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Systematic Review

EDUCATION FOR NURSES WORKING IN PRE-HOSPITAL EMERGENCY CARE

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ABSTRACT

Background. Pre-hospital emergency care is the most important part of ambulance services that provide emergency health services in providing an assessment of the patient's condition and providing intervention measures quickly and appropriately to prevent delays in handling patients before arriving at the hospital. A systematic review aims to find out the education for nurses working in ambulances (pre-hospital).
Research Method. Systematic review goes through several stages, namely making questions, identification, eligibility, selection of article inclusion, screening, and assessment/appraisal. The Selection Process is listed in the thematic review framework and the results of 9 articles are obtained. Articles are then summarized and assessed JBI on each of the articles
Findings. The data showed varying results adapted to the system and the conditions from which the study was conducted. To improve the knowledge, skills, and experience of nurses, nurses who work in ambulances (pre-hospital), are carried out to provide education with 3 methods, such as providing questionnaires, simulations and relationships between nurses and patients through 4-phase identification.
Conclusion. An effort to improve the knowledge, skills, and experience of nurses working in the ministry is to apply several special education and training methods for ambulance nurses such as providing questionnaires, simulations and and relationships between nurses and patients through four phases, namely orientation, identification, exploitation and resolution.

Keywords: Education, Nurses, Ambulance, Pre-hospital.

BACKGROUND

Emergency services are an effort to save health in providing assistance to patients or emergency victims quickly and precisely so that the lives of victims or patients can be saved and avoid disability. Pre-hospital emergency care is the most important part of providing emergency health services in providing first aid measures quickly and appropriately in preventing delays in handling patients before arriving at the hospital. The ambulance service is expected to provide support to the pre-hospital service system by providing the best service in providing assistance to pre-hospital emergency patients.[1]

A form of victim service or pre-hospital emergency patients in Indonesia is to establish an Integrated Emergency Management System (hereinafter abbreviated as SPGDT) which functions to improve the quality of pre-hospital emergency services. SPGDT is expected to

improve access and quality of emergency services and provide response time for pre-hospital emergency victims in reducing mortality and disability rates. SPGDT is also expected to be able to connect with the community in providing pre-hospital emergency care services using a call center or telecommunications access code 119 which is a call center system design and technology connected to telecommunications network-based services specifically in the field of health or pre-hospital emergency services in Indonesia.[1]

Some countries still have paramedic education and training still not implemented, and Indonesia is one of the countries where special education and training for ambulance health workers is not yet available. Nurses are health workers who are in charge of ambulance services, so nurses on duty in ambulance services must have knowledge, experience and skills that are competent in meeting the needs of patients while in pre-hospital. Ambulance nurses must have extensive basic knowledge and competent skills to be able to apply and be able to adapt to various types of health problem events in patients while in pre-hospital. When ambulance nurses are facing patients at home or in situations of pre-hospital emergency events, such as traffic accidents, fall victims, disaster victims or mass victims, victims with heart attacks, and various other emergency victim problems, then the actions of nurses who are incorporated and serve as ambulance teams must be able to collect information about patients, and data about patients that lead to the determination of the assessment system and decisions about actions which must be done immediately and precisely, aiming to provide safety to patients so that disability and death do not occur.[2]

In an effort to improve the quality of ambulance services, ambulance nurses are needed who have knowledge, experience, and skills that are competent in the field of pre-hospital emergencies in providing emergency care to patients while in pre-hospital.Does this systematic review aims to find out "what is education for nurses working in ambulances (Pre-hospital)"?

RESEARCH METHOD

The preparation of this review goes through several stages, namely making a research question in accordance with the PICOS method, and then conducting a literature review using a diagram, which consists of identification, eligibility, screening, feasibility selection and determining articles that meet the inclusion criteria. At the last stage, the review is carried out systematically using tables and taking into account the JBI value in each article.

1. **Research Questions**

The research question on this review system is "Is education for nurses working in ambulances (Pre-hospital)"?

