



JURNAL PENDIDIKAN KEPERAWATAN INDONESIA

Journal Homepage: <http://ejournal.upi.edu/index.php/JPKI>



Novel Competency Development for Occupational Health Nurses: A Study on Training Needs Assessment in Indonesia

Juli Dwi Prasetyono¹, Henny Permatasari¹, Agus Setiawan¹,
Sigit Mulyono¹, Tantut Susanto², Muchtaruddin Mansyur³

¹Department of Nursing Sciences, Faculty of Nursing University of Indonesia, Depok, West Java, Indonesia

²Department of Nursing Sciences, Faculty of Nursing University of Jember, Jember, East Java, Indonesia

³Department of Occupational Health Medicine, Faculty of Medicine, University of Indonesia, Salemba, Jakarta, Indonesia

*Corresponding email: jprasety@uef.fi ; juli.dwi21@ui.ac.id

ABSTRACT

Introduction: The growing demand for continuous professional development (CPD) within the healthcare sector has emphasized the importance of tailored training for various professional roles, including those of occupational health nurses. In Indonesia, there remains a need to better understand the specific job functions and development needs of nurses working in occupational health settings to ensure effective practice and optimal patient outcomes. **Objective:** This study was conducted to map out the roles performed by occupational health nurses in Indonesia and to identify key areas where additional training is most needed. **Method:** A descriptive cross-sectional approach was employed, involving 43 occupational health nurses selected via simple random sampling. Data were gathered using the validated Indonesian adaptation of the Hennessy-Hicks Training Needs Analysis Questionnaire, which evaluates competencies across five domains: research and audit, communication and teamwork, clinical practice, administrative tasks, and leadership or supervisory roles. To determine areas of significant training need, independent t-tests were performed for each questionnaire item. **Results:** The analysis revealed considerable training requirements in 38 of the assessed items. The domain most urgently requiring development was research and audit, which had the highest mean score (2.07). This was followed by clinical functions and management (both 1.65), mental health and resilience-related skills (1.32), collaboration and communication (1.22), and administrative functions (0.58). **Conclusion:** The findings point to a clear need for competency-based training initiatives, with particular emphasis on strengthening research and audit capabilities among occupational health nurses. Healthcare institutions in Indonesia are advised to implement structured educational programs alongside continuous evaluation systems to foster professional advancement and maintain high standards of care.

ARTICLE INFO

Article History:

Received: June 08th, 2025

Revised: June 24th, 2025

Accepted: June 27th, 2025

First Available Online:

June 29th, 2025

Published: June 30th, 2025

Keywords:

Occupational health nurse,
needs analysis, health training,
competencies

1. INTRODUCTION

Nurses are the most abundant human resources (HR) of health workers globally, accounting for 59% of all health professions in the world (*WHO Guidelines on Mental Health at Work*, 2022). Meanwhile, in Indonesia, according to data from the Indonesian Ministry of Health in 2023, nurses are the most health human resources in Indonesia, which is 524,508 people.

Health human resources must have adequate and quality competence in organizing development and health services to the community. In line with efforts to transform health human resources in order to increase the production, distribution, and competence of health workers (Ministry of Health of the Republic of Indonesia, 2024). According to Law Number 17 of 2023 concerning Health, article 273 states that every medical and health worker who will carry out practice has the right to have the opportunity to develop themselves through the development of their competence, science, and professional career. One of the professions of health workers that is the main focus of the health transformation is nursing. This is in line with increasing of the technological and medical advancements, the demand for an excellence health care and dwindling resources are a rather difficult combination (Claire Tyler et al., 2001; Hennessy et al., 2006b, 2006a). To achieve this, attention has been paid to the educational role and training needs of healthcare professionals (Claire Tyler et al., 2001; Hennessy et al., 2006b, 2006a).

Manager and health leaders can use the training needs data for occupational health nurses (OHNs) to achieve a satisfactory level of continuing education according to staff needs (Deborah Hennessy et al., 1998) (Hennessy et al., 2006b) (Adelais Markaki et al., 2021). To access the training needs of participants, this study adopts a valid and reliable instrument, which has been developed based on formal scientific principles (Claire Tyler et al., 2001; Hennessy et al., 2006b, 2006a). By avoiding wish lists, these tools generate responses that are quite honest and based on current job roles and performance (Claire Tyler et al., 2001; Hennessy et al., 2006b, 2006a). Training Needs Assessment (TNA) has been used in several English countries, such as the United Kingdom, New Zealand, the United States and Australia (Claire Tyler et al., 2001; Hennessy et al., 2006b, 2006a). Fortunately in Indonesia, that instrument used to measure a nurses and midwives training and development needs and more recently to link nurse training needs with ongoing professional development (Kathy Holloway et al., 2018) and also in Singapore to identify the education needs of specialist nurses dealing with eye patients (Aw & Drury, 2016). The instrument has been proven to be valid and reliable and instrument at least it has been used by one of them by students of Diponegoro University Indonesia (Adwitiya, 2023a) and by the Faculty of Nursing, Universitas Pelita Harapan (McKenna et al., 2022).

