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A Bibliometric Analysis of Research Developments of Work Stress on Hospital Nurses

Novita Tri Lestari Puji Hastuti¹, Sri Handari Wahyuningsih², Siti Dyah Handayani³

^{1,2,3}Master of Management, University of Muhammadiyah Yogyakarta

Correspondence: Novita Tri Lestari Puji Hastuti. Master of Management, University of Muhammadiyah Yogyakarta

Abstract

Job stress is a person's response to conditions that are felt both physically and psychologically and that are excessive because of job demand both internally and externally. This work stress condition can reduce the performance of human resources and can also cause job dissatisfaction. In the short term, if stress is left unattended without any serious treatment, it will make employees uncomfortable and even depressed, and unmotivated to do work so that the work process becomes disrupted and not optimal. In the long term, if employees are not able to handle the work stress they experience, it can result in the employee getting sick and even resigning (turnover). This paper was prepared with the aim of finding out research on work stress in nurses in hospitals over the last ten years through analysis of related documents in the Scopus database search in 2010–2020, which totaled 296 documents. The data is exported in RIS format to obtain a map of research developments. The exported data is then processed and analyzed with the VOS Viewer application program to determine the bibliometric map. The development of research on work stress in nurses with the highest Scopus index occurred in 2020, reaching 41 publications (13.85%). This study will contribute to a better understanding of work stress so that it can help hospitals improve nurse performance.

Keywords: Work Stress, VOS viewer, Scopus, Nurses, Hospital

1. Introduction

In this competitive era, many companies are competing to improve the quality and capabilities of their human resources. This raises a new challenge, namely how companies can maintain the ability and quality of their human resources. One of the causes that can affect the ability and quality of human resources is work stress caused by various factors.

Many factors can affect work stress (Seo et al., 2015), such as safety culture, self-perceived burnout, and personal characteristics. A study (Seo et al., 2015) found that self-perceived fatigue caused by job stress can directly influence safety behavior. Therefore, work stress can reduce nurses' safety behaviors through self-perceived fatigue. Work-related stress is considered a harmful physical and emotional response that occurs when there is a mismatch between job requirements and the worker's abilities, resources, or needs (Mursali et al., 2009) (Hoboubi et al., 2017).

If stress is left without serious handling by the company, in the short term this will cause workers to feel uncomfortable and even depressed, and not motivated to do work, so that the work process is disrupted and not optimal. If workers cannot cope with long-term work stress, the stress they experience can result in the worker getting sick and even resigning (turnover) (Fahmi, 2016).

Nursing is a profession that exposes nurses to various potentially stressful situations in the workplace. Interaction with patients and other health professionals is a source of stress in the nursing profession. Nurses have far more jobs than any other profession (French et al., 2000). Nurses have a lot of work-related stress, including stress as a result of facing death and dying (Hoffman & Scott, 2003), emotional exhaustion (Vahey et al., 2004), stress due to working conditions (Golubic et al., 2009), and inadequate staff skills (Brooks & Anderson, 2004) (Donaldson et al., 2015). Several studies have shown that nurses who work in hospitals experience job stress.

The results of a study conducted by Cushway showed that professional nurses tend to experience chronic stress and fatigue. The results of research conducted by Ilmi showed that at RSUD Ulin Banjarmasin, the level of work stress of nurses was in the high category, namely 15%. Another study conducted by Sihombing showed that at RSU Dr. Pirngadi Medan, 50% of nurses who work long shifts experience physical stress.

Past research has shown that job stress has a major impact on a person's physiology, psychology, and behavior (Deng et al., 2019). Work-related stress is a major factor in job satisfaction. As a motivator, work-related stress creates creativity and satisfaction and thus reduces boredom in daily life. Stress causes aggression and low job satisfaction when it acts as a negative factor (Halkos & Bousinakis, 2010).

This paper was prepared with the aim of finding out "work stress on nurses" over the past ten years through an analysis of related documents in searching the Scopus database, which totalled 296 documents. The data is exported in RIS format to obtain a map of research developments. The exported data is then processed and analysed with the VOS Viewer application program to determine the bibliometric map. An extensive review of the existing publications on job stress in nurses will be provided by answering the following three research questions:

- a. What is the distribution pattern of the annual publication of work stress on nurses in hospitals?
- b. What or who are the main contributors in terms of journals, authors, countries, and documents about work stress on nurses in hospitals?
- c. What are the most frequently discussed themes and emerging trends regarding work stress in hospital nurses?

2. Literature Review

In general, stress is a stimulus, reaction, and interaction to an event that threatens or supports. Stress at work is a psychological reaction to the demands of an excessive workload or pressure at work (Soep, 2012). In general, stress is a stimulus, reaction, and interaction to an Anyone who works in a job may experience job stress, including hospital nurses. Work-related stress on nurses may influence their performance, which may affect the quality of medical care they provide. Nurses play an important role in choosing services (Jennings, 2008).

Nurses are medical professionals who serve patients all the time (Sulistiyawati et al., 2019). Nurses will interact with patients more often than doctors, which will be very important for the patient's recovery (Intansari & Dwiantoro, 2021). Health workers in Indonesia, especially nurses, experience varying levels of work stress. The work stress experienced by nurses was 61.4%, or as many as 22 respondents who experienced normal stress levels

in the ICU and ICCU rooms at Dr. Soedarso Pontianak (Malisa et al., 2019). Research conducted by Hadiansyah et al (2019) also explained that nurses at RSUD Sumedang showed that more than half (61%) of the respondents were at moderate work stress levels, and at Rumah Sakit Al Islam (RSAI) Bandung showed that more than half of the respondents (52.63 %) were at the high-stress level (Hadiansyah et al., 2019).

