



How to Assess Nurse Learning Needs Through Training Needs Analysis: Mixed Methods Study



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Abstract

Training has a very important role in improving the performance of nurses. This study aims to assess nurses' learning needs through the training needs of nurses. This study used a mixed-methods design. The first phase involved an online survey. The second phase of qualitative research involved conducting structured interviews with 8 nurses. A total of 413 nurses participated in this survey. Nurses' competence was found in the competence of meeting fluid and electrolyte needs with a mean of 3.8 (SD: 0.7), the most expected training model was mixed training (47.2%), the most expected form of audio-visual media (94.7%), internal training (95.2%), and the flexibility of the training time (68%). The results of the interviews indicate that it is necessary to map the nurse's competence. Learning needs can describe the competence of nurses and the training needed to improve their self-competence. Training Needs Assessment should be carried out thoroughly, including the need for forms of learning and media, which need to be facilitated by nurse management to motivate nurses to learn and improve their skills.

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1 Introduction

An essential organizational activity, training tries to improve trainees' performance by influencing positive changes in their knowledge, abilities, and attitudes (Jira et al., 2020). Training teaches skills to new and permanent employees so that they can carry out their responsibilities according to standards (Mohanraj & Nadu, 2017). A needs assessment can help determine training as the right solution to improve performance. Training needs assessment ensures that training needs are not simply a waste of time and resources (Barbazette, 2006). Compared to other firm assets, human resources (HR) are crucial because they manage the organization of the business. In addition to requiring special consideration and rights fulfilment, HR should be viewed as a partner in attaining company objectives. Developing or providing training for low-performing employees is expected to minimize the gap between their competencies (Jira et al., 2020).

The analysis of training needs for nurses during the COVID-19 pandemic season at hospitals before the pandemic season and during the pandemic season was based on reports from each care unit and then analyzed in the form of a TNA report. An analysis that is more personal to nurses was conducted to determine their training needs. The findings of a study by Ludwikowska (2019), show that factors such as training requirements analysis, training transfer, and employee efficiency have a favourable link. This discovery will help in the design of training programs for ongoing professional development, which will increase efficiency and benefit the organization (Ludwikowska, 2019). Training plays a strategic role in improving employee performance and capabilities to support healthcare workers (Mahmud et al., 2019; Sarre et al., 2018). The results of the TNA survey can assist the coaching team in formulating appropriate learning strategies for staff in organizations (Purnell, 2020), an important first step in educational planning in continuing education that can provide useful knowledge and skills for nurses, effectively and cost-effectively (Mohamadi et al., 2019), and a simple analysis to identify training needs (Febriani & Yusuarsono, 2018).

Every Hospital conducts a TNA to assess the knowledge, abilities, and competencies of all staff members in support of the hospital's aim of providing high-quality, secure services. The results obtained in this TNA only list the type of training, the number of participants, and the location of the training. The need for learning methods, learning media, and forms of training that provide opportunities for independent learning for nurses has not been explained in the TNA. Nurses are at the front line of defence in health care (Goodwin et al., 2020). The number of deaths of nurses indicates the need for special attention. According to a report from the International Council of Nursing (ICN), 90.000 nurses were infected with Covid-19, and 260 deaths were reported by these professionals (Pereira, 2020). For all medical professionals, including nurses, ongoing professional development is crucial for maintaining current and delivering high-quality care (Alnair et al., 2019).

Febriani & Yusuarsono (2018), states that a government organization must always provide support to each employee to deal with changes that occur such as internal and external changes by increasing competence through training. The purpose of the LNA is not to document educational needs but to identify the most needed learning strategies. If there is a significant change in a skill, it is necessary to recommend training (Pilcher, 2016), and identify what individuals or groups need to learn (Mohamadi et al., 2019).

These training gaps and needs should be considered in future training developments, continuous professional development should be continuously enhanced on an evidence-based basis, and TNA should precede the preparation and implementation of training programs. Training must be provided according to career paths so that every nurse has the opportunity to receive fair and appropriate training (Alnair et al., 2019). Officers' awareness and preparedness in dealing with a pandemic are obtained in the low category therefore effective education and training programs must be implemented to ensure proper practice during the COVID-19 pandemic (Elhadi et al., 2020). Casline et al. (2021), recommend the training section implement a program to meet needs. This gap outlines the factors that training departments must consider when implementing a physical distancing policy, such as safeguarding the health of students and clients, ensuring standardized assessment administration, offering opportunities for seeking developmentally appropriate

training, and ensuring transparency in the approval and feedback processes. This suggests that incorporating flexibility into clinical training programs' curricula can help them maintain accreditation requirements while also fostering trainee competency in assessment during the COVID-19 pandemic (Casline et al., 2021). The general purpose of study was to analyze the training needs of nurses during the COVID-19 after pandemic season.

