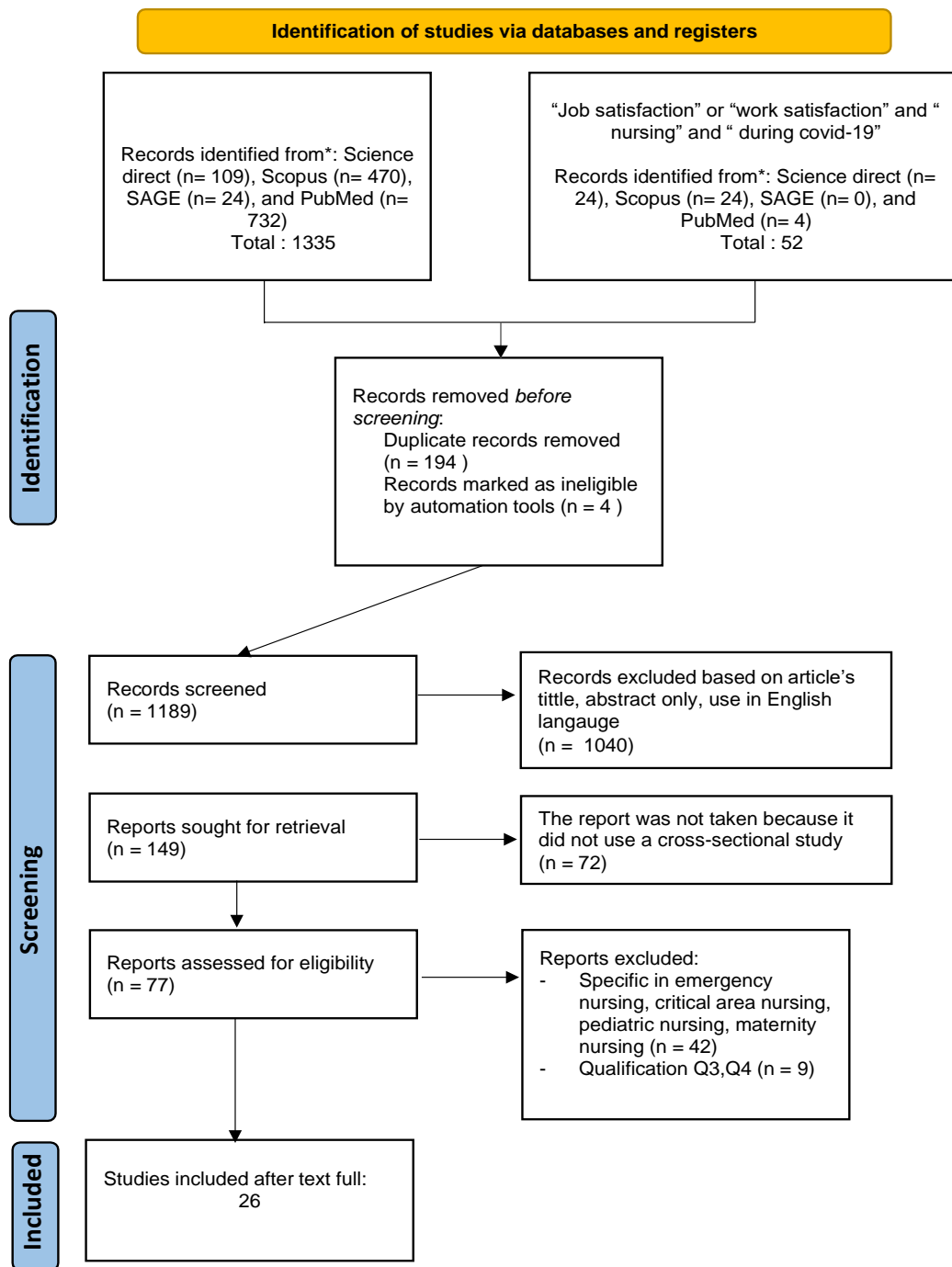
2.5 Research Outcomes

The total articles included in this study were 26 articles. We got the total articles in the initial step is 1387 articles. Then duplicate exclusion reduces SPSS software and ineligible by automation tools. As a result, we collected 1189 articles. Then records were excluded based on article title, abstract only, and English. We collected 149 articles in this step. We

excluded articles that did not use a cross-sectional study and we got 77 articles. In the next step, the exclusion of articles describing nurse job satisfaction in the pediatric, emergency and critical fields and articles having qualifications in Quartile 3 (Q3) and Quartile 4 (Q4). See Figure 2 for the PRISMA flow diagram.