Therefore, quality and continuous improvement is needed in order to support the implementation of health development to improve the highest degree of health. *The World Health Organization* since 2011 has also stated that workplace health HR has an important role to play in protecting and promoting worker health, safety, and well-being as well as workplace sustainability and needs an update evidence on workplace-based strategy or program through action research (Mansyur, 2021) (Thomas et al., n.d.). One of the competencies that is also needed in developing oneself as an OHNs is the promotion of resilience as an effort to strengthen the mental health of workers. Resilience competencies for OHNs must be a serious concern, especially due to the impact of various changes that are increasingly challenging for workers. In addition, climate

change, unstable labour relations are also experienced by all sectors of workers due to insecure recruitment, temporary contracts, unintentional part-time work, and outsourcing. In fact, competencies for risk management, surveillance of hazards, provision of healthy lifestyles, worker self-care training, increased motivation, productivity, physical rehabilitation, protection support and workers' rights are urgently needed in OHNs in the 21st Century (Gok Metin & Yildiz, 2023; Palmer et al., 2013; Rogers et al., 2014; Sönmez et al., 2023). However, there is a little research about competencies OHNs in Indonesia and not too much support from education level. Therefore, the purpose of this study are to find a novel competencies based on the TNA for OHNs in Indonesia.

2. METHOD

Research Design

This study employed a descriptive, cross-sectional survey design to assess the training needs of occupational health nurses (OHNs) in Indonesia. The design was chosen to provide a snapshot of perceived competencies and performance gaps across a range of professional responsibilities at a single point in time. This approach enables the identification of priority areas for targeted training interventions based on current practice conditions.

Population and Sample

The study population comprised occupational health nurses working in various private enterprise clinics and corporate healthcare facilities across Indonesia. Using a simple random sampling method, 43 eligible OHNs were selected to participate in the study. Inclusion criteria included: (1) registered nurses currently working in occupational health services; (2) having a minimum of one year of work experience in this field; and (3) actively involved in providing clinical services. Nurses who were on leave due to illness or who declined to participate were excluded. Demographic data showed that of the 43 participants, 65.1% were male (n=28) and 34.9% were female (n=15). A significant portion of respondents (44.2%) were aged between 25–34 years. Most participants had more than five years of professional experience in occupational health (72.1%), with 46.5% earning a monthly income of approximately 2.6 million rupiah. In terms of educational background, 55.8% held a bachelor's degree in nursing. The most commonly attended training programs among participants were Basic Life Support (BLS) and Basic Trauma Life Support (BTLS), reported by 44.2% of respondents.

Instrument

Data collection for this study employed the Indonesian version of the Hennessy-Hicks Training Needs Analysis (TNA) Questionnaire, a widely recognized instrument originally developed by Hennessy and Hicks in 1996 at the University of Birmingham. The tool has been endorsed by the World Health Organization and is noted for its validity and reliability across various healthcare settings. Designed to assess both the perceived importance and actual performance of professional tasks, the TNA facilitates the identification of specific areas where training is required. The Indonesian adaptation, translated and validated by the Faculty of Nursing at Universitas Pelita Harapan, has been previously used in local nursing research, demonstrating

acceptable psychometric properties (McKenna et al., 2022; Adwitiya, 2023a). The core version includes 30 items distributed across five domains: research and audit, communication and teamwork, clinical practice, administrative duties, and management or supervision. For the purposes of this study, a sixth domain—resilience promotion—was incorporated based on the trauma and resilience competency framework developed by Wheeler and Phillips (2021). Each item was rated on a 7-point Likert scale, with 1 indicating "not important at all" and 7 indicating "very important." The questionnaire captures four key dimensions: Rank A assesses the perceived importance of each task within the respondent's role; Rank B evaluates the individual's self-reported performance; the difference between A and B scores constitutes the Training Need Index; and Ranks C and D further evaluate the potential for skill improvement through structured training or educational interventions.

Procedure

Prior to data collection, formal permission was obtained from clinic administrators and ethical review boards. Following institutional approval, the questionnaire—along with a participant information sheet and informed consent form—was distributed to selected OHNs at participating health facilities. Nurses were given the option to complete the instrument anonymously and return it via sealed envelope to ensure confidentiality. Participants who met the inclusion criteria were informed about the study objectives and procedures. Completion and return of the questionnaire were considered an expression of informed consent. The data collection process ensured voluntary participation, and participants were assured that their responses would be used solely for research purposes.