2. **Identify Relevant Journal Articles From Titles And Abstracts**

Journal identification is done by searching journal articles in three databases. The databases used by the authors are ProQuest, PubMed and ScienceDirect. Furthermore, before searching, the author selects the settings on each database search page, namely: articles published between 2013-2018, the type of reference is article, the language used is English. After finishing doing the search settings then search for articles using keywords. The keywords used by the author in this systematic review there are 10 keywords in each database, namely Nurses, Nursing, Nurse, Education, Learning, Training, Prehospital, Ambulance Services, Emergency Medical Services, Prehospital Human Resources. From these keywords, it is hoped that a systematic review will be carried out to answer the researcher's questions. Then after searching for each keyword, the author combines / combines the keyword with the hyphen and (And). At the Identification stage, the number of articles obtained in the ProQuest database is 191 articles, in the PubMed database is 214 articles and in the ScienceDirect 18 articles.

3. **Eligibility**

Eligibility is a qualified article. At this stage the qualified article is an adjustment based on the suitability of the title and abstract of the article, At the Eligibility stage the remaining articles on the ProQuest database are 3 articles, the PubMed data base is 4 articles, and the ScienceDirect 11 articles.

4. **Selection of Articles That Meet the Inclusion Criteria**

The selection of articles that are in accordance with the inclusion criteria must be carried out a selection process based on the existing inclusion and exclusion criteria. The criteria for inclusion and exclusion are already determined by the author. The inclusion criteria include: there is an explanation of education, training and improving the quality of ambulance nurses (prehospital) and articles using only English. On the exclusion criteria, namely the focus of the article on disaster / disaster, the article method is systematic review and related to the article, unreadable and uneditable. At this stage, the article needs to be read in its entirety or full text. The results at the adjustment stage based on inclusion and exclusion criteria are 2 articles on the ProQuest database, 3 articles on the PubMed database and 4 articles on the ScienceDirect database.

5. Screening and Appraisal

Screening is a stage to see if there are any similar articles between the two existing databases. Of the total number of articles that have been selected through the previous stage, namely 11 articles, and there are no similar articles (no duplicates), so that at the screening stage the number of articles left is 11 articles.

The Appraisal Stage is an assessment of 11 existing articles. At this stage the author summarizes the article and conducts a JBI (Joanna Brigg Institution check list) assessment on each article that matches the method that the article has. At this stage, adjustments are made based on inclusion and exclusion restrictions.[3] Read the full text and understand and review the duplication of articles or the same article, so that the remaining 9 articles are obtained for further discussion. The results of the assessment are attached in table 1.

FINDINGS

The results of the article review results Brigg Institution checklist assessment obtained 9 articles. Articles that have been obtained from the JBI (Joanna Brigg Institution checklist) assessment will be displayed in the table 2.