According to the National Institute for Occupational Safety and Health (NIOSH), there are three categories of symptoms that a person may exhibit when experiencing work stress, namely: psychological, physiological, and behavioural responses. Nurses show psychological reactions such as decreased appetite, difficulty concentrating, feeling depressed, always feeling afraid, restless when sleeping, feeling lonely, crying easily, talking less, and not being able to enjoy life. physiological, such as headaches, dry mouth, high blood pressure, shortness of breath, muscle aches, fatigue, insomnia, pain, and shaking hands. While behavioural reactions are shown, such as arguing, using alcohol or drugs, smoking, being impatient, and ignoring responsibilities (Erdius & Dewi, 2017).

Because of their direct involvement in the care of people, nurses are particularly susceptible to stress. Uncomfortable working conditions, shift division of work, excessive workload, use of new technology, and other factors can all contribute to job stress. Age, gender, individual position in the work organization, interpersonal connections, career advancement, and many other external factors are some of the many elements that contribute to job stress (Rahmadhani, 2019).

According to Mangkunegara (2011), there are four approaches to work stress, namely social support, meditation, biofeedback, and personal wellness programs. (1) Social Support Approach. This approach is carried out through activities aimed at providing social satisfaction to employees. (2) Approach through Meditation. This approach is done by concentrating on the nature of the mind, relaxing stiff muscles, and calming emotions. Meditation can be done over two time periods of 15-20 minutes each and can be done in a special room. (3) Approach through Biofeedback. This approach is carried out through medical guidance. Employees are expected to be able to relieve the work stress they experience through the guidance of doctors, psychiatrists, and psychologists. (4) Personal Health Approach. This approach is a preventive approach (prevention) before the occurrence of stress. In this case, employees routinely carry out health checks, muscle relaxation, nutrition management, and regular exercise (Mangkunegara, 2011).

According to Cox, Griffith, and Eusebio cited in Rachman (2017), there are several techniques for measuring stress, namely: (1) Self-Report Measure. A self-report measure is a measurement method that is widely used in research, measuring it by asking physiological, psychological, and behavioural questions. This measurement method uses a questionnaire. (2) Physiological Measures. Physiological measures are measurements made by looking at physical changes due to stress, such as tension in the shoulder, neck, and shoulder muscles. (3) Biochemical Measures. A biochemical measure is a measurement that is done by looking at stress through biochemical responses in individuals in the form of changes in catecholamine and corticosteroid hormone levels after the stimulus is given. However, the measurement results may change if the research subjects are smokers, drinkers of alcohol, or caffeine users because cigarettes, coffee, and alcohol can increase catecholamine and corticosteroid hormones in the body (Rachman, 2017).

3. Research Methods

This study uses data from international publications on the topic of work stress on nurses in hospitals from 2010–2020 sourced from the Scopus database (www.scopus.com). The Scopus database was selected for the following reasons: (1) Implementation of strict quality standards through the Relative Quality Index, Scimago Journal Rank (SJR) (Río-Rama et al., 2020). (2) Scopus makes evolutionary analysis and citations easier with 20% greater time coverage than the Web of Science, a database commonly used in bibliometric analysis (Gao et al., 2022). (3) All authors are listed in the references, making it possible to perform author-based analysis more accurately (Zupic & Čater, 2015). Collecting data through a search for publications on Scopus with the keywords "work stress" and "nurse" with the category of the article title, abstract, and keywords in the period 2010–2020. Data in the form of the number of publications per year, journals containing articles, authors, the origin of authors, and subjects were analyzed using Microsoft Excel. Meanwhile, the trend of international publication development was analyzed

using Vos Viewer software. VOS viewer is a powerful tool for mapping and visualizing network structures using bibliographic data from various databases, including Web of Science and Scopus (Moral-muñoz et al., 2020). A descriptive analysis was performed to describe the number of publications, overall development trends, citations, and productivity. Author impact, article, journal, country, author keyword analysis, and topic trend analysis are also considered. Data visualization and scientific mapping were used to perform network analysis, which included 1) keyword co-occurrence analysis, and 2) cluster analysis. (Gao et al., 2022).

4. Bibliometric Analysis of Literature: Results

4.1. Distribution Pattern of Annual Work Stress Documents for Nurses in Hospitals

The development of research on work stress in nurses in 2010–2020 experienced a significant increase. The development of research on work stress in nurses with the highest Scopus index occurred in 2020, reaching 41 publications (13.85%).

Table 1: Years of Publication of Work Stress Research on Nurses at Scopus 2010-2020

Publication year	Amount	Percentage
2010	13	4,39%
2011	15	5,07%
2012	30	10,14%
2013	17	5,74%
2014	14	4,73%
2015	30	10,14%
2016	35	11,82%
2017	31	10,47%
2018	31	10,47%
2019	39	13,18%
2020	41	13,85%
Total	296	100%

The growth and development of research publications on work stress in nurses in 2010-2020 based on table 1 and figure 1 shows that in 2010-2020 there was an increase and the highest growth occurred in 2020, namely 41 publications (13.85%). Then, followed by 2019 (39 publications, or 13.18%), and 2016 (35 publications, or 11.82%).