Data Analysis

Data were entered and analyzed using IBM SPSS Statistics version 25. Descriptive statistics were calculated for demographic variables, including means, standard deviations, and frequency distributions. To examine the magnitude of training needs, paired comparisons between perceived importance and self-assessed performance (A-B) for each item were conducted using a series of independent t-tests. The internal consistency of the questionnaire was evaluated using Cronbach's alpha coefficient, ensuring reliability of the instrument across all domains. A significance level of $p < 0.05$ was used to determine statistical relevance. Where necessary, additional multivariate linear regression analyses were conducted with a relaxed entry threshold of $p < 0.20$, to explore potential associations between demographic variables and training needs.

Ethical Clearance

Ethical approval for this study was obtained from the institutional ethics review board affiliated with the Faculty of Nursing, Universitas Pelita Harapan. All procedures involving human participants adhered to the ethical principles outlined in the Declaration of Helsinki. Participants were provided with clear information about the study's purpose, voluntary nature, confidentiality safeguards, and their right to withdraw at any time without consequence. Informed consent was obtained prior to participation and recorded through signed consent forms and the return of completed questionnaires.

3. RESULT

Respondent Characteristics

A total of 38 items of the TNA questions were tested for their internal reliability using Cronbach's alpha coefficient. The five categories of domains showed a very high internal consistency (0.60-0.91) across all scale (4,5,18,21), with the administrative category having the lowest prices due to the minimal number of goods (19). Therefore, it seems that the tool has significant internal reliability.

Table 1. Frequency Distribution of Characteristics of Occupational Health Nurse Respondents Indonesia 2023 (n=43)

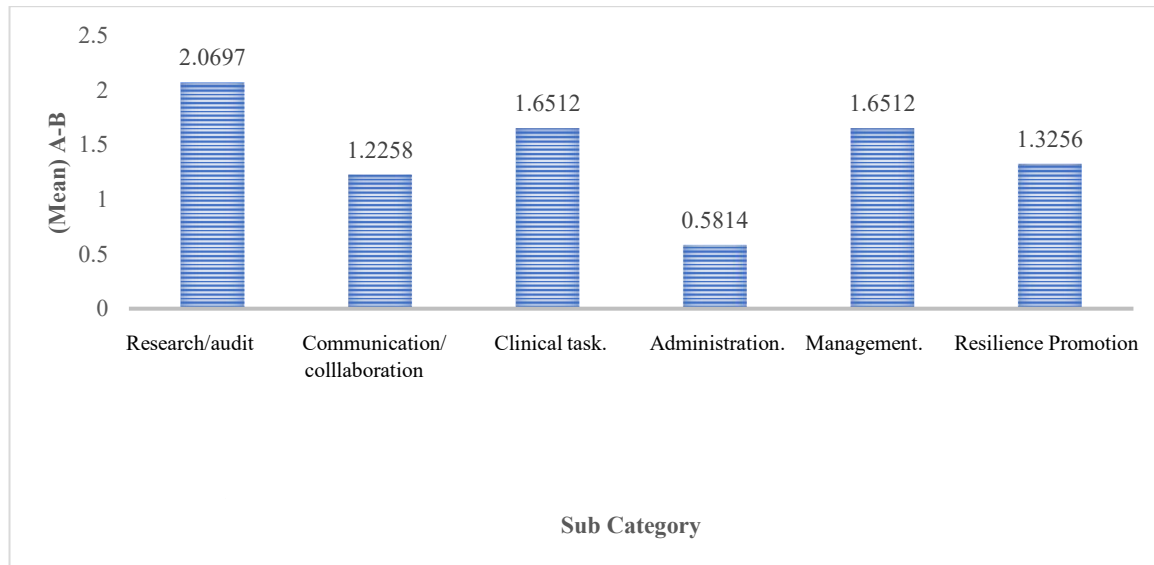
Characteristic	Number	Percentage (%)
Age (years)		
15-24	3	7.0
25-34	19	44.2
35-44	16	37.2
45-54	5	11.6
Gender		
Male	28	65.1
Female	15	34.9
Length of Work (years)		
< 5	12	27.8
> 5	31	72.1
Salary (milion)		
> 6	16	37.2
< 6	27	62.8
Education level		
Diploma	14	32.6
Bachelor	24	55.8
Master	5	11.6
Training Experience		
Not yet	2	4.7
BLS (basic life support), BTLS (basic trauma and life support)	19	44.2
Hiperkes (Occupational Health and Industrial Hygiene)	17	39.5
First aid	3	7.0
PPI (Infection Prevention and Control)	2	4.6

Based on the table above, the research respondents were male (65.1%), with an age of 25-34 years (44.2%). Most of them are nurses who have worked > 5 years (72.1%) and have an average income lower than 6 million (62.8%). The education level of the respondents is a bachelor (55.8%) with the most training experience has been followed, namely *Life Support Assistance* (BLS and BTLS) at 44.2%.