2.6 Data Abstraction and Synthesis

Figure 2. PRISMA 2020 flow diagram for new systematic reviews



This review uses the extracted data as follows: author, year, design, sample, variables, instruments, analysis, influencing factors, affected factors, and factor categories. The data was extracted into a summative table using Excel. This strategy is used to make it easier for identify and analyze the factors that affecting and are affected by nurse’s job satisfaction before and during the COVID-19 pandemic and to be able to differentiate the categories. Furthermore, this technique with extraction of information from each study and reduced the time and effort to identify similarities and differences between before and during COVID-19. See Figure 3 for the extracted data the factors that affecting and are affected by nurse’s

job satisfaction before and during the COVID-19 pandemic and their categories.

3. RESULTS

3.1 Study Characteristics

Twenty-six studies involving a grand total 30.811 participants with 29.219 nurses and 1592 physicians were selected for this review. A cross-sectional design was used for all of these studies. The most widely used instrument in this study is the job satisfaction scale (N = 9). Most studies included in this study were of high (N = 5) or moderate (N = 18). Only three studies were of weak methodological

quality. The reasons for poor methodological quality were failure to identify confounding factors, an absence of clear inclusion and exclusion criteria, and an absence of explanation about strategies to deal with confounding factors.

3.2 Factors Affecting Job Satisfaction of Nurse Before COVID-19

The most frequently linked with factors affecting job satisfaction of nurse before COVID-19 is workplace environments and workplace violence. In general, organizational support, good workplace environments, good nurse-nurse collaboration, good relational coordination, work security, work and professional commitment associated with high job satisfaction (Al-Hamdan et al., 2017; Ayalew & Workineh, 2019; Falatah & Conway, 2019; Kagan et al., 2021; Semachew et al., 2017; Wu et al., 2018; Ylitörmänen et al., 2019). Whereas, other factors associated with low job satisfaction were longer shift length, workplace violence, higher the average daily patient– nurse ratio (ADPNR), perceived stress, moral distress, psychological distress, emotional labor, poor quality of sleep, and demoralized (Ball et al., 2017; Chen et al., 2019; Cheung et al., 2018; Ghawadra et al., 2019; Hemmati-Maslakpak et al., 2021; J. Liu et al., 2017; Semachew et al., 2017; Senek et al., 2020; Wu et al., 2018).

3.3 Factors Affected by Job Satisfaction of Nurse Before COVID-19

Turnover intention and burnout were the most factors affected by job satisfaction of nurse before COVID-19. High job satisfaction will increase of caring behavior, quality of care, intention to stay and job performance (Abdullah et al., 2021; Al-Hamdan et al., 2017; Ball et al., 2017; K. R. Putra et al., 2021). Otherwise, job dissatisfaction will increase turnover intention, burnout, and poor of sleep quality (Acea-López et al., 2021; Chang & Chang, 2019; Chen et al., 2019; Falatah & Conway, 2019; Gebregziabher et al., 2020; H. Liu et al., 2017).

3.4 Factors Affecting Job Satisfaction of Nurse During COVID-19

Psychological distress is the most factors affecting job satisfaction of nurse during COVID-19. Pay satisfaction, good quality of supervisor, and emotional intelligence associated with high job satisfaction (Sharif Nia et al., 2021; Soto-Rubio et al., 2020). Whereas, job dissatisfaction associated with psychological distress, high workload, extra-role behaviours, and fear of COVID-19 (Labrague & de Los Santos, 2021; Sharif Nia et al., 2021; Soto-Rubio et al., 2020).

3.5 Factors Affected by Job Satisfaction of Nurse During COVID-19

The most factors affected by job satisfaction of nurse during COVID-19 was turnover intention. High job

satisfaction associated with quality of care, intention to care and organizational commitment (Labrague et al., 2021; Lavoie-Tremblay et al., 2022; Sharif Nia et al., 2021). Whereas, job dissatisfaction associated with turnover intention (Labrague et al., 2021; Lavoie-Tremblay et al., 2022).