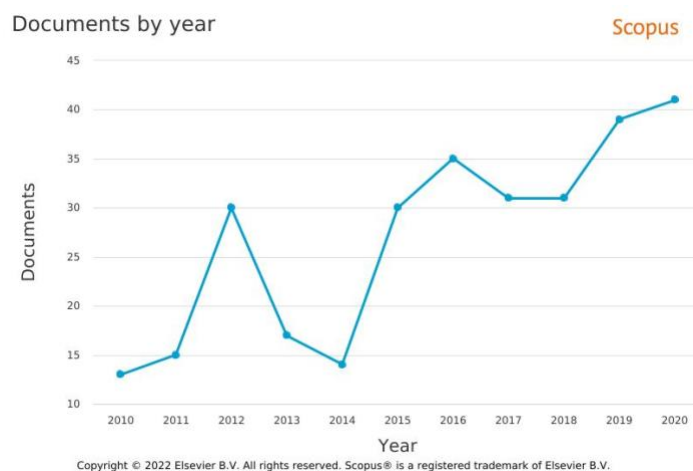


Figure 1: Year of Publication of Work Stress Research on Nurses at Scopus 2010–2020

4.2. Journal of Work Stress Research on Nurses at Scopus 2010–2020

Based on the search results with the keywords "work stress" and "nurse" on Scopus, 296 publications were obtained. From this number, it is known that most international publications on work stress in nurses are published in the Journal of Nursing Management (15 publications). The top ten core journals that publish the development of work stress research on nurses can be seen in Table 2.

Table 2: Journal of Work Stress Research on Nurses at Scopus 2010–2020

Journal	Amount
<i>Journal of Nursing Management</i>	15
<i>Journal of Advanced Nursing</i>	9
<i>BMC Health Services Research</i>	8
<i>International Journal of Environmental Research and Public Health</i>	6
<i>Journal of Clinical Nursing</i>	6
<i>International Journal of Nursing Studies</i>	5
<i>Plos One</i>	5
<i>Journal of Nursing and Healthcare Research</i>	4
<i>Journal of Occupational and Environmental Medicine</i>	4
<i>Taiwan Journal of Public Health</i>	4

Based on table 2 and figure 2, after the Journal of Nursing Management, there are other publications that publish research on work stress in nurses, namely the Journal of Advanced Nursing (9 publications), BMC Health Services Research (8 publications), International Journal of Environmental Research and Public Health, and Journal of Clinical Nursing (6 publications).

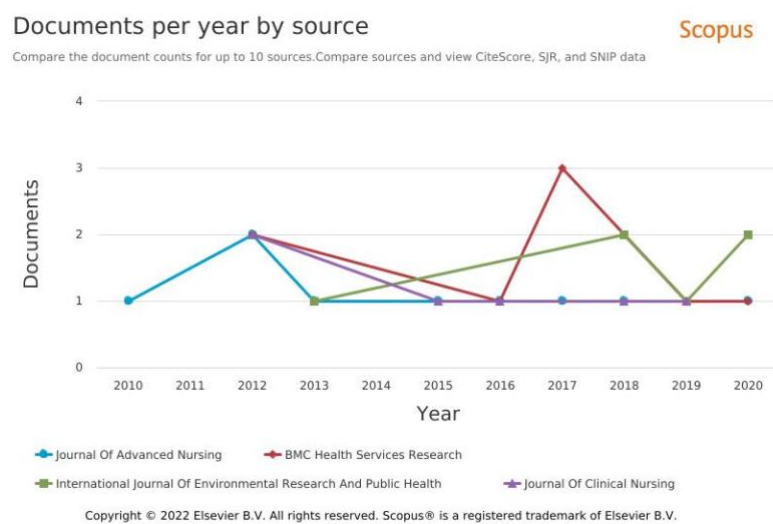


Figure 2: Journal of Work Stress Research on Nurses at Scopus 2010–2020

4.3. Publications on Work Stress in Nurses

Based on the results of data analysis, it shows that the National Taipei University of Nursing and Health Sciences is the institution that publishes the most research on work stress in nurses. The top ten institutions that publish research on work stress in nurses can be seen in Table 3.

Table 3: Publishers of Work Stress Research on Nurses at Scopus 2010–2020

Publisher/affiliate	Amount
National Taipei University of Nursing and Health Sciences	9
Kaohsiung Medical University	7
Taipei Medical University	7
Heinrich-Heine-Universität Düsseldorf	7
Ludwig-Maximilians-Universität München	6
Klinikum der Universität München	5
Chang Gung University	5
Chang Gung Memorial Hospital	5
Harvard Medical School	4
Fooyin University Taiwan	4

Based on table 3 and figure 3, shows that the National Taipei University of Nursing and Health Sciences is the institution that publishes the most research results on work stress in nurses, namely 9 publications, followed by Kaohsiung Medical University, Taipei Medical University, and Heinrich-Heine-Universität Düsseldorf. Each of which publishes 7 publications.