Training Needs Analysis (whole sample)

The score comparison between the importance level of competence (rating A) and the ability to perform competencies (rating B) presenting the training needs level. The larger score difference are showing the greater training need level for OHNs. In cases where an activities rated high on A but low rated on B, the training needs are high and enhance OHNS competencies such as by course training should be a high or first priority. If the activities rated low on A and B, then the activities

may be considered for course training, but with a lower priority. When a activities rated high A and high B, then no course training for OHNs are required, and finally, if the activities rated low A and high B, then no OHNs training are required. (Hennessy et al., 2006a)



Graph 1. Mean Differences in Training Needs

The results showed that among the five sub-categories of Hennessy-Hicks Training Analysis, the research/audit category is the highest training needs of (2.07), followed by the training needs of clinical activities (1.65), management (1.65), resilience promotion (1.32), communication/cooperation (1.22) and administration (0.58). Research/audit competencies are considered the most important to be a training priority for nurses in line with several studies in Africa (Kordom et al., 2023), Taiwan (Janice Gaspard et al., 2016), and Indonesia (Adwitiya, 2023b).

Based on the finding the TNA for OHNs dimensions listed in the Hennessy-Hicks Training Analysis were little different. Continuing nursing education programs typically cover a wide range of topics related to the advancement of nursing science, nursing ethics and law, handling specialized clinical cases, and improving communication and leadership skills. Improving clinical skills, the use of medical technology, nursing management, and research can also be part of continuing education. Thus, this is according with the Decree of the Minister of Health of the Republic of Indonesia Number HK.01.07/MENKES/425/2020 concerning Nurse Competency Standards stating that nurses' self-development can be done by participating in training, *workshops* and seminars.

4. DISCUSSION

The purpose is to identify the training needs of OHNs in Indonesia. On the previous research, it have provide valid psychometric training needs instruments for nurses, family planning nurses, nurse practitioners and midwives (Adelais Markaki et al., 2009; Aw & Drury, 2016; Deborah Hennessy et al., 1998; Gaspard & Yang, 2016a; Hendy et al., 2024; Hennessy et al., 2006b, 2006a;

Kathy Holloway et al., 2018; Kordom et al., 2023). The questionnaires are distributed to physicians, clinical staff (including pharmacists, physiotherapists, social workers, etc.) and nonclinical staff (including practice managers, technical staff and administrators) (Hicks, 2011) (Gaspard & Yang, 2016b)(Kordom et al., 2023). Therefore, according the proven previous study this questionnaire is appropriately to identify training needs in OHNs.

Cronbach's alpha coefficient has been used to check the internal reliability of the TNA questionnaire. Training needs assessment from all respondents: A comparison of the importance of nurses' competencies and abilities showed that healthcare professionals had significant training needs for almost all 38 items. These findings are also in line with research conducted on a non specialist breast care nurses (Hicks, 2011) in two studies in Indonesia on midwives (Hennessy et al., 2006b), on professionals health care, health managers and technical staff (Barratt & Fulop, 2016) and on nurses (Hennessy et al., 2006a). However, a study from Australian nurses showed a higher training need in the domain of research and auditing (Carlisle et al., 2012). Since all activities have an importance level of, it will difficult to prioritize the training needs. As a result, all activities state the need for further development of the educational level. However, with a limited budget it is a challenge to achieve quality and high-quality educational programs of health services. Other implications of this tool can occur at the globally level. At the national level, the TNA tool is a found for Greek health authorities to develop appropriate and high-quality programs for healthcare professionals across Greece (Adelais Markaki et al., 2021). In the international level, it can be beneficial for managers, health planners, and researchers from EU countries (Adelais Markaki et al., 2009), also for organizations because it can maximize the benefits (Carlisle, 2012).

Every nurse must have the ability to think critically so that they can provide quality care. The results of research on occupational health nurses in Indonesia show that the evaluation of critically published research is still very important. A 2016 study in Bekasi found a link between critical thinking and the ability to provide nursing care. (Adwitiya, 2023a). Nurses who have critical thinking skills will have critical thinking skills rationally before evaluating patient needs data and follow-up nursing actions to be given. During the decision-making process about care, it is important for nurses to think critically about them in order for the care provided to be more efficient and effective. The study shows that nurses believe training in the research dimension will help them better analyse patient data. Critical thinking training can help nurses improve their intellectual abilities, which has an impact on the way they think when providing care. (Deniati et al., 2016).