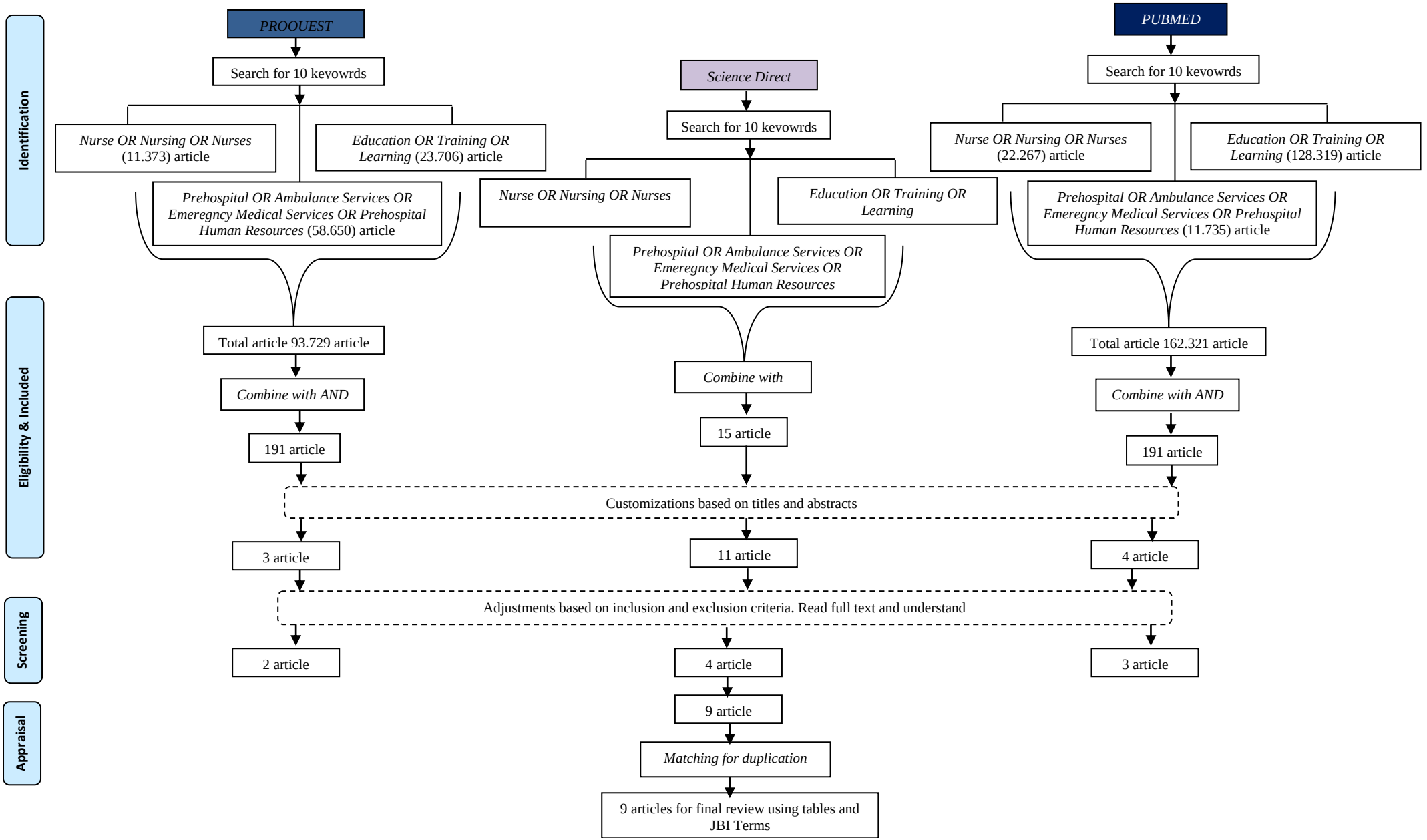

Figure 1. Systematic Search Framework Review

The Systematic Search Framework Review (Figure 1) is an adaptation of the Prisma 2009 framework and the Systematic Framework review courtesy of Suryanto.

DISCUSSIONS

Nurses working in ambulance services in providing pre-hospital emergency care should have a great responsibility as health professionals who have the attitude, skills, and basic knowledge to provide care thoroughly or holistically.

1. The Public's Perception Of Prehospital Emergency Care In The County Of Skane, Southern Sweden

Based on the results of research conducted by Blomstedt, Nilsson, & Johansson (2013), titled The public's perception of prehospital emergency care in the County of Skane, southern Sweden, identifies the knowledge and expectations of pre-hospital emergency care in Skåne, Sweden.[4] This study was conducted using a descriptive cross-sectional survey, by providing questionnaires to respondents to find out differences in public perception of pre-hospital services. The results of the study of 735 people who were asked were 54.4% (n=400) chose to participate, 44% of respondents had been taken by ambulance, and 34.5% of respondents believed in paramedics who were health workers who provided ambulance services who had knowledge, skills and were responsible in providing services to patients.

2. The Nurse Patient Relationship In Pre-Hospital Emergency Care - From The Perspective Of Swedish Specialist Ambulance Nursing Students

The research title The nurse-patient relationship in pre-hospital emergency care - From the perspective of Swedish specialist ambulance nursing students, aims to find out and analyze firsthand, the phase of the relationship between nurses and patients while in pre-hospital.[5] This study used a descriptive design using qualitative research methods, using 17 reports written by ambulance specialist nurses during 2007 to 2008, by identifying the 4 phases of the pre-hospital nurse-patient relationship and determining operational definitions. The results showed that ambulance specialist nurses in each phase of the nurse's relationship with pre-hospital patients showed a dynamic process and not as something fixed and limited, and the relationship between nurse and patient in fact had a high dependence.

3. The Value Of The Pre-Hospital Learning Environment As Part Of The Emergency Nursing Programme

Subsequent research conducted with the research title The value of the pre-hospital learning environment as part of the emergency nursing programme, the purpose of the study is to assess the exploration of pre-hospital environmental exposure added to the personal development and professionalism of emergency nursing students, and add the learning experience of emergency nursing students clinics in the pre-hospital learning environment.[6] This study used qualitative, exploratory, descriptive, and contextual design

Table 1. Systematic Review Article Review Article Combination Results Based on JBI Assessment (Joanna Brigg Institution checklist)