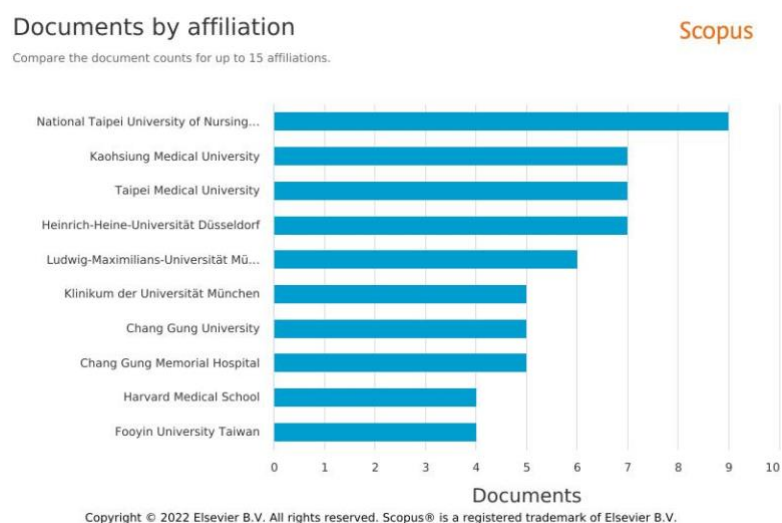


Figure 3: Publisher of Work Stress Research on Nurses at Scopus 2010–2020

4.4. Researcher Productivity of Work Stress Research on Nurses

The productivity of the top 10 researchers working stress on nurses in 2010–2020 indexed by Scopus shows that their productivity is almost the same, only differing by 1 publication, as shown in Table 4.

Table 4: Researchers' Productivity of Work Stress Research on Nurses

Researcher	Amount
Angerer, P.	6
Weigl, M.	5
Kivimäki, M.	4
Vahtera, J.	4
Hasan, A.A.	3
Hämmig, O.	3
Härmä, M.	3
Labrague, L.J.	3
Loerbroks, A.	3
McEnroe-Petitte, D.M.	3

Based on Table 4 and Figure 4, Angerer, P. has researched a lot of work stress on nurses with six publications, followed by Weigl, M. with five publications, and Kivimäki, M. and Vahtera, J. with four publications each.

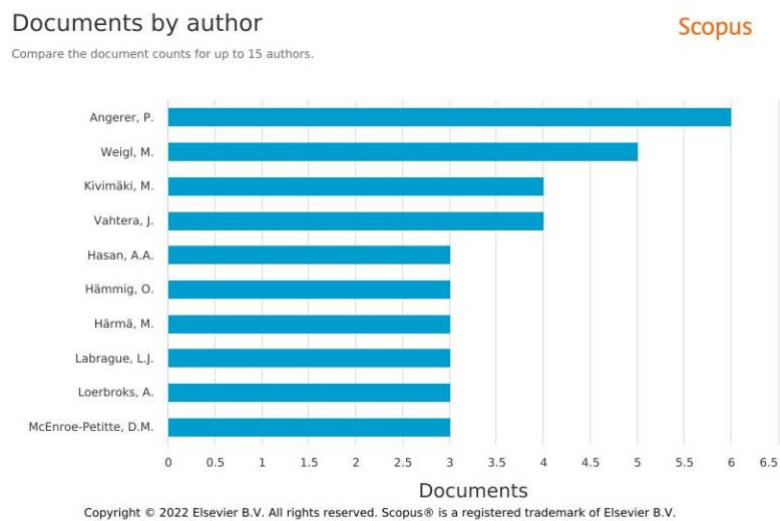


Figure 4: Researcher Productivity of Work Stress on Nurses

4.5. Countries Owning Scopus Indexed Publications

The contribution of the results of research on work stress to nurses with the Scopus index with the highest number is the United States, followed by Taiwan, China, Australia, and Germany. Contributors to the results of work stress research on nurses can be seen in Table 5.

Table 5. Publishing Countries for Work Stress Research on Nurses

Country	Amount
United States	53
Taiwan	35
China	25
Australia	24
Germany	20
United Kingdom	16
Italy	14
Spain	11
Indonesia	9
Brazil	8

Based on table 5 and figure 5, it can be seen that the country with the largest number of contributors to the publication of work stress research results on nurses is the United States, with 53 publications. Then, followed by Taiwan (35 publications), China (25 publications), Australia (24 publications), and Germany (20 publications).

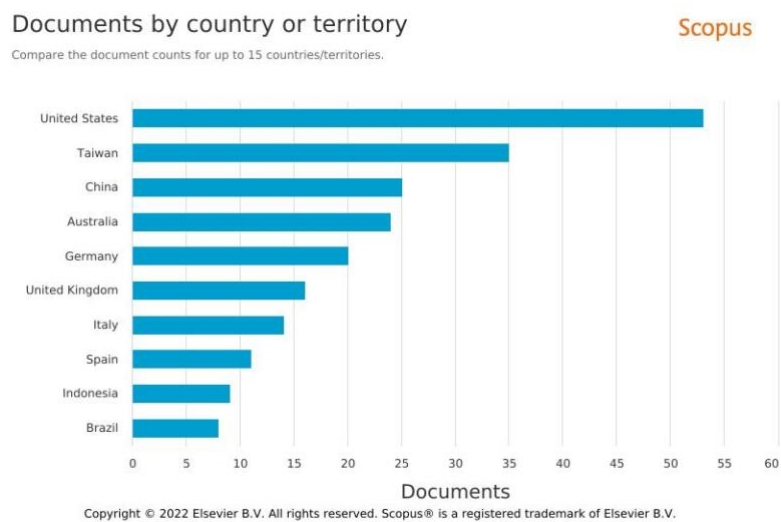


Figure 5: Publishing Countries for Work Stress Research on Nurses

4.6. Subjects of Publication of Work Stress on Nurses

The number of publications on work stress research on nurses based on Scopus indexed subjects in 2010–2020 shows that medicine is the highest subject. Then, followed by the subjects of the nursery, psychology, social sciences, and environmental science. The number of work stress research publications on nurses can be seen in Table 6.