According to the research conducted, establishing a relationship with patients (BHSP) requires the most communication training. Building a Relationship of Mutual Trust (BHSP) is a relationship built between nurses and patients through communication to increase patient trust. Nurses must have the ability to apply therapeutic communication to patients so that patients feel comfortable and trust in nurses. When BHSP is formed between nurses and patients, implementing therapeutic communication will be easier and more effective. When there is trust, both nurses and patients will have an easier time handling and caring for patients. Cooperation with medical personnel and other health teams is also needed to provide nursing care to workers. Effective communication can improve the quality of care provided. Therefore, the impact of ineffective communication, which means no effective collaboration, can lead to poorer patient care.

(Simamora, 2020; Sumangkut et al., 2019) Good communication between the medical team and patients can increase patient confidence in recovery, so the medical team is expected to communicate well to help patients (Paramitha et al., 2022).

Nurses who have clinical skills are important to be able to provide high-quality services. Clinical and cognitive nursing abilities are also required. Lisa McKanne's 2021 research shows that the component "Prioritizing work based on patient needs" has a lower score than other components, in line with the results of the research conducted. This can indicate an inability to understand how to set priorities and care needs to enhance the impact of patient safety and the quality of nursing services. Training can improve the professionalism of nurses. (McKenna et al., 2022) The lack of professional attitude of nurses will lead to worse health services. According to the results of the research conducted, nurses believe that training can help them better assess the physical needs of patients. Therefore, regular training is required to acquire the latest knowledge and develop nurses to ensure effective services care. (Holy et al., 2023; Koerniawan et al., 2021).

With the advancement of using a current technology, the role of informations and communication technology in the world of nursing has grown. A study conducted by Sukihananto and Ahmad in 2019 showed that nurses feel better using information systems because they reduce the time spent taking notes. On the other hand, not all nurses have the ability to operate the current system. The nurses said that one of the reasons they didn't have enough skills was because they didn't receive enough training. According to this study, nurses believe that an effective training program will help them in performing activities that require the use of technical equipment, such as computers (Syam & Sukihananto, 2019).

Nurse performance is a health professional to provide the quality of health services is also determined by the performance of nurses, so competent nurses are needed to do it. Self-appraisals, also known as performance appraisals, can help employees be more honest, improve behaviour, and measure differences. This research shows that nurses believe that getting training can help them assess their own performance. One effective action is self-assessment, which involves individuals in finding ways to develop aspects of themselves that are considered lacking. Training can provide an opportunity for individuals to learn about self-development and give them the opportunity to get to know themselves better about their abilities, the strategies they can use, the way of thinking, and the future plans they want to achieve based on the results of their reflections. (Saadah et al., 2021).

Competence in promoting resilience is also a novel activities to be an important competencies for OHNs in carrying out their role to help provide nursing care to workers. This is similar with the various recommendations from previous research regarding the importance of promoting resilience for workers. Health resilience promotion services are needed by various occupational professions such as nurses and medical personnel (Chen et al., 2022; Cooper et al., 2020; Gertler et al., 2023; Ghahramani et al., 2023). In addition, the school teacher profession (Amin et al., 2006) (Larasati & Kuswandono, 2023), firefighters (Ballard et al., 2023), police officers, air traffic controllers, health professionals (Buntoro et al., 2023); construction workers experience extreme levels of stress, burnout, hardship, and trauma in the workplace to be affected a negative mental health. The need to support individuals working in the field is well known, and resiliency has been identified as a major protective factor (Raffaël Kalisch et al., 2017) (Cooper et al., 2021).

5. CONCLUSION

This study shows that there is training needed by occupational health nurses in accordance with the order of urgency in providing nursing care in the workplace. The results showed that among the five sub-categories of *Hennessy-Hicks Training Analysis*, the research/audit category had the highest training needs of (2.07), followed by the training needs of clinical activities (1.65), management (1.65), resilience promotion (1.32), communication/cooperation (1.22) and administration (0.58). *Research/audit* competencies are considered the most important to be a training priority for nurses in line with several studies in Africa (Kordom et al., 2023), Taiwan (Janice Gaspard et al., 2016), and Indonesia (Adwitiya, 2023b). The various sub-categories of training competency needs for occupational health nurses in Indonesia above can be an advantage for improving the quality of the nursing care, especially for clients and patients in the work environment. The health training program is one of the priorities in strengthening the quality of health professional staff in Indonesia regarding with the pillars of transformation in the health sector. The implications of the questionnaires are so helpful for health managers, by developing and organizing more appropriate and specific training courses, based on the needs of health care professionals. In addition, by systematically identifying specific needs, using these instruments, it may be beneficial due to limited training budgets. By provide an effective research and development strategies for OHNs it can be a big step in developing high-quality healthcare services especially for workers health.