3.6 Comparison Between Before and During COVID-19

There were twenty-six articles used in this study which consisted of 22 articles explaining job satisfaction factors before COVID-19 and 4 articles explaining job satisfaction factors during COVID-19. The similarities between factors affecting job satisfaction of nurse before and during COVID-19 were workload and psychological distress (Ghawadra et al., 2019; Labrague & de Los Santos, 2021; Semachew et al., 2017; Sharif Nia et al., 2021). The differences between factor affecting job satisfaction of nurse before and during COVID-19 was fear COVID-19 (Labrague & de Los Santos, 2021). This factor was only found during COVID-19. Otherwise, the similarities between factors affected by job satisfaction of nurse before and during COVID-19 were quality of care and turnover intention (Ball et al., 2017; Falatah & Conway, 2019; Gebregziabher et al., 2020; Labrague & de Los Santos, 2021; Lavoie-Tremblay et al., 2022). The differences between factor affected by job satisfaction of nurse before and during COVID-19 cannot be explained as there are no underlying psychological and personal factors during COVID-19.

4. DISCUSSION

We have collected and assessed the focal factors of empirical evidence influencing and being influenced by nurse's job satisfaction in this review and using research published between 2017- 2022. The findings of this review use a development framework based on Herzberg's two-factor theory of job satisfaction to classify into three factors. These factors were organizational, personal, and psychological factors. The most factor affecting job satisfaction of nurse before COVID-19 was organizational factors such as workplace violence, work environments, work load, organizational support, longer shift length, higher the average daily patient-nurse ratio, relation coordination, nurse manager's work activities, good nurse-nurse collaboration and work security. In previous study, it has been explained that there are no significant organizational factors on nurse's job satisfaction (Aloisio et al., 2021). It is necessary to conduct more in-depth research on the relationship between organizational factors and job satisfaction of nurses. The most factors affecting job satisfaction of nurse during COVID-19 were organizational and psychological factors. There was an increase in the stress level of nurses working for COVID-19 patients (Babore et al., 2020). It is important to maintain the

coping strategies used by nurses in dealing with the extremely stressful situation caused by the COVID-19 pandemic. If the nurses have a good coping strategy, then job satisfaction will be felt by the nurse. Organizational factors describe the form of organizational support for nurses (Zhang et al., 2020). Organizational support can reduce anxiety level. This can be a mediation to achieve job satisfaction. The most factor affected by job satisfaction of nurse before and during COVID-19 was organizational factors. Turnover intention frequently occurs in organizational factors. Job dissatisfaction initiate poorly prepared and overwhelmed nurses faced COVID-19 situation showed higher turnover intention (Lavoie-Tremblay et al., 2022).

5. LIMITATION

All of the studies used cross-sectional designs which makes it hard to infer any causal relationships. This study bias was consistent with previous literature review. We had difficulty finding articles on the factors of nurse job satisfaction during COVID-19 due to limited resources.

6. CONCLUSION

There are three factors that affecting nurse's job satisfaction before COVID-19 and during COVID-19. They are personal factors, organizational factors, and psychological factors. job dissatisfaction can cause turnover and burnout on nurse. Therefore, it's important to increase job satisfaction by controlling these factors.