Table 6: Subjects of research work stress on nurses

Subject	Amount
Medicine	142
Nursing	123
Psychology	26
Social Sciences	23
Environmental Science	11
Biochemistry, Genetics and Molecular Biology	8
Engineering	7
Pharmacology, Toxicology and Pharmaceutics	7
Business, Management and Accounting	6
Computer Science	5
Multidisciplinary	5
Neuroscience	5
Arts and Humanities	4
Chemical Engineering	4
Health Professions	4
Agricultural and Biological Sciences	2
Materials Science	2
Mathematics	2
Veterinary	2
Decision Sciences	1
Dentistry	1
Immunology and Microbiology	1
Physics and Astronomy	1

Figure 6 shows that the most common subject of work stress publications on nurses in 2010-2020 was medicine (36.2%). Then nursing (31.4%), psychology (6.6%), social sciences (5.9%), and environmental science (2.8%).

Documents by subject area

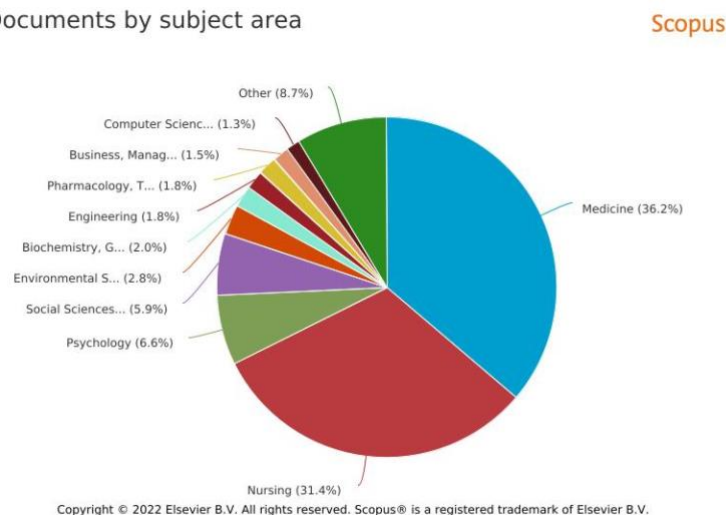


Figure 6: Subjects of work stress research on nurses

4.7. Publication Trend Map by Keyword

Figure 7 shows that, based on co-words, the development map of publications on work stress in Scopus indexed nurses in 2010–2020 forms 8 clusters. Cluster 1 in red consists of adolescents, doctor-nurse relations, emergency nursing, health care workers, human relations, and medical staff. Cluster 2 in green consists of human, job stress, hospital, job satisfaction, nursing education, nursing staff, and patient safety. Cluster 3 in blue consists of burnout, professional, workplace, diagnosis, nurses, nursing, physical activity, and work schedule. Cluster 4 in yellow consists of anxiety, depression, long-term care, mental disease, and nursing assistance. Cluster 5 in purple consists of emotional stress, hospital personnel, leadership, managers, and medical leave. Cluster 6 in light blue consists of diagnosis, complications, middle-aged, motivation, and psychology. Cluster 7 in orange consists of adaptive behavior, health behavior, lifestyle, mental stress, and nurse attitude. Cluster 8 in brown color consists of epidemiology and viral pneumonia.

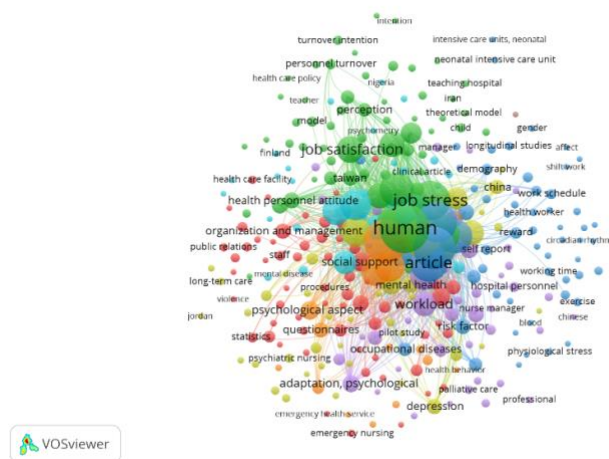


Figure 7: Co-word map of publications on work stress in nurses

4.8. Publication Map by Author

Based on the co-author, research on work stress in nurses is divided into 9 clusters. Cluster 1 is red, consisting of angerer, p., müller, a., schneider, a., and weigl, m. Cluster 2 is green and consists of härmä, m., kivimäki, m., puttonen, s., and vahtera, j. Cluster 3 is blue, which consists of li, h.-y., li, j., and loerbroks, a. Cluster 4 is yellow, which consists of labrague, l.j., and mcrenroe-petitite, d.m. Cluster 5 is purple and consists of Chen, C.-h. Cluster 6 is light blue and consists of Hasan, a.a. Cluster 7 is orange and consists of hämmig, o. Cluster 8 is pink, consisting of money, l.