6. ACKNOWLEDGEMENT

Thank you to the Head of the Doctoral Nursing Study Program, Faculty of Nursing, the Indonesian Occupational Health Nurses Association (PERKESJA) and the Faculty of Medicine, University of Indonesia, as well as all research respondents who are willing to participate in this study.

7. DECLARATION

Ethical approval This study has received permission and recommendation from the Ethics Commission of the Faculty of Nursing, University of Indonesia with Number: KET-186/UN2.F12.D1.2.1/PPM.00.02/2024.

Informed consent Informed consent was obtained from all individual participants included in the study.

No Conflict of Interest

The authors declare no competing interests.

8. REFERENCES

Adelais Markaki, Adelais Markaki, Athanasios Alegakis, Athanasios Alegakis, Nikos Antonakis, Nikos Antonakis, Athena Kalokerinou-Anagnostopoulou, Athena Kalokerinou-Anagnostopoulou, Christos Lionis, & Christos Lionis. (2009). Exploring training needs of nursing staff in rural Cretan primary care settings. *Applied Nursing Research*. <https://doi.org/10.1016/j.apnr.2008.12.002>.

- Adelais Markaki, Adelais Markaki, Shreya Malhotra, Shreya Malhotra, Rebecca Billings, Lisa Theus, Rebecca Billings, & Lisa Theus. (2021). Training needs assessment: Tool utilization and global impact. *BMC Medical Education*. <https://doi.org/10.1186/s12909-021-02748-y>.
- Adwitiya, R. D. (2023a). *Kebutuhan Pelatihan Pada Perawat Sebagai Upaya Pelaksanaan Pendidikan Keperawatan Berkelanjutan (PKB)*.
- Adwitiya, R. D. (2023b). *Kebutuhan Pelatihan Pada Perawat Sebagai Upaya Pelaksanaan Pendidikan Keperawatan Berkelanjutan (PKB)*.
- Amin, Z., Chong, Y. S., & Khoo, H. E. (2006). *Practical guide to medical student assessment*. World Scientific.
- Aw, A. T., & Drury, V. (2016). Identification of the educational needs and feasible educational modalities for specialist nurses working with ophthalmic patients in a tertiary eye centre in Singapore. *Proceedings of Singapore Healthcare*, 25(4), 215–221. <https://doi.org/10.1177/2010105816647743>.
- Ballard, M., Olaniran, A., Iberico, M. M., Rogers, A., Thapa, A., Cook, J., Aranda, Z., French, M., Olsen, H. E., Haughton, J., Lassala, D., Carpenter Westgate, C., Malitoni, B., Juma, M., & Perry, H. B. (2023). Labour conditions in dual-cadre community health worker programmes: A systematic review. *The Lancet Global Health*, 11(10), e1598–e1608. <https://doi.org/10/gthcqn>.
- Barratt, H., & Fulop, N. J. (2016). Building capacity to use and undertake research in health organisations: A survey of training needs and priorities among staff. *BMJ Open*, 6(12), e012557. <https://doi.org/10.1136/bmjopen-2016-012557>.
- Buntoro, Folamauk, Nurina, Kleden, & Handoyo. (2023). Resilience, depression and their effect on nurse retention: A survey in rural Indonesia. *Rural and Remote Health*. <https://doi.org/10.22605/RRH7725>.
- Carlisle, J. B. (2012). The analysis of 168 randomised controlled trials to test data integrity. *Anaesthesia*, 67(5), 521–537. <https://doi.org/10.1111/j.1365-2044.2012.07128.x>.
- Chen, W., Zhou, S., Zheng, W., & Wu, S. (2022). Investigating the Relationship between Job Burnout and Job Satisfaction among Chinese Generalist Teachers in Rural Primary Schools: A Serial Mediation Model. *International Journal of Environmental Research and Public Health*, 19(21). Scopus. <https://doi.org/10.3390/ijerph192114427>.
- Claire Tyler, Claire Tyler, Carolyn Hicks, & Carolyn Hicks. (2001). The occupational profile and associated training needs of the nurse prescriber: An empirical study of family planning nurses. *Journal of Advanced Nursing*. <https://doi.org/10.1046/j.1365-2648.2001.01896.x>.
- Cooper, A. L., Brown, J. A., & Leslie, G. D. (2021). Nurse resilience for clinical practice: An integrative review. *Journal of Advanced Nursing*, 77(6), 2623–2640. <https://doi.org/10/gp6nf5>.
- Cooper, A. L., Brown, J. A., Rees, C. S., & Leslie, G. D. (2020). Nurse resilience: A concept analysis. *International Journal of Mental Health Nursing*, 29(4), 553–575. <https://doi.org/10.1111/inm.12721>.
- Deborah Hennessy, Deborah Hennessy, Carolyn Hicks, & Carolyn Hicks. (1998). A Cross-Cultural Tool To Identify Continuing Education Needs. *International Nursing Review*. <https://doi.org/10.1046/j.1466-7657.45.no.4issue340.4.x>.