7. REFERENCES

- Almansour, H., Gobbi, M., Prichard, J., & Ewings, S. (2020). The association between nationality and nurse job satisfaction in Saudi Arabian hospitals. *International Nursing Review*, 67(3), 420–426. <https://doi.org/10.1111/inr.12613>
- Aloisio, L. D., Coughlin, M., & Squires, J. E. (2021). Individual and organizational factors of nurses' job satisfaction in long-term care: A systematic review. *International Journal of Nursing Studies*, 123, 104073. <https://doi.org/10.1016/j.ijnurstu.2021.104073>
- Ayalew, E., & Workineh, Y. (2019). Job satisfaction and associated factors among nurses in Bahir Dar city administrative, North West Ethiopia, 2017. *BMC Research Notes*, 12(1), 319. <https://doi.org/10.1186/s13104-019-4363-4>
- Babore, A., Lombardi, L., Viceconti, M. L., Pignataro, S., Marino, V., Crudele, M., Candelori, C., Bramanti, S. M., & Trumello, C. (2020). Psychological effects of the COVID-2019 pandemic: Perceived stress and coping strategies among healthcare professionals. *Psychiatry Research*, 293(May), 113366. <https://doi.org/10.1016/j.psychres.2020.113366>
- Ball, J., Day, T., Murrells, T., Dall'Ora, C., Rafferty, A. M., Griffiths, P., & Maben, J. (2017). Cross-sectional examination of the association between shift length and hospital nurses job satisfaction and nurse reported quality measures. *BMC Nursing*, 16, 26. <https://doi.org/10.1186/s12912-017-0221-7>
- Bell, M., Tutor, N., Lecturer, A., Sheridan, A., Ed, M., Li, Z., Zuo, Q., Cheng, J., Zhou, Y., & Li, Y. (2020). How organisational commitment influences nurses' intention to stay in nursing throughout their career. *International Journal of Nursing Studies Advances*, 2(January). <https://doi.org/https://doi.org/10.1016/j.ijn.2020.100007>
- Bolandianbafghi, S., Salimi, T., Rassouli, M., Faraji, R., & Sarebanhassanabadi, M. (2017). Correlation between medication errors with job satisfaction and fatigue of nurses. *Electronic Physician*, 9(8), 5142–5148. <https://doi.org/10.19082/5142>
- Chang, W.-P., & Chang, Y.-P. (2019). Relationship between job satisfaction and sleep quality of female shift-working nurses: using shift type as moderator variable. *Industrial Health*, 57(6), 732–740. <https://doi.org/10.2486/indhealth.2018-0258>
- Chen, Y.-C., Guo, Y.-L. L., Chin, W.-S., Cheng, N.-Y., Ho, J.-J., & Shiao, J. S.-C. (2019). Patient-Nurse Ratio is Related to Nurses' Intention to Leave Their Job through Mediating Factors of Burnout and Job Dissatisfaction. *International Journal of Environmental Research and Public Health*, 16(23), E4801. <https://doi.org/10.3390/ijerph16234801>
- Cheung, T., Lee, P. H., & Yip, P. S. F. (2018). The association between workplace violence and physicians' and nurses' job satisfaction in Macau. *PloS One*, 13(12), e0207577. <https://doi.org/10.1371/journal.pone.0207577>
- de Simone, S., Planta, A., & Cicotto, G. (2018). The role of job satisfaction, work engagement, self-efficacy and agentic capacities on nurses' turnover intention and patient satisfaction. *Applied Nursing Research*, 39, 130–140. <https://doi.org/10.1016/j.apnr.2017.11.004>
- Falatah, R., & Conway, E. (2019). Linking relational coordination to nurses' job satisfaction, affective commitment and turnover intention in Saudi Arabia. *Journal of Nursing Management*, 27(4), 715–721. <https://doi.org/10.1111/jonm.12735>
- Gebregziabher, D., Berhanie, E., Berihu, H., Belstie, A., & Teklay, G. (2020). The relationship between job satisfaction and turnover intention among nurses in Axum comprehensive and specialized hospital Tigray, Ethiopia. *BMC Nursing*, 19, 79.