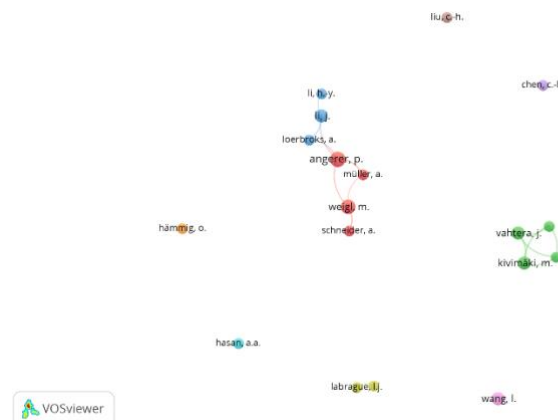


Figure 8: Map of co-author publications on work stress in nurses

5. Discussion

The distribution of articles about work stress on nurses became the topic of the first research question. Since the publication of the first article related to job stress in nurses by (Stott, 1973), the number of publications maintains steady growth. From the period of low production before 2010, the wave of documents increased significantly in the years above 2010 and beyond. The sudden outbreak of Covid-19 at the end of 2019 may be one of the main reasons for the high number of publications in 2019 and above. The role of nurses is very important because they are workers who often contact with patients and other hospital workers. It can cause stress on nurses in their work environment.

To answer the second research question about the most authoritative literature authors, Peter Angerer, wrote the most literature on job stress in nurses followed by Weigl, M. with 5 publications, and Kivimäki, M., and Vahtera, J. with 4 publications each. Angerer first wrote about psychosocial occupational characteristics that could be associated with needle sticks and sharp object injuries (NSIs) among nurses (Loerbroks et al., 2015). Weigl first investigated in 2016 investigating the moderating effect of work overload and supervisor support on the emotional exhaustion-depressive relationship (Weigl et al., 2016). Kivimäki and Vahtera investigated the relationship between work stress and body mass index among 45,810 female and male employees (Kouvonen et al., 2005). These studies are important to assist the development of research on job stress in nurses.

For the contribution of the publishing country, the United States, followed by Taiwan, China, Australia, and Germany, contributed the most in terms of productivity and citations. These developed and developing countries have contributed greatly to the development of research on work stress in nurses. Given that nurses have an important role in terms of health, this research is of great interest to be researched.

For the third research question, the most studied themes or keywords were job stress, human, job satisfaction, social support, and mental health. These keywords are related to each other. Job stress can cause job-related dissatisfaction and is the simplest and most obvious psychological effect of stress (Bahua & Mendo, 2022). The problem of job satisfaction is very important to note because high satisfaction will create a pleasant work atmosphere and will encourage nurses to excel. The higher the work stress felt by the nurse or someone, the job satisfaction will decrease or vice versa, the lower the work stress, the higher the job satisfaction (Rahmayuliani, 2018).

The role of social support can affect work stress in improving performance. Nurses or employees better understand how the working conditions are faced, employees who work longer tend to build a more family working atmosphere and that's how social support will be formed. Then employees work as a team, so they must help each other and give advice related to work. In addition, co-workers help employees in overcoming the problems they face so that the work stress they experience can be reduced (Cahyani & Frianto, 2019). Social support can reduce stress levels at work. The quantity and quality of an individual's social relationships with life partners, co-workers, and superiors affect an individual's ability to cope with the stress he or she faces (Kusmiati et al., 2018).

The impact of work anxiety and stress will worsen physical and mental conditions, increase work errors, reduce nurse work productivity (Park & Kim, 2013). The higher the mental demands faced by workers, the more work stress they experience (Priyatna et al., 2021). Excessive mental demands that exceed the abilities and competencies of workers can lead to incompetence, frustration, and even burnout. Jobs with good mental demands should be at a level of mental demands that are comfortable for workers so that they are by their abilities (Kusmiati et al., 2018).

6. Limitations and Future Directions

Although using the same bibliometric analysis approach, this study still has several weaknesses. First, some important publications indexed in other databases may be missed because the data is only taken from one Scopus database. Another weakness can be caused by the limited source of data selection in English-language journal publications, so that data mining in the bibliometric analysis is not comprehensive and is only limited to titles, abstracts, and keywords.

Several recommendations were made for further research, considering the constraints mentioned above. To include more comprehensive and complete data in research, the scope of the data must be increased first by combining information from several databases, such as Web of Science, Google Scholar, and Dimensions. Second, if some useful and relevant articles are omitted, further studies may include all publication sources and document types. Third, other methods can be used, such as text analysis, to dig deeper into the text and thereby enhance the study of job stress.

7. Conclusion

Job stress is a person's response to conditions that are felt both physically and psychologically and that are excessive because of job demand both internally and externally. This work stress condition can reduce the performance of human resources and can also cause job dissatisfaction. Nursing is a profession that exposes nurses to various potentially stressful situations in the workplace. Interaction with patients and other health professionals is a source of stress in the nursing profession. Nurses have far more jobs than any other profession. Overall, the results of the study show the increasingly important role of nurses in the world of health. In addition, finding and studying major works on this topic can assist aspiring academics with their research by offering important information about job stress to nurses.