- Deniati, K., Anugrahwati, R., & Suminarti, T. (2016). *Pengaruh Berfikir Kritis Terhadap Kemampuan Perawat Pelaksana Dalam Melakukan Asuhan Keperawatan Di Rumah Sakit Hermina Bekasi Tahun 2016*. 12.
- Gaspard, J., & Yang, C.-M. (2016a). Training needs assessment of health care professionals in a developing country: The example of Saint Lucia. *BMC Medical Education*, 16(1), 112. <https://doi.org/10.1186/s12909-016-0638-9>.
- Gaspard, J., & Yang, C.-M. (2016b). Training needs assessment of health care professionals in a developing country: The example of Saint Lucia. *BMC Medical Education*, 16(1), 112. <https://doi.org/10.1186/s12909-016-0638-9>.
- Gertler, J., Dale, L., Tracy, N., Dorsett, J., Sambuco, N., Guastello, A., Allen, B., Cuffe, S. P., & Mathews, C. A. (2023). Resilient, but for how long? The relationships between temperament, burnout, and mental health in healthcare workers during the Covid-19 pandemic. *Frontiers in Psychiatry*, 14, 1163579. <https://doi.org/10/gthctd>.
- Ghahramani, S., Bagheri Lankarani, K., Ahmadi Marzaleh, M., Sayari, M., & Moradi, H. (2023). Resilient Nurses in the COVID-19 Compared With Non-COVID-19 Wards. *Disaster Medicine and Public Health Preparedness*, 17, e351. <https://doi.org/10/grjsm4>.
- Gok Metin, Z., & Yildiz, A. N. (2023). Update on occupational health nursing through 21st century requirements: A three-round Delphi study. *Nurse Education Today*, 120, 105657. <https://doi.org/10/gr7sbb>.
- Hendy, A., Alsharkawy, S. S., Al-Kurdi, Z., El-Nagger, N. S., Hendy, A., Sayed, S., Al-Mugheed, K., Alsenany, S. A., & Farghaly Abdelallem, S. M. (2024). Impact of On-the-Job Training on Nurses' Performance in Creating a Healing Environment and Clustered Nursing Care for Premature. *SAGE Open Nursing*, 10, 23779608241255863. <https://doi.org/10.1177/23779608241255863>.
- Hennessy, D., Hicks, C., Hilan, A., & Kawonal, Y. (2006a). A methodology for assessing the professional development needs of nurses and midwives in Indonesia: Paper 1 of 3. *Human Resources for Health*, 4(1), 8. <https://doi.org/10/dhdppf>.
- Hennessy, D., Hicks, C., Hilan, A., & Kawonal, Y. (2006b). The training and development needs of nurses in Indonesia: Paper 3 of 3. *Human Resources for Health*, 4(1), 10. <https://doi.org/10/dsmtmg>.
- Hicks, P. C. (2011). *Hennessy-Hicks Training Needs Analysis Questionnaire And Manual*.
- Holy, I., Haedar, H., & Dewi, S. R. (2023). Pengaruh Pelatihan Dan Pengembangan Karyawan Terhadap Produktivitas Kerja Karyawan. *Jesya*, 6(2), 1761–1771. <https://doi.org/10.36778/jesya.v6i2.1134>.
- Janice Gaspard, Janice Gaspard, Che Ming Yang, & Che Ming Yang. (2016). Training needs assessment of health care professionals in a developing country: The example of Saint Lucia. *BMC Medical Education*. <https://doi.org/10.1186/s12909-016-0638-9>.
- Kathy Holloway, Kathryn Holloway, Kerri Arcus, Georgina Orsborn, Kerri Arcus, & Georgina Orsborn. (2018). Training needs analysis – The essential first step for continuing professional development design. *Nurse Education in Practice*. <https://doi.org/10.1016/j.nepr.2017.09.001>
- Kementerian Kesehatan RI. (2024). *Pedoman Pelatihan dan Peningkatan Kompetensi Bidang Kesehatan*. Direktorat Mutu Peningkatan Tenaga Kesehatan Republik Indonesia.