- <https://doi.org/10.1186/s12912-020-00468-0>
- Ghawadra, S. F., Abdullah, K. L., Choo, W. Y., & Phang, C. K. (2019). Psychological distress and its association with job satisfaction among nurses in a teaching hospital. *Journal of Clinical Nursing*, 28(21-22), 4087-4097. <https://doi.org/10.1111/jocn.14993>
- Hemmati-Maslakpak, M., Mollazadeh, F., & Jamshidi, H. (2021). The Predictive Power of Sleep Quality by Morning-Evening Chronotypes, Job Satisfaction, and Shift Schedule in Nurses: A Cross-Sectional Study. *Iranian Journal of Nursing and Midwifery Research*, 26(2), 127-132. https://doi.org/10.4103/ijnmr.IJNMR_301_19
- Herzberg, F., Mausner, B., & Snyderman, B. (1959). *The Motivation to Work* (2nd ed.). John Wiley & Sons.
- Kagan, I., Hendel, T., & Savitsky, B. (2021). Personal initiative and work environment as predictors of job satisfaction among nurses: cross-sectional study. *BMC Nursing*, 20(1), 87. <https://doi.org/10.1186/s12912-021-00615-1>
- Labrague, L. J., & de Los Santos, J. A. A. (2021). Fear of COVID-19, psychological distress, work satisfaction and turnover intention among frontline nurses. *Journal of Nursing Management*, 29(3), 395-403. <https://doi.org/10.1111/jonm.13168>
- Lavoie-Tremblay, M., G elinas, C., Aub e, T., Tchouaket, E., Tremblay, D., Gagnon, M.-P., & C ot e, J. (2022). Influence of caring for COVID-19 patients on nurse's turnover, work satisfaction and quality of care. *Journal of Nursing Management*, 30(1), 33-43. <https://doi.org/10.1111/jonm.13462>
- Liu, H., Zhang, X., Chang, R., & Wang, W. (2017). A research regarding the relationship among intensive care nurses' self-esteem, job satisfaction and subjective well-being. *International Journal of Nursing Sciences*, 4(3), 291-295. <https://doi.org/10.1016/j.ijnss.2017.06.008>
- Liu, W., Zhao, S., Shi, L., Zhang, Z., Liu, X., Li, L., Duan, X., Li, G., Lou, F., Jia, X., Fan, L., Sun, T., & Ni, X. (2018). Workplace violence, job satisfaction, burnout, perceived organisational support and their effects on turnover intention among Chinese nurses in tertiary hospitals: a cross-sectional study. *BMJ Open*, 8(6), e019525. <https://doi.org/10.1136/bmjopen-2017-019525>
- McHugh, M. D., Kutney-Lee, A., Cimiotti, J. P., Sloane, D. M., & Aiken, L. H. (2011). Nurses' widespread job dissatisfaction, burnout, and frustration with health benefits signal problems for patient care. *Health Affairs*, 30(2), 202-210. <https://doi.org/10.1377/hlthaff.2010.0100>
- Nurmeksela, A., Mikkonen, S., Kinnunen, J., & Kvist, T. (2021). Relationships between nurse managers' work activities, nurses' job satisfaction, patient satisfaction, and medication errors at the unit level: a correlational study. *BMC Health Services Research*, 21(1), 296. <https://doi.org/10.1186/s12913-021-06288-5>
- Putra, A. P., Kusnanto, K., & Yuwono, S. R. (2020). Effects of Job Satisfaction and Organizational Commitment on Nurse Retention: A Systematic Review. *INDONESIAN NURSING JOURNAL OF EDUCATION AND CLINIC (INJEC)*, 5(2), 197. <https://doi.org/10.24990/injec.v5i2.319>
- Putra, K. R., Andayani, T., & Ningrum, E. H. (2021). Job satisfaction and caring behavior among nurses in a military hospital: A cross-sectional study. *Journal of Public Health Research*, 10(2), 2212. <https://doi.org/10.4081/jphr.2021.2212>
- Said, R. M., & El-Shafei, D. A. (2021). Occupational stress, job satisfaction, and intent to leave: nurses working on front lines during COVID-19 pandemic in Zagazig City, Egypt. *Environmental Science and Pollution Research International*, 28(7), 8791-8801. <https://doi.org/10.1007/s11356-020-11235-8>
- Semachew, A., Belachew, T., Tesfaye, T., & Adinew, Y. M. (2017). Predictors of job satisfaction among nurses working in Ethiopian public hospitals, 2014: institution-based cross-sectional study. *Human Resources for Health*, 15(1), 31. <https://doi.org/10.1186/s12960-017-0204-5>
- Senek, M., Robertson, S., Ryan, T., King, R., Wood, E., Taylor, B., & Tod, A. (2020). Determinants of nurse job dissatisfaction - findings from a cross-sectional survey analysis in the UK. *BMC Nursing*, 19, 88. <https://doi.org/10.1186/s12912-020-00481-3>
- Sharif Nia, H., Arslan, G., Naghavi, N., Sivarajan Froelicher, E., Kaveh, O., Pahlevan Sharif, S., & Rahmatpour, P. (2021). A model of nurses' intention to care of patients with COVID-19: Mediating roles of job satisfaction and organisational commitment. *Journal of Clinical Nursing*, 30(11-12), 1684-1693. <https://doi.org/10.1111/jocn.15723>
- Siddaway, A. P., Wood, A. M., & Hedges, L. v. (2019). How to Do a Systematic Review: A Best Practice Guide for Conducting and Reporting Narrative Reviews, Meta-Analyses, and Meta-Syntheses. In *Annual Review of Psychology* (Vol. 70, Issue August 2018). <https://doi.org/10.1146/annurev-psych-010418-102803>
- Sidin, A. I., Saleh, L. M., Fatmawati, E., & Insani, I. N. (2021). How is the correlation job crafting to job satisfaction of hospital staff at disruption era in hospital industries. *Gaceta Sanitaria*, 35