References

- Bahua, W., & Mendo, A. Y. (2022). Pengaruh Kepuasan Kerja Dan Tingkat Stres Kerja Terhadap Prestasi Kerja Pegawai Di Dinas Sosial Provinsi Gorontalo. [The Effect of Job Satisfaction and Job Stress Levels on Employee Work Performance at the Social Service of Gorontalo Province]. *JAMBURA: Jurnal Ilmiah Manajemen Dan Bisnis*, 4(3), 264–273. <https://doi.org/10.37479/jimb.v4i3.14120>
- Brooks, B. A., & Anderson, M. A. (2004). Nursing Work Life in Acute Care. *Journal of Nursing Care Quality*, 19(July), 269–275. <https://doi.org/10.1097/00001786-200407000-00014>
- Cahyani, W., & Frianto, A. (2019). Peran Dukungan Sosial terhadap Stres Kerja sebagai Peningkatan Kinerja Karyawan. [The Role of Social Support on Job Stress as an Employee Performance Improvement]. *Jurnal Ilmu Manajemen*, 7(3), 868–876.
- Deng, J., Guo, Y., Ma, T., Yang, T., & Tian, X. (2019). How job stress influences job performance among Chinese healthcare workers: A cross-sectional study. *Environmental Health and Preventive Medicine*, 24(1), 1–11. <https://doi.org/10.1186/s12199-018-0758-4>
- Donaldson, N., Bolton, L. B., Aydin, C., Brown, D., Elashoff, J. D., & Sandhu, M. (2015). Impact of California's Licensed Nurse-Patient Ratios on Unit-Level Nurse Staffing and Patient Outcomes. *Policy, Politics, & Nursing Practice*, 6(3), 198–210. <https://doi.org/10.1177/1527154405280107>
- Erdius, & Dewi, F. S. T. (2017). Stres Kerja pada Perawat Rumah Sakit di Muara Enim: Analisis Beban Kerja Fisik dan Mental. [Job Stress in Hospital Nurses in Muara Enim: Analysis of Physical and Mental Workload]. *Berita Kedokteran Masyarakat*, 33(9), 439–444. <https://doi.org/10.22146/bkm.25551>
- Fahmi, S. (2016). Pengaruh Stress Kerja dan Konflik Kerja terhadap Semangat Kerja Karyawan pada PT. Omega Mas Pasuruan. [The Influence of Work Stress and Work Conflict on Employee Morale at PT. Omega Mas Pasuruan]. *Jurnal Ekonomi Modernisasi*, 3, 107–116. <https://dx.doi.org/10.21067/jem.v12i3.1462>
- French, S. E., Lenton, R., Walters, V., & Eyles, J. (2000). An empirical evaluation of an expanded nursing stress scale. *Journal of Nursing Measurement*, 8(2), 161–178. <https://doi.org/10.1891/1061-3749.8.2.161>
- Gao, Y., Wong, S. L., Md. Khambari, M. N., & Noordin, N. (2022). A bibliometric analysis of online faculty professional development in higher education. *Research and Practice in Technology Enhanced Learning*, 17(1). <https://doi.org/10.1186/s41039-022-00196-w>
- Golubic, R., Milosevic, M., Knezevic, B., & Mustajbegovic, J. (2009). Work-related stress, education and work ability among hospital nurses. *Journal of Advanced Nursing*, 65(10), 2056–2066. <https://doi.org/10.1111/j.1365-2648.2009.05057.x>
- Hadiansyah, T., Pragholapati, A., & Aprianto, D. P. (2019). Gambaran Stres Kerja Perawat Yang Bekerja di Unit Gawat Darurat [Overview of Work Stress of Nurses Working in the Emergency Unit]. *Jurnal Keperawatan BSI*, 7(2), 50–58. <http://ejournal.ars.ac.id/index.php/keperawatan/article/view/106>
- Halkos, G., & Bousinakis, D. (2010). The effect of stress and satisfaction on productivity. *International Journal of Productivity and Performance Management*, 59(5), 415–431. <https://doi.org/10.1108/17410401011052869>