No	Author (year)	Heading	Level (JBI)	Method	Results/ Critical Appraisal
1.	Blomstedt, Kristina Nilsson, Helena Johansson,Anders (2013)	The public's perception of prehospital emergency care in the County of Skane, southern Sweden	Level 4.b: Cross-sectional study Related inclusion criteria systematic review of admission	Design: Cross sectional study Purpose: Knowing the knowledge and expectations of prehospital emergency care in Skåne, Sweden. Sample: In total, 735 people were asked to participate in the study and 271 people did not want to participate in the study, and as many as 64 people were expelled due to language barriers. Data analysis: SPSS version 18.0 later used the Mann-Whitney U test to determine the comparison of the value of younger informants with older ones Intervention: Provide questionnaires to respondents who have participated in the study. Questionnaire to determine respondents' differences in public perception of pre-hospital services.	Results: There were significant differences in prehospital emergency care during last decade. Ambulance personnel have higher education in many areas treatment and care have become more efficient. Treatment and diagnosis has been determined in the prehospital and patient-direct settings prioritized more specifically in carrying out inspection or treatment Deficiency: In the results of the study, there were no significant differences between the 2 existing intervention methods Excess: This research is very interesting and complete, the presentation of language is easy to understand, the arrangement in the research is very good in explaining the method and the number of samples used is quite large and the results delivered are quite understandable
2.	Abelsson, Anna Rystedt, Ingrid Suserud, Björn Ove	Learning High-Energy Trauma Care Through Simulation	D Level 4.a: Systematic review of descriptive studies	Design: Qualitative study with phenomenographic method	Results: This study demonstrated statistically significant differences in ratings between groups, and the results suggest that repeated simulations can establish, refine, and confirm knowledge and

	Lindwall, Lillemor (2018)		Related inclusion criteria systematic review of admission	Purpose: Knowing nurses' perceptions of trauma care after being exposed to high power through simulations in pre-hospital emergency care Sample: 20 nurses in pre-hospital emergency care in two counties of central Sweden Data analysis: SPSS v 24.0 (IBM Corporation, Armonk, New York) descriptive analyzes (central tendency and distribution) were used to describe the data, while inferential statistics (z test, t test, and Mc. Namara) to determine the potential difference between the before and after intervention and between groups. Intervention: Simulated affected patient high energy trauma was performed in two separate groups. Group A complete four simulation scenarios with one simulation occurring every eight weeks. Group B only completed the first and last simulations with scenarios 1 and 4 in a time interval of 6 months	skills regarding trauma care in prehospital emergency department patients. Trauma knowledge is understood and can be used quickly in assessing and making decisions in trauma cases. Deficiency: The sample used is still too small to find a difference Excess: The language used is understandable, and the role of primary and secondary nurses in prehospital emergency services in providing care for trauma after exposure to high energy
3.	Abelsson, Anna Rystedt, Ingrid Suserud, Björn Ove Lindwall, Lillemor (2018)	Ambulance Nurses' Competence and Perception of Competence in Prehospital Trauma Care	Level 4.b: Cross-sectional study Related inclusion criteria systematic review of admission	Design: This study has a quantitative design with a cross-sectional descriptive design Purpose: Knowing the knowledge and skills and competencies of nurses in providing pre-hospital emergency trauma care. Sample: Simulated trauma care competencies of 63 ambulance nurses in pre-hospital emergency care	Results: The results in the study indicated that ambulance nurses felt they did not have sufficient training (theoretical 45%, practical 50%) or experience (theoretical 63%, practical 65%) regarding trauma care. During the simulation, the ambulance nurse did not perform the critical assessments or critical nursing actions needed to save the patient's life at the scene of the accident