- Suppl 1, S1–S3.
<https://doi.org/10.1016/j.gaceta.2020.12.001>
- Soto-Rubio, A., Giménez-Espert, M. D. C., & Prado-Gascó, V. (2020). Effect of Emotional Intelligence and Psychosocial Risks on Burnout, Job Satisfaction, and Nurses' Health during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, 17(21), E7998.
<https://doi.org/10.3390/ijerph17217998>
- Wachholz, A., Dalmolin, G. de L., Silva, A. M. da, Andolhe, R., Barlem, E. L. D., & Cogo, S. B. (2019). Moral distress and work satisfaction: what is their relation in nursing work? *Revista Da Escola De Enfermagem Da U S P*, 53, e03510.
<https://doi.org/10.1590/S1980-220X2018024303510>
- WHO. (2020). State of the world's nursing 2020: investing in education, jobs and leadership. In Who.
<https://apps.who.int/iris/handle/10665/331677>
- Wu, X., Li, J., Liu, G., Liu, Y., Cao, J., & Jia, Z. (2018). The effects of emotional labor and competency on job satisfaction in nurses of China: A nationwide cross-sectional survey. *International Journal of Nursing Sciences*, 5(4), 383–389.
<https://doi.org/10.1016/j.ijnss.2018.08.001>
- Ylitörmänen, T., Turunen, H., Mikkonen, S., & Kvist, T. (2019). Good nurse-nurse collaboration implies high job satisfaction: A structural equation modelling approach. *Nursing Open*, 6(3), 998–1005.
<https://doi.org/10.1002/nop2.279>
- Zhang, S. X., Sun, S., Afshar Jahanshahi, A., Alvarez-Risco, A., Ibarra, V. G., Li, J., & Patty-Tito, R. M. (2020). Developing and testing a measure of COVID-19 organizational support of healthcare workers – results from Peru, Ecuador, and Bolivia. *Psychiatry Research*, 291(May), 113174.
<https://doi.org/10.1016/j.psychres.2020.113174>

Figure 3. The extracted data the factors that affecting and are affected by nurse’s job satisfaction before and during the COVID-19 pandemic and their categories

Reference	Design	Sample	Variable	Instrument	Analysis	Affecting Factor	Affected Factor	Factor Category
Putra et al.(2021)	<i>A cross-sectional study</i>	121 nurses	Job satisfaction and caring behavior	a. Job Satisfaction Survey (JSS) b. Caring Behavior Inventory (CBI-24)	Rank Spearman and Multiple Linear Regression	-	Caring Behavior	Personal
Ball et al. (2017)	<i>A cross-sectional study</i>	2568 nurses	Job satisfaction, shift length, and quality of care	a. Care quality, safety and job and work schedule flexibility satisfaction survey	Multi-level regression	Longer shift length	Quality of care	Organizational
Cheung et al. (2018)	<i>A cross-sectional study</i>	1990 nurses and 1592 physicians	Work violence, job satisfaction, and perceived stress	a. The Minnesota Satisfaction Questionnaire b. Workplace Violence in the Health Sector: Country Case Studies Research Instruments Survey Questionnaire” c. Perceived Stress Scale.	Multiple logistic regression	Workplace violence and Perceived Stress	-	Organizational and Psychological