2 Materials and Methods

A mixed-methods research design was used in this study. The first phase of the study used an analytical observational design with an online survey instrument provided to nurses. Analytical observations of the TNA method have both advantages and disadvantages. The advantage is in terms of minimizing subjective assessments from the party providing the assessment and the party being assessed, while the weakness is that if the assessor does not provide honest information, the results will be biased. Phase 2 research is a qualitative study. Mix methods are used to obtain complete, valid, reliable, and objective data and information. The mixed methods in this research are those with sequential explanatory designs, that collaborate successively with quantitative and qualitative research methods. Mixed methods are said to be the best research technique because qualitative approaches may compensate for quantitative methods' flaws and vice versa (Sugiyono, 2017). Qualitative research uses structured interviews to complete quantitative data related to nursing training needs.

The population in this study were all nurses who worked at Central General Hospital as many as 1036 respondents. The Institutional Review Board of Central General Hospital gave hospital approval to this study, which adheres to the 1964 Helsinki Declaration and its later amendments. The respondents' rights were all upheld, and written permission was secured. All respondents were made aware that participation was entirely optional and that they might stop at any point without any negative effects on their evaluation of their performance (Haapio & Viitaniemi, 2008; Pope et al., 2004).

In the first stage of quantitative research, the samples in the study were collected based on Krejcie and Morgan tables using a stratified random sampling procedure. The second phase of the research used structured interview information sources selected by purposive sampling technique of the person in charge of services at Central Hospital to obtain information about training needs for care during the pandemic season. Statements in the online-distributed questionnaire-based study tool were verified by two specialists. The expert's considerations were considered representative enough as the basis for deciding that the developed questionnaire and observation format met the content validity requirements. Content validity using the Gregory formula was found to be 0.97 in the very valid category. The instrument was then assessed for the characteristics of nurses' competence using the product-moment correlation validity test and reliability testing using Cronbach alpha with the participation of 30 nurses (Candiasa, 2019; Sugiyono, 2018). All self-competence evaluation statement items had a value > 0.3 and a p-value of $0.000 < 0.05$ so all statement items are valid. The reliability test was obtained with Cronbach's Alfa 0.94 which means the research instrument is reliable.

3 Results and Discussions

3.1 Results

Of 450 online questionnaires distributed, 413 nurses participated. The respondent's characteristic data is arranged based on the characteristics of age, gender, educational status, length of work, and unit where they work.

Table 1
Characteristic of respondent description

Characteristic	Sample (n=413)
Age (mean, SD)	38.2±8.6
Gender (n, %)	
Male	103 (24.9%)
Female	310 (75.1%)
Educational status (n, %)	
Nursing diploma	257 (62.2%)
Bachelor of Nursing	149 (36.1%)
Master of Nursing	7 (1.7%)
Duration of work (mean, SD)	14.8±8.7
Work unit (n, %)	
Emergency department	63 (15.3%)
Outpatient department	64 (15.5%)
Inpatient department	151 (36.5%)
Intensive care department	74 (17.9%)
Operating theatre department	19 (4.6%)
Cardiology center	28 (6.8%)
Cancer service department	14 (3.4%)

Table 1 shows the age characteristics with a mean of 38.2 years (SD: 8.6). Gender was found to be female (75.1%), the educational status of the respondents obtained a Diploma in nursing (62.2%), and length of work obtained an average of 14.8 years (SD: 8.7). Based on the work unit, the highest number was from inpatient units (34.6%).

Nurses' perceptions of activities that support work

Training is the most choice of nurses' answers to activities that support work (87.9%). This shows that nurses prefer to attend training than formal education. Nurses' perceptions of self-competence were evaluated using 13 statements of basic competence.