- Koerniawan, D., Mariadi, P. D., Suryani, K., Rini, M. T., & Nurjanah, V. (2021). *Pelatihan Rancangan Penelitian Bagi Perawat Klinis*.
- Kordom, A., Daniels, F., & Chipps, J. (2023). Training needs of professional nurses in primary health care in the Cape Metropole, South Africa. *African Journal of Primary Health Care & Family Medicine*, 15(1). <https://doi.org/10.4102/phcfm.v15i1.3741>.
- Larasati, R., & Kuswandono, P. (2023). Enhancing Teachers' Resilience through Teacher Professional Development. *Language Circle: Journal of Language and Literature*, 17(2), 391–402. <https://doi.org/10.15294/lc.v17i2.42673>.
- Mansyur, M. (2021). Occupational Health, Productivity and Evidence-Based Workplace Health Intervention. *Acta Medica Philippina*, 55(6). <https://doi.org/10.47895/amp.v55i6.4273>.
- Markaki, A., Malhotra, S., Billings, R., & Theus, L. (2021). Training needs assessment: Tool utilization and global impact. *BMC Medical Education*, 21(1), 310. <https://doi.org/10/g5rd>.
- McKenna, L., Sommers, C. L., Reisenhofer, S., Mambu, I. R., McCaughan, J., & Belihu, F. B. (2022). Professional development needs of registered nurses in Indonesia: A cross-sectional study. *Nurse Education Today*, 119, 105543. <https://doi.org/10.1016/j.nedt.2022.105543>.
- Palmer, K. T., Brown, I., & Hobson, J. (Eds.). (2013). *Fitness for work: The medical aspects* (Fifth edition). Oxford University Press.
- Paramitha, D. S., Kirana, R., & Akbar Muhaimin Mpr, A. R. (2022). Pentingnya Kualitas Komunikasi Perawat Dan Dokter Sebagai Upaya Peningkatan Kepuasan Pasien Di Rumah Sakit. *Jurnal Keperawatan Suaka Insan (Jksi)*, 7(2), 188–194. <https://doi.org/10.51143/jksi.v7i2.357>.
- Raffaël Kalisch, Raffael Kalisch, Dewleen G. Baker, Dewleen G. Baker, Ulrike Basten, Ulrike Basten, Marco P. Boks, Marco P. Boks, George A. Bonanno, George A. Bonanno, Eddie Brummelman, Eddie Brummelman, Andrea Chmitorz, Andrea Chmitorz, Guillén Fernández, Guillén Fernández, Christian J. Fiebach, Christian J. Fiebach, Isaac R. Galatzer-Levy, ... Birgit Kleim. (2017). The resilience framework as a strategy to combat stress-related disorders. *Nature Human Behaviour*. <https://doi.org/10.1038/s41562-017-0200-8>.
- Rogers, B., Kono, K., Marziale, M. H. P., Peurala, M., Radford, J., & Staun, J. (2014). International Survey of Occupational Health Nurses' Roles in Multidisciplinary Teamwork in Occupational Health Services. *AAOHN Journal*, 62(7), 274–281. <https://doi.org/10/gtjrqx>.
- Saadah, S., Paramarta, V., & Saepudin, D. (2021). Implementasi Pemodelan Self Assesment Dalam Penilaian Kinerja Karyawan. *Techno-Socio Ekonomika*, 14(2), 126–134. <https://doi.org/10.32897/techno.2021.14.2.604>.
- Simamora, R. H. (2020). Pelatihan Komunikasi Efektif untuk Meningkatkan Efikasi diri Perawat dalam Pelaksanaan Identifikasi Pasien. *Jurnal Ilmiah Kesehatan Masyarakat: Media Komunikasi Komunitas Kesehatan Masyarakat*, 12(1), 49–54. <https://doi.org/10.52022/jikm.v12i1.62>.
- Sönmez, B., Yıldız Keskin, A., İspir Demir, Ö., Emirlioğlu, R., & Güngör, S. (2023). Decent work in nursing: Relationship between nursing work environment, job satisfaction, and physical and mental health. *International Nursing Review*, 70(1), 78–88. Scopus. <https://doi.org/10/gthcrc>.

- Sumangkut, C. E., Boham, A., & Marentek, E. A. (2019). *Peran Komunikasi Antar Pribadi Perawat Dengan Pasien Gangguan Jiwa Di Rumah Sakit Ratumbusang Manado*.
- Syam, A., & Sukihananto. (2019). Manfaat dan Hambatan dalam Pelaksanaan Sistem Informasi Keperawatan. *Jurnal Keperawatan Muhammadiyah*.
- Thomas, G., Burton, N. C., Mueller, C., & Page, E. (n.d.). *Comparison of Mold Exposures, Work-related Symptoms, and Visual Contrast Sensitivity between Employees at a Severely Water-damaged School and Employees at a School without Significant Water Damage*.
- Wheeler, K., & Phillips, K. E. (2021). The Development of Trauma and Resilience Competencies for Nursing Education. *Journal of the American Psychiatric Nurses Association*, 27(4), 322–333. <https://doi.org/10.1177/1078390319878779>.
- World Health Organization. (2022). *WHO guidelines on mental health at work*. World Health Organization. ISBN :978-92-4-005305-2.