Reference	Design	Sample	Variable	Instrument	Analysis	Affecting Factor	Affected Factor	Factor Category
Wachholzet al. (2019)	<i>A cross-sectional study</i>	141 nurses	Moral distress and work satisfaction	a. Index of Work Satisfaction b. the Brazilian Version of the Moral Distress Scale	Spearman's correlation	Moral distress	-	Psychological
Chen et al. (2019)	<i>A cross-sectional study</i>	1409 nurses	Patient–nurse ratio, nurses' personal burnout, client-related burnout, job satisfaction, intention to leave	a. Intention to Leave scale b. ADPNR calculate based on the study of McHugh and Ma c. Job dissatisfaction scale	Multiple regression models	Higher the average daily patient–nurse ratio (ADPNR)	Intention to leave	Organizational
Kagan et al. (2021)	<i>A cross-sectional study</i>	1040 nurses	Personal initiative, nursing work environment, job satisfaction	a. Personal initiative scales b. The Revised Nursing Work Index c. Job satisfaction scale and Shepard's (1974) d. Global Job Satisfaction survey.	A logistic regression mode	Personal initiative Work environment	-	Personal Organizational

Reference	Design	Sample	Variable	Instrument	Analysis	Affecting Factor	Affected Factor	Factor Category
Falatah & Conway (2019)	<i>A cross-sectional study</i>	180 nurses	Relational coordination, job satisfaction, affective commitment and turnover intention	a. Turnover intention scale b. The McCloskey/Mueller Satisfaction Scale (MMSS) c. Relational Coordination scale based on Gittel's (2012)	Multiple regression	Relational coordination	Turnover intention	Organizational
Acea-López et al. (2021)	<i>A cross-sectional study</i>	228 nurses	Job satisfaction and burnout	a. The Job Satisfaction Questionnaire S20/23 b. Maslach Burnout Inventory.	Spearman's correlation		Burnout	Organizational
Almansouret al. (2020)	<i>A cross-sectional study</i>	743 nurses	Nationality and job satisfaction	McCloskey/Mueller Satisfaction Scale	Multivariate linear regression models	Expatriate nurses lower than Saudi nurses	-	Personal
Ghawadraet al. (2019)	<i>A cross-sectional study</i>	932 nurses	Psychological distress and job satisfaction	a. Depression, anxiety, and stress scale (DASS -21) b. Job Satisfaction Scale for Nurses (JSS)	Multiple logistic regressions	Psychological distress	-	Psychological

Reference	Design	Sample	Variable	Instrument	Analysis	Affecting Factor	Affected Factor	Factor Category
Wu et al. (2018)	<i>A cross-sectional study</i>	11.337 nurses	Emotional labor, core competencies, and job satisfaction	a. McCloskey/Muel-ler Satisfaction Scale) b. A nurse emotional labour questionnaire c. The Competency Inventory for Registered Nurses questionnaire	Multiple linear regression	Emotional labor and Core competencies	-	1. Psychological 2. Personal
Nurmeksela et al. (2021)	<i>A cross-sectional study</i>	29 nurse managers and 306 nursing staff	Nurse managers' work activities, nurses' job satisfaction, patient satisfaction, and medication errors	a. Nurse Managers' Work Content Questionnaire c. Kuopio University Hospital Job Satisfaction Scale,	Analysis of covariance (ANCOVA)	Nurse managers' work activities,	-	Organizational
Chang & Chang (2019)	<i>A cross-sectional study</i>	176 nurses	Job satisfaction and sleep quality of female shift-working	a. The Minnesota Satisfaction Questionnaire (MSQ) b. The Pittsburgh Sleep Quality Index (PSQI)	Hierarchical multiple regression		Sleep quality	Personal

Reference	Design	Sample	Variable	Instrument	Analysis	Affecting Factor	Affected Factor	Factor Category
Gebregzi abher et al.,(2020)	<i>A cross-sectional study</i>	148 nurses	Job satisfaction and turnover intention	a. Job satisfaction survey developed by Spector b. The turnover intention scales	Bivariate logistic regression		Turnover intention	Organizational
Abdullah et al. (2021)	<i>A cross-sectional study</i>	412 nurses	Internal service quality (ISQ) on nurses' job satisfaction, employee commitment , well-being and job performance	a. Internal services quality (ISQ) scales developed by Ehrhart et al., (2011) b. Employee satisfaction scales developed by Homburg and Stock, (2004) c. Employees' job performance developed by Werner, (1994)	Partial least square of structural equation model (PLS-SEM) and structural equation modelling (SEM)	Internal service quality (ISQ)	Job performance	Personal
Semache wet al. (2017)	<i>A cross-sectional study</i>	316 nurses	Job satisfaction, job stress, and professional commitment	a. The McCloskey/ Mueller Satisfaction Scale b. Professional commitment scales c. Job stress scales	Bivariate and multivariate linear regressions	Work and professional commitment Work load	-	Personal Organizational