Table 2
Nurse's self-assessment of self-competence

Competence	Sample (n=413)
Oxygenation needs (mean, SD)	4.2±0.7
Fluid and electrolyte need (mean, SD)	3.8±0.7
Administering drugs safely and according to procedures (mean, SD)	4.1±0.6
Physical examination competence (mean, SD)	3.9±0.6
Blood and transfusion management competence (mean, SD)	4.1±0.6
Competence in carrying out emergency actions in all age groups (mean, SD)	3.8±0.6
Conducting nursing consultations and collaboration with other health teams (mean, SD)	4±0.6
Effective communication (mean, SD)	4.1±0.6
Nursing ethic principle (mean, SD)	4.1±0.6
Preventing nosocomial infections (mean, SD)	4.0±0.5
Conducting data analysis and data interpretation (mean, SD)	3.7±0.6
Competence in creating a safe and comfortable environment (mean, SD)	4.1±0.6
Injury prevention competence (mean, SD)	4.1±0.6

Table 2 describes the data on nurses' perceptions of self-competence, with the lowest mean of competence in performing emergency actions with a mean of 3.8 (SD: 0.6) competence in conducting data analysis and data interpretation with a mean of 3.7 (SD: 0.6).

Training model, learning media, implementation, and time of training

The expected form and model of training in this study are described based on the training model, the expected form of learning media, the expected training implementation, and the time of implementation.

Table 3
Training model, learning media, implementation, and time of training

Training	Sample (n=413)
Training model (n, %)	
Face-to-face model	140 (33.9%)
Online model	78 (18.9%)
Blended learning	195 (47.2%)
Learning media (n, %)	
Visual media	20 (4.8%)
Audio media	2 (0.5%)
Audio-Visual media	391 (94.7%)
Training conducted (n, %)	
Internal	393 (95.2%)
External	20 (4.8%)
Training time (n, %)	
On job	58 (14%)
Off job	74 (17.9%)
Flexible	281 (68%)

Table 3 shows the most desirable training model is mixed training (47.2%), audio-visual media is the most desirable form (94.7%), internal training implementation (95.2%), and flexible time training implementation (68%).

Table 4
Training that nurses want to attend

Training's name	Sample (n=413)
Emergency training	69 (16.7%)
Medical and surgery training	80 (19.4%)
Intensive care training	107 (25.9%)
Anesthesia and operating theatre training	24 (5.8%)
Dialysis training	23 (5.6%)
Oncology training	20 (4.8%)
Cardiology training	19 (4.6%)
Infection control training	12 (2.9%)
Covid-19 care training	8 (1.9%)
Leadership training	15 (3.6%)
Effective communication	9 (2.2%)
Ophthalmology training	14 (3.4%)
Mother and child nursing	6 (1.4%)
Not answer	7 (1.7%)

Table 4 shows the most desired intensive training (25.9%) and 1.7% did not answer.

Qualitative research results

The results of structured interviews with 8 participants (P) who are in charge of nursing services are explained in the form of the following themes.

1) Implementation of nursing TNA

Analysis of nursing training needs should be carried out by mapping the competencies that nurses must possess.

"The competencies of each care unit are different, so it is necessary to map the types of competencies that must be possessed. Analysis of training needs is adjusted to the competencies that must be possessed. For example, nurses in the emergency department must have basic life support emergency competence, BTCLS, and ALS. This will make it easier to plan training needs (P1, P2, P6, P7)".

"The form of training and media in nursing training must be able to meet the learning needs of nurses. It is necessary to provide learning media that are following the nurse's learning style (P1, P2, P3, P8)".

2) TNA Executor

The results of the interviews with TNA implementers were obtained as follows

"The TNA must be submitted by the nurse based on the nurse's own needs. There needs to be a media that makes it easier for nurses to submit training needs that are expected to be based online according to their work units. The nursing manager must facilitate the proposed training needs (P2, P4, P6, P8)".

3) TNA Implementation Time

The results of the interviews were obtained as follows.

"TNA is held at the end of the year so that training needs planning can be prepared for the following year. It also relates to the management of nursing personnel. Nurses who attend training must think about being free from service duties so they can focus on the learning process (P2, P3, P5, P8)".

4) Place of Training

Got findings from interviews

"The training location is held within to simplify time and accommodate hospital resources such as trainer resources, tools, and instructional materials. (P1, P2, P3, P4)".