- Hoboubi, N., Choobineh, A., Kamari Ghanavati, F., Keshavarzi, S., & Akbar Hosseini, A. (2017). The Impact of Job Stress and Job Satisfaction on Workforce Productivity in an Iranian Petrochemical Industry. *Safety and Health at Work*, 8(1), 67–71. <https://doi.org/10.1016/j.shaw.2016.07.002>
- Hoffman, A. J., & Scott, L. D. (2003). Role Stress and Career Satisfaction Among Registered Nurses. *Journal of Nursing Administration*, 33(6), 337–342.
- Intansari, P. K., & Dwiantoro, L. (2021). Kajian Literatur: Upaya Menurunkan Stres Kerja Perawat IGD Melalui Penerapan Kepemimpinan Transformasional. [Efforts to Reduce Emergency Nurse Work Stress through the Application of Transformational Leadership]. *Berkala Ilmiah Mahasiswa Ilmu Keperawatan Indonesia*, 9(2), 117–126. <https://doi.org/10.53345/bimiki.v9i2.215>
- Jennings, B. M. (2008). Work Stress and Burnout Among Nurses: Role of the Work Environment and Working Conditions. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. <http://www.ncbi.nlm.nih.gov/pubmed/21328768>
- Kouvonen, A., Kivimäki, M., Cox, S. J., Cox, T., & Vahtera, J. (2005). Relationship between work stress and body mass index among 45,810 female and male employees. *Psychosomatic Medicine*, 67(4), 577–583. <https://doi.org/10.1097/01.psy.0000170330.08704.62>
- Kusmiati, Y., Widjanarko, B., & Nugraha, P. (2018). Gangguan Kesehatan Akibat Stres Kerja Pada Jajaran Kepolisian Di Polres Wakatobi-Indonesia. [Health Problems Due to Work Stress in Police Officers at the Wakatobi-Indonesian Resort Police]. *Jumantik*, 4(2). <http://dx.doi.org/10.29406/jjum.v4i2.857>
- Loerbroks, A., Shang, L., Angerer, P., & Li, J. (2015). Psychosocial work characteristics and needle stick and sharps injuries among nurses in China: a prospective study. *International Archives of Occupational and Environmental Health*, 88(7), 925–932. <https://doi.org/10.1007/s00420-015-1021-6>
- Malisa, S., Righo, A., & Fahdi, F. K. (2019). Gambaran Tingkat Stres Perawat di Ruang ICU (Intensive Care Unit) dan ICCU (Intensive Cardiac Care Unit) RSUD Dr. Soedarso Pontianak. [Overview of Stress Levels of Nurses in the ICU (Intensive Care Unit) and ICCU (Intensive Cardiac Care Unit) RSUD Dr. Soedarso Pontianak]. *Jurnal ProNers (JPN)*, 4(1). <http://dx.doi.org/10.26418/jpn.v4i1.34473>
- Mangkunegara, A. A. A. P. (2011). *Manajemen sumber daya manusia perusahaan. [Enterprise human resource management]*. In Bandung: PT. Remaja Rosdakarya
- Moral-muñoz, J. A., Herrera-viedma, E., Santisteban-espejo, A., & Cobo, M. J. (2020). *Software tools for conducting bibliometric analysis in science: An up-to-date review*. 29(1), 1–20.
- Mursali, A., Basuki, E., Dharmono, S., Mursali, D. A., & Kes, M. (2009). Relationship between noise and job stress at a private thread spinning company. *Universa Medicina*, 28(1), 8–16. <https://univmed.org/ejurnal/index.php/medicina/article/view/223>
- Park, Y. M., & Kim, S. Y. (2013). Impacts of job stress and cognitive failure on patient safety incidents among hospital nurses. *Safety and Health at Work*, 4(4), 210–215. <https://doi.org/10.1016/j.shaw.2013.10.003>
- Priyatna, H., Mu'in, M., Naviati, E., & Sudarmiati, S. (2021). Gambaran Tingkat Kecemasan dan Stres Kerja Tenaga Kesehatan Puskesmas Saat Pandemi Covid-19. [An Overview of Anxiety Levels and Work Stress of Health Center Health Workers During the Covid-19 Pandemic]. *Holistic Nursing and Health Science*, 4(2), 74–82. <https://doi.org/10.14710/hnhs.4.2.2021.74-82>
- Rachman, S. B. P. (2017). *Faktor Determinan terhadap Stres Kerja pada Pekerja Bagian Produksi di PT Indogravure Tahun 2017. [Determinants of Work Stress in Production Workers at PT Indogravure in 2017]* (Issue 1) [Universitas Islam Negeri Syarif Hidayatullah]. <https://doi.org/10.1017/CBO9781107415324.004>
- Rahmadhani, T. N. (2019). *Risiko Stres Kerja Pada Perawat Instalasi Gawat Darurat Rumah Sakit Sosodoro Djatikoesoemo Bojonegoro Dan Faktor Yang Mempengaruhi. [Risk of Work Stress on Nurses in the Emergency Room of Sosodoro Djatikoesoemo Hospital Bojonegoro And Influencing Factors.]*. Universitas Airlangga.
- Rahmayuliani. (2018). *Pengaruh Stres Kerja Terhadap Kepuasan Kerja Karyawan Pada PT. Semen Bosowa Maros. [The Effect of Job Stress on Employee Job Satisfaction At PT. Cement Bosowa Maros]*. Universitas Muhammadiyah Makassar.
- Río-Rama, M. de la C. del, Maldonado-Erazo, C. P., Álvarez-García, J., & Durán-Sánchez, A. (2020). Cultural and natural resources in tourism Island: Bibliometric mapping. *Sustainability (Switzerland)*, 12(2). <https://doi.org/10.3390/su12020724>
- Seo, J. H., Kim, H. J., Kim, B. J., Lee, S. J., & Bae, H. O. (2015). Educational and relational stressors associated with burnout in Korean medical students. *Psychiatry Investigation*, 12(4), 451–458. <https://doi.org/10.4306/pi.2015.12.4.451>
- Soep, S. (2012). Stres Kerja Perawat Berdasarkan Karakteristik Organisasi Di Rumah Sakit. [Nurses' Job Stress Based on Organizational Characteristics in Hospitals]. *Jurnal Keperawatan Indonesia*, 15(1), 67–74. <https://doi.org/10.7454/jki.v15i1.49>
- Stott, D. H. (1973). Follow-up Study from Birth of the Effects of Prenatal Stresses. *Developmental Medicine & Child Neurology*, 15(6), 770–787. <https://doi.org/10.1111/j.1469-8749.1973.tb04912.x>
- Sulistiyawati, N. N. N., Purnawati, S., & Muliarta, I. M. (2019). Gambaran Tingkat Stres Kerja Perawat Dengan Kerja Shift Di Instalasi Gawat Darurat Rsd Karangasem. [Overview of the Stress Level of Nurses with Shift

- Work at the Emergency Installation of Karangasem Hospital]. *E-Jurnal Medika Udayana*, 8(1), 1. <https://doi.org/10.24922/eum.v8i1.45222>
- Vahey, D. C., Aiken, L. H., Sloane, D. M., Clarke, S. P., & Vargas, D. (2004). Nurse Burnout and Patient Satisfaction. *Med Care*, 42(October 2017), 1157–1166. <https://doi.org/10.1097/01.mlr.0000109126.50398.5a>
- Weigl, M., Stab, N., Herms, I., Angerer, P., Hacker, W., & Glaser, J. (2016). The associations of supervisor support and work overload with burnout and depression: a cross-sectional study in two nursing settings. *Journal of Advanced Nursing*, 72(8), 1774–1788. <https://doi.org/10.1111/jan.12948>
- Zupic, I., & Čater, T. (2015). Bibliometric Methods in Management and Organization. *Organizational Research Methods*, 18(3), 429–472. <https://doi.org/10.1177/1094428114562629>