				Data analysis: Descriptive statistics using IBM Statistics Package for Social Sciences (SPSS) 24.0 and Linkert scale Intervention: Simulating ambulance nurses using a questionnaire to determine knowledge and skills in pre-hospital trauma care as well as experience and training in ambulance services	Deficiency: The sample used was still small and the study only used a questionnaire, not directly observing the actions taken by ambulance nurses Excess: This research has an interesting discussion and the completeness of the data presented can be understood.
4.	Suryanto Plummer, Virginia Boyle, Malcolm (2018)	Knowledge, attitude and practice of ambulance nurses in prehospital care in Malang, Indonesia	Level 4.b: Cross-sectional study Related inclusion criteria systematic review of admission	Design: Cross-sectional study. By using the questionnaire to find out the knowledge, attitudes, and practices of ambulance nurses the questionnaire has been based on previous research that has been adapted by Kumar et al. Purpose: Identifying the knowledge, attitudes, and practices of ambulance nurses in pre-hospital care in Malang, Indonesia. Sample: 465 participants from 45 health services in Malang who participated Data analysis: SPSS (Statistical Package for the Social Sciences Version 22, IBM Corporation, Armonk, New York, USA). The Likert scale is used to calculate variables by changing the variable categories to numbers, "1-4" for the "very bad to very good" category and for "strongly disagree strongly agree". The scores are then summed to produce a range of 13-52 for knowledge, 20-80 for attitudes, and 8 to 32 for practice. Minimum scores, maximum scores, and	Results: The results of the study found that attitudes had the highest value (67.6 / 80 = 84.5%) and knowledge values had the lowest value (36.5 / 52 = 70.1%) compared to the other two values. While knowledge scores (p = 0.022), attitude (p = 0.012), and practice scores (p = 0.026) differ significantly based on experience and training. Deficiency: Of the 482 questionnaires returned, 17 were issued because the questionnaires were incomplete Excess: The discussion of the study of the variables of attitude knowledge, and the practice of ambulance nurses in pre-hospital care in Malang is an appropriate approach to the role in improving ambulance nurse education in Indonesia.

				average scores for each measured questionnaire element. Intervention: All ambulance nurses in 45 health care services, 22 hospitals and 34 health centers, were invited to participate in the study. 185 questionnaires were distributed to hospital-based ambulance nurses and 372 questionnaires to health center ambulance nurses.	
5.	Nilsson, Tomas Lindström, Veronica (2016)	Clinical decision-making described by Swedish prehospital emergency care nurse students – An exploratory study	D Level 4.a: Systematic review of descriptive studies	Design: A descriptive and qualitative design Purpose: Knowing pre-hospital emergency nurse students in making clinical decisions during a seven-week clinical rotation in the ambulance service. Sample: 12 notebooks written by pre-hospital emergency nurse students in Sweden Analysis data: Observed and assessed 12 notebooks written by pre-hospital emergency nurse students in Sweden Intervention: Using content analysis to determine students' clinical decision-making in ambulances	Results: Four main themes are identified in decision-making, namely knowing patients, awareness of situations in ambulance services, collaboration, and evaluation. Deficiency: The samples in the study were too few and were not equipped with tables in the explanation of the methods and results presented Excess: The explanation of the article can be understood in a good way
6.	Nilsson, Tomas Lindström, Veronica (2017)	Nursing students' perceptions of learning nursing skills in the ambulance service	Level 3.c: Cohort study with control group	Design: Qualitative study with the attached ethical due diligence from the International Council of Nurses	Results: The ambulance service provides an educational environment related to providing nursing care in the healthy and sick ranges. The ambulance environment helps students to develop nurse skills

				Purpose: Knowing the perception of nursing students towards education and skills in pre-hospital or ambulance emergency health services Sample: There were 2 groups of participants, namely 5th semester undergraduate nursing students. And 48 out of a total of 240 nursing students were selected based on the rotation of the ambulance service clinic. Then 20 were selected based on filling in the application sheet. 19 were selected based on inclusion criteria Analysis data: Using content analysis to assess student nursing perceptions. Lindseth and norbeghh's approach is a comprehensive review Intervention: 2 groups were interviewed and analysed. By taking a professional skills approach and a holistic approach (overall)	and a holistic approach (decision making, social and cultural) Deficiency: Not equipped with a table to describe the methods and results conveyed Excess: The explanation of the article is well understood
7.	Langdalen, Henrik Abrahamsen, Eirik B. Sollid, Stephen J.M. Sørskår, Leif Inge K. Abrahamsen, Håkon B. (2018)	A comparative study on the frequency of simulation-based training and assessment of non-technical skills in the Norwegian ground ambulance services and helicopter emergency medical services	Level 4.b: Cross-sectional study Related inclusion criteria systematic review of admission	Design: Cross-sectional study. Using a questionnaire to determine training frequency and assess inadequate non-technical skills (NTSs) among employees in the Norwegian pre-hospital emergency medical service Purpose: Knowing how to compare and document the frequency of simulation-based training and assessment of the seven non-technical skills is not sufficient Between the Norwegian helicopter	Results: There is a significant relationship The assumption that training and assessment improves NTSs is reasonable based on experience and there is a significant relationship statistics between