3.2 Discussion

The results showed that the mean age of the respondents in this study was 38.2 years (SD: 8.6) in the range of 23-60 years. The most gender is female (75.1%). The average length of service is 14.8 years in the range of 1-35 years. The education status of most respondents was a nursing diploma 62.2%. Based on the installation, the highest number was obtained from inpatient installations, 34.6%. Different research results were found in the study (Jira et al., 2020) which involved 383 health workers where the male sex was 55.1% with an average age of 29 years in the 20-45 year range. The results based on the characteristics of the respondents were found to be consistent with the research by Yousif et al (2019), which included 29 respondents and found that there were 72.4 percent female gender, and a mean age of 34.8. However, the mean duration of work was 5 years in the range of 1-18 years. The research of Wang et al. (2020), also found different results involving 246 nurses with dementia patients, 83.7% more women were found with the highest age range being 40-50 years (27.2%). The characteristics of respondents in the study could be different because the number of samples and subjects involved in the study were different.

Nurses' perceptions of activities that support work

Because it maintains a competitive advantage in the market, fosters employee safety and health, creates possibilities for career development and personal improvement, is a key component in employee retention, and aids management in adhering to laws and regulations, training is highly important. and boost profitability and productivity (Uma, 2013). The education and training of the nursing profession have changed and have experienced rapid development due to shifts in nursing practice, and changes in policies and regulations. The increase in enrollment for undergraduate, master's, and doctoral nursing programs demonstrates a commitment to lifelong learning that has always been the cornerstone of the nursing profession (Department of Health and Human Services, 2020).

Training is an activity that is felt to support work (87.9%). This shows that nurses prefer to attend training than formal education. The findings of the study (Abuelela et al., 2019) showed that nurses who did not receive previous training the training program on nursing professional values and those who received the training program with the highest score among those who did not receive the training program. Mlambo et al. (2021), state that accesses to continuous professional development can be achievable, realistic, and relevant. The results of the interviews showed that competency mapping was adjusted to the unit of care. The implementation of training is adjusted to the competency needs that nurses must possess (Pedaste et al. 2015; Schnotz & Bannert, 2003). The person in charge of the unit conducts the nurse competency evaluation to ascertain the nurse's level of competency. This training program plays important role in improving nurses' capacity to work in public health environments and making them ready for difficult clinical scenarios (Kiik et al., 2022).

Nurse's perception of self-competence

The nurse's perception of self-competence obtained the lowest average in the competence of meeting fluid and electrolyte needs, physical examination competence, competence in carrying out emergency actions, and competence in conducting data analysis and data interpretation (Graneheim & Lundman, 2004; Cronenwett et al., 2007). To provide nurses with knowledge of the competencies required for the finest possible care, it is important to address key issues related to nurses' self-perceptions of their skill in evaluation and intervention during nursing education across the board, according to the study by (Figueiredo et al., 2021). The purpose of self-perception of competence is secondary to psychometrically evaluating and measuring the nurse's self-perceived competence (Sawatzky et al., 2021).

Ludwikowska (2019), studied how the stages of the training process' efficacy affect how productively employees work in social service situations. The study's findings show a relationship between training needs analysis, training transfer, and worker effectiveness that is favourable (Ludwikowska, 2019). According to the interview's findings, a TNA can be initiated by a nurse performing a self-evaluation before submitting their training requirements, which the nurse management then assisted in formulating. The trainee's capacity for learning has a significant impact on the effectiveness of the training (Pratiwi et al. 2022). Nursing students come to training with a variety of skills, viewpoints, life experiences, backgrounds, training tools, and variances in their emotional, social, psychological, mental, and physical capabilities (Ugoani, 2020).

Training model, learning media, implementation, and time of training

The results showed that the most widely expected training model was mixed training (47.2%). Online and in-person instruction are combined in a process known as mixed learning (Nasution et al., 2021). According to research by Dziuban et al. (2004), blended learning is superior to fully online learning in terms of learning outcomes and interest levels. Furthermore, it was discovered that blended learning is superior to face-to-face instruction (Dziuban et al., 2004). Organizational policies can improve training, assistance, and assessment provision that promotes the availability of environmental support, health care training, and technology and informational assistance (Sarre et al., 2018). The use of mixed learning can be applied following combinations 50/50 means 50% online and offline learning 50%, 75% online and offline learning 25%, 25 % online and offline learning 75% from the allocation of learning time (Abdullah, 2018). In online training, it is necessary to provide a conceptual understanding of distance learning as well as to practice the use of online learning instruments or applications such as zoom, youtube, Edmodo, and google Forms (Ariadhy et al., 2021). The mixed training model and online mentoring show an increase in knowledge after being given training and the quality of the preparation of lesson plans are of very good qualification (Sudarma & Prabawa, 2021).