Reference	Design	Sample	Variable	Instrument	Analysis	Affecting Factor	Affected Factor	Factor Category
Senek et al. (2020)	<i>A cross-sectional study</i>	1742 nurses	Job satisfaction and demoralized	a. Job satisfaction scales b. demoralized scales	Logistic regression	Demoralized	-	Personal
Ayalew & Workineh (2019)	<i>A cross-sectional study</i>	441 nurses	Job satisfaction, advancement, work security and recognition	a. Job satisfaction scale and Minnesota b. Questionnaire c. Advancement and recognition scales d. Work security scales	The logistic regression model	Advancement, recognition, and work security	-	Organizational
Hemmati - Maslakpakt al. (2021)	<i>A cross-sectional study</i>	327 nurses	Job satisfaction, Morning-Evening (ME) chronotypes, and shift schedule.	a. The Pittsburgh Sleep Quality Index (PSQI) b. The Minnesota Satisfaction Questionnaire (MSQ) the Composite Scale of Morningness (CSM)	Linear regression analysis and Pearson correlation coefficient	Sleep quality	-	Personal

Reference	Design	Sample	Variable	Instrument	Analysis	Affecting Factor	Affected Factor	Factor Category
Ylitörmä nen et al. (2019)	<i>A cross-sectional study</i>	406 nurses	Job satisfaction and good nurse–nurse collaboration	a. The Nurse–Nurse Collaboration Scale (NNCS) developed by Dougherty and Larson (2010) b. The Kuopio University Hospital Job Satisfaction Scale (KUHJSS)	Structural equation modelling	Good nurse–nurse collaboration	-	Organizational
Liu et al. (2018)	<i>A cross-sectional study</i>	1761 nurses	Workplace violence, job satisfaction, burnout, organizational support and turnover intention	a. The Workplace Violence Scale b. Chinese Maslach Burnout Inventory General Survey c. Minnesota Job Satisfaction Questionnaire Revised Short Version d. Perceived Organizational Support-Simplified Version Scale Turnover Intention Scale.	Pearson’s correlations and linear regression	1. Workplace violence 2. Organizational support	Turnover intention Burnout	Organizational

DURING COVID-19

Reference	Design	Sample	Variable	Instrument	Analysis	Affecting Factor	Affected Factor	Factor Category
Lavoie-Tremblay et al., (2022)	<i>A cross-sectional study</i>	782 nurses	Nurse's turnover, work satisfaction, and quality of care	a. Work satisfaction scales b. Perceived quality of care scales c. Turnover intention scales	MANOVA	-	1. Quality of care 2. Turnover intention	Organizational
Soto-Rubio et al. (2020)	<i>A cross-sectional study</i>	125 nurses	Psychosocial risks and emotional intelligence nurses' health, well-being, burnout level, and job satisfaction	a. The Trait Meta-Mood Scale (TMMS-24) b. The UNIPSCO Battery c. Job satisfaction d. scale	Multiple hierarchical linear regression	1. Psychosocial risks 2. Emotional intelligence	-	Psychological
Sharif Nia et al. (2021)	<i>A cross-sectional study</i>	648 nurses	Job satisfaction, Intention to care, workload and	a. Nurses' Intention to Care Scale (P-NICS) b. Organizational	Pearson correlation	1. Workload, quality of supervisor 2. Extra-role behaviors, 3. Pay	1. Organizational commitment Intention to care	Organizational

			organizational commitment	commitment scales			satisfaction		
				c. Perceived work-load scales					
				d. Job satisfaction					
				e. scales					
Labrague & de Los Santos, (2021)	<i>A cross-sectional study</i>	261 nurses	Fear of COVID-19 on nurses' psychological distress, work satisfaction and intent to leave their organization and the profession	a. The Fear of COVID-19 Scale b. The Job Stress Scale (JSS) c. The Job Satisfaction Index (JSI) d. Organization turnover intention f. scales	Multiple linear regressions	1. Fear of COVID-19 4. Psychological distress	Organizational and professional turnover intentions.	Psychological Organizational	