The results of the study were based on the form of learning media it was found that the form of audio-visual media was the most helpful form of learning (94.7%). The expected training implementation is internal training (95.2%) and flexible time (68%). The results of this study are consistent with the research of Timmapur et al. (2020), who found audio-visual-based training to be effective in increasing the expertise, competence, self-assurance, and performance of nurses. Furthermore, in a qualitative study of qualitative data, Timmapur et al. (2020), found that there was an increase in skills and high confidence in carrying out procedures and emphasized the importance of training using audio-visual formats. Combining role-playing

methods with video training improves communication skills which have implications for the quality of nursing care (Tomová et al., 2020). Different results were found in the study of Neugebauer et al. (2022), who found the simulation strategy to be more effective than other methods such as frontal teaching, video demonstration, or simple demonstration.

Analysis of the available information about the impact that audiovisual media has on improving or teaching nursing found seven experimental and quasi-experimental studies showing that audiovisual aids help in improving declarative, contextual, attitude learning, and the use of audiovisual aids to develop empathy (Agama-sarabia et al., 2017). Audiovisual sources are mostly used as a reproduction of reality, especially to develop clinical skills, describe procedures, or bring situations to life (Junior & Tavares, 2019). Audiovisual media are more effective in increasing knowledge and attitudes (Siregar et al., 2019).

Nurses expect more flexible training time because nurses can learn independently and discover new knowledge related to their work. A flexible education system allows trainees to move in all aspects of education, training, and employment. Flexibility means that trainees can adjust their learning path over time, according to their interests and abilities (Cedefop, 2020). There is no evidence that flexible training regimens adversely affect patient care or training quality but instead improve patient care and training quality (Tomlinson, 2012). The results of the interview show that interval training is more effective and efficient in improving nursing competence.

The study of Nadinloyi et al. (2013), shows time management abilities can be learned. The utilization of training programs may increase academic performance because of the link between time management and learning outcomes. Time management skills are directly related to academic performance. Training is very important and useful at all levels of the employee hierarchy to improve their performance (Uma, 2013). The results of the interview indicate that the timing of the TNA implementation should be done before the end of the year so that planning for the following year can be carried out. The scheduling of the training is implemented by allowing nurses the freedom to study so that they can participate in training and acquire competencies relevant to their line of work. Flexibility can involve choices in training resources, types of learning activities, learning support media, and many other possibilities. The key idea is the choice of trainees in various aspects of the learning experience (Boer, 2021).

Type of training

Respondents' answers based on the type of training they wanted to take part in the most were intensive training which included basic intensive training, advanced intensive training, ICU, NICU, and intensive Covid-19 training (25.9%). An intensive care unit is a special area of a hospital where it receives medical care and specialized care for patients with illnesses or injuries. Intensive nurses have high knowledge and skills in working and collaborating with other teams in providing optimal patient care. Hospital administration should create training budgets and programs that: enable nurses to gain more knowledge and skills (Pande et al., 2013). In comparison to other treatment rooms, intensive care units do differ from other treatment rooms in terms of their technological structure, work environment, work dynamics, and the kind of education and training they receive. The evaluation and acceptance that intensive space can increase professionalism are tied to its allure (Macedo et al., 2019).

Continuous nursing education will raise the standard of care, guarantee patient security, and suit individual demands. To deliver safe, comprehensive, high-quality, and dignified care, it is vital to assess educational programs by identifying training areas (Singh, 2015). The research by Mohamadi et al. (2019), which included 314 nurses, concluded that hospital infection control training and personal protection (61.80 percent) were most in demand. This study's findings conflict with their findings. A crucial initial step in continuing education planning that can lead to the development of practical and efficient knowledge and skills in the assessment of learning needs (Mohamadi et al., 2019).

4 Conclusion

Training is a form of activity that can improve the competence of nurses. There is a need for a training needs assessment to meet the need to improve the competence of nurses. TNA is carried out thoroughly, including

the need for models and learning media. This study found that nurses preferred audio-visual media, mixed learning, and flexibility in the timing of training. We recommend the preparation of guidelines in analyzing the need for training, especially during the pandemic disease season so that the implementation of training activities can be carried out following the situation and conditions of the pandemic and following the needs of nurses. Increased management commitment to training and human resource development efforts, increasing appropriate training in the success of the hospital's vision and providing appropriate training with available resources.

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References

- Abdullah, W. (2018). Model blended learning dalam meningkatkan efektifitas pembelajaran. *Fikrotuna*, 7(1), 855-866.
- Abuelela, L., Ibrahim, A., Habiba, A., & Eldin, Y. K. Z. (2019). Impact of a training program on nurses' knowledge regarding professional values in Damanhour fever hospital Impact of a training program on nurses' knowledge regarding professional values in Damanhour fever hospital. *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, 8(1), 51-61.
- Agama-Sarabia, A., Trejo-Niño, G., De-la-Peña-León, B., Islas-Ortega, M., Crespo-Knopfler, S., Martínez-Felipe, L., & González-Velázquez, M. S. (2017). Audiovisual Aids in nursing education: literature review. *Enfermería Global*, 16(3), 526-538.
- Alnair, N. M. A., Malik, E. M., Ahmed, M. E., & Abu, I. I. M. (2019). Training Needs Assessment for Nurses in Sennar State, Sudan: Cross Sectional Study (1). *Science Journal of Public Health*, 7(4), 104-114.
- Ariadhy, S. Y., Nurohman, S., Arkum, D., Handini, W., & Ferdiana. (2021). Distance Learning Training in the COVID-19 Pandemic era. *Jurnal Pengabdian Masyarakat*, 1(3), 220-226.
- Barbazette, J. (2006). Training Needs Assessment Methods, Tools, and Techniques. Pfeiffer.
- Boer, W. De. (2021). Flexibility Beyond Time and Place : Stretching and Opening the Course. In Researchgate (Issue April).
- Candiasa, I. M. (2019). Analisis Data Dengan Statistik Multivariat. Undiksha Press.
- Casline, E., Tawfik, S. H., Brodar, K. E., Patel, Z. S., & Tarlow, N. (2021). Considerations for assessment training competencies in health service psychology programs in the age of COVID-19. *Training and Education in Professional Psychology*.
- Cedefop. (2020). Flexible education and training systems. <https://www.cedefop.europa.eu/en/tools/vet-toolkit-tackling-early-leaving/intervention-approaches/flexible-education-and-training-systems>
- Cronenwett, L., Sherwood, G., Barnsteiner, J., Disch, J., Johnson, J., Mitchell, P., ... & Warren, J. (2007). Quality and safety education for nurses. *Nursing outlook*, 55(3), 122-131. <https://doi.org/10.1016/j.outlook.2007.02.006>
- Dziuban, C. D., Hartman, J. L., & Moskal, P. D. (2004). Blended Learning. *Research Bulletin*, 2004(7), 1-12.
- Elhadi, M., Msherghi, A., Alkeelani, M., Zorgani, A., Zaid, A., Alsuyihili, A., Buzreg, A., Ahmed, H., Elhadi, A., Khaled, A., Boughididah, T., Khel, S., Abdelkabir, M., Gaffaz, R., Bahroun, S., Alhashimi, A., Biala, M., Abulmida, S., Elharb, A., ... Amshai, A. (2020). Assessment of healthcare workers' levels of preparedness and awareness regarding Covid-19 infection in low-resource settings. *American Journal of Tropical Medicine and Hygiene*, 103(2), 828-833.
- Febriani, & Yusuarsono. (2018). Training Need Analysis (TNA) Model for Family Planning Field Officers (PLKB) at BKKBN Bengkulu Province. *Seminar Nasional Ilmu Sosial Dan Teknologi*, 1, 61-66.
- Figueiredo, M. H., Ferreira, M. M., Silva, M. L. da, & Guedes, V. S. (2021). Self-perception of nurses' competence in family assessment and intervention. *Invest. Educ. Enferm.*, 39(3), 1-12.
- Goodwin, V. T., Meyer, D., Martin, E., Anne, B. S., & Pat, C. M. (2020). Recommendations for Improving National Nurse Preparedness for Pandemic Response : Early Lessons from COVID-19. In Center For Health Security John Hopkins. Jhon Hopkins University.
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse education today*, 24(2), 105-112. <https://doi.org/10.1016/j.nedt.2003.10.001>
- Haapio, A., & Viitaniemi, P. (2008). A critical review of building environmental assessment tools. *Environmental impact assessment review*, 28(7), 469-482. <https://doi.org/10.1016/j.eiar.2008.01.002>
- Jira, L., Weyessa, N., Mulatu, S., & Bogale, T. (2020). Training Need Assessment among Health Care Providers in Public Health Facilities of Benishangul Regional State, North. *Journal of Nursing and Health Science*, 9(3), 43-50.
- Junior, A. de A. P., & Tavares, C. M. de M. (2019). Literature review of audiovisual practices in Nursing education. *Rev Bras Enferm*, 72(1), 190-199.
- Kiik, S. M., Nuwa, M. S., Betan, Y., & Riti, I. F. (2022). Improving nursing student self-confidence and competence through integrated public health care training. *Kontak*, 24(1), 43-47.

- Ludwikowska, K. (2019). The effectiveness of training needs analysis and its relation to employee efficiency. Researchgate, December 2018, 179–193.
- Macedo, A. P. M. de C., Padilha, K. G., & Püschel, V. A. de A. (2019). Professional practices of education/training of nurses in an intensive care unit. *Rev Bras Enferm*, 72(2), 321–328.
- Mahmud, K. T., Saira Wahid, I., & Arif, I. (2019). Impact of training needs assessment on the performance of employees: Evidence from Bangladesh. *Cogent Social Sciences*, 5(1), 1705627.
- Mlambo, M., Silén, C., & McGrath, C. (2021). Lifelong learning and nurses' continuing professional development, a metasynthesis of the literature. *BMC nursing*, 20(1), 1-13.
- Mohamadi, S., Borhani, F., Nikravan-Mofrad, M., Abbaszadeh, A., Monajemi, F., & Moghaddam, H. R. (2019). Assessing of the learning needs of nurses in medical and surgical and emergency wards: nursing continuing education requirements. *EurAsian Journal of BioSciences*, 13(2).
- Mohamed Ali Alnair, N., Mohamed Malik, E., Elbashir Ahmed, M., & Ismail Mohamed Abu, I. (2019). Training Needs Assessment for Nurses in Sennar State, Sudan: Cross-Sectional Study (1). *Science Journal of Public Health*, 7(4), 104. <https://doi.org/10.11648/j.sjph.20190704.11>
- Mohanraj, D., & Nadu, T. (2017). Effect of Training and Development Programmes on Self-Efficacy of Banking Professionals in Chennai City. *International Journal of Management*, 8(5), 31–43.
- Nadinloyi, K. B., Hajloo, N., Garamaleki, N. S., & Sadeghi, H. (2013). The study efficacy of time management training on increase academic time management of students. *Procedia-Social and Behavioral Sciences*, 84, 134-138. <https://doi.org/10.1016/j.sbspro.2013.06.523>
- Nasution, A. K. P., Surbakti, A. H., Zakaria, R., Wahyuningsih, S. K., & Daulay, L. A. (2021). Face to face learning vs blended learning vs online learning (student perception of learning). In *Journal of Physics: Conference Series* (Vol. 1783, No. 1, p. 012112). IOP Publishing.
- Neugebauer, J., Doležalová, J., Dolák, F., & Hudáčková, A. (2022). Evaluation of the effectiveness of the simulation process for teaching nursing. *Kontakt Journal of Nursing and Social Sciences Related to Health and Illness*, 24, 1–7.
- Pande, S., Kolekar, B. D., & D.Y, V. P. (2013). Training Programs of Nurses Working in the intensive care unit. *International Journal of Advanced Research in Management and Social Sciences*, 2(6), 85–93. www.garph.co.uk
- Pedaste, M., Mäeots, M., Siiman, L. A., De Jong, T., Van Riesen, S. A., Kamp, E. T., ... & Tsourlidaki, E. (2015). Phases of inquiry-based learning: Definitions and the inquiry cycle. *Educational research review*, 14, 47-61. <https://doi.org/10.1016/j.edurev.2015.02.003>
- Pereira, M. R. (2020). Nursing care, relevance in the context of the COVID-19 pandemic. *Enfermería (Montevideo)*, 9(1), 5–6.
- Pilcher, J. (2016). Learning Needs Assessment. *Journal for Nurses in Professional Development*, 32(4), 185–191.
- Pope, J., Annandale, D., & Morrison-Saunders, A. (2004). Conceptualising sustainability assessment. *Environmental impact assessment review*, 24(6), 595-616. <https://doi.org/10.1016/j.eiar.2004.03.001>
- Pratiwi, A., Sukardi, S., Setiyadi, N. A., & Muhlisin, A. (2022). Improvement of nurses' knowledge of primary nursing role in professional service using simulation method. *International Journal of Health Sciences*, 6(3), 1375–1382. <https://doi.org/10.53730/ijhs.v6n3.12442>
- Purnell, M. (2020). Findings from a training need analysis survey to support health professionals across the research lifecycle. *Health Information and Libraries Journal*, 37(2), 118–127.
- Sarre, S., Maben, J., Aldus, C., Schneider, J., Wharrad, H., Nicholson, C., & Arthur, A. (2018). The challenges of training, support and assessment of healthcare support workers: A qualitative study of experiences in three English acute hospitals. *International journal of nursing studies*, 79, 145-153. <https://doi.org/10.1016/j.ijnurstu.2017.11.010>
- Sawatzky, R., Roberts, D., Russell, L., Bitschy, A., Ho, S., Desbiens, J. F., ... & Stajduhar, K. (2021). Self-perceived competence of nurses and care aides providing a palliative approach in home, hospital, and residential care settings: a cross-sectional survey. *Canadian Journal of Nursing Research*, 53(1), 64-77.
- Schnotz, W., & Bannert, M. (2003). Construction and interference in learning from multiple representation. *Learning and instruction*, 13(2), 141-156. [https://doi.org/10.1016/S0959-4752\(02\)00017-8](https://doi.org/10.1016/S0959-4752(02)00017-8)

- Singh, I. (2015). Nursing and Health Care Training and Professional Development for Nurses and Healthcare Support Workers : Supporting Foundation for Quality and Good Practice for Care of the Acutely Ill Older Person ClinMed. *International Archives of Nursing and Health Care*, 1(007), 1–6.
- Siregar, S., Rochadi, K., & Maas, L. T. (2019). The Effect Of Audio-Visual Media On Adolescents'knowledge And Attitude Toward Smoking Dangerous At Secondary High School 2 Halongonan Subdistrict, Indonesia. *International Journal of Nursing and Health Services (IJNHS)*, 2(3), 164-171.
- Sudarma, I. K., & Prabawa, D. G. P. (2021). Training and Assistance on Online Learning Strategies for Elementary School Teachers in Cluster 3, Buleleng District. *Proceeding Senadimas Undiksha 2021*, 1561–1567.
- Sugiyono. (2018). Methodology Educational research with quantitative, qualitative and R&D approaches. Universitas Pendidikan Indonesia, 1(Metodologi Penelitian), 1–58.
- Timmapur, S. M., Sahu, B., Sathyanarayana, T. N., & Pai, A. G. (2020). Audio-visual training intervention improves the knowledge, skill, confidence, and performance of barefoot nurses for screening noncommunicable diseases. *Indian Journal of Health Sciences and Biomedical Research KLEU*, 13, 98–104.
- Tomlinson, J. (2012). Flexible surgical training in Australia: It's time for Change.
- Tomova, L., Saxe, R., Klöbl, M., Lanzenberger, R., & Lamm, C. (2020). Acute stress alters neural patterns of value representation for others. *Neuroimage*, 209, 116497. <https://doi.org/10.1016/j.neuroimage.2019.116497>
- Ugoani, J. N. N. (2020). Emotional Intelligence Perspectives on Employees ' Training Needs Assessment and Task Performance. *Journal of Social Sciences and Humanities*, 6(4), 331–339.
- Uma, S. N. (2013). A Study on Training Importance for Employees of their Successful Performance in the Organization. *International Journal of Science and Research*, 2(11), 137–140.
- Wang, Y., Liu, Y., Tian, J., Jing, M., & Zhang, K. (2020). Analysis on nursing competence and training needs of dementia caregivers in long-term care institutions. *International journal of nursing sciences*, 7(2), 198-205. <https://doi.org/10.1016/j.ijnss.2020.03.003>
- Yousif, A. K., Ahmed, O. Y., & Osman, W. N. (2019). Training Needs Assessment of Academic Teaching Staff in Faculty of Dentistry, University of Gezira, Sudan 2018. *Education in Medicine Journal*, 11(1), 31–41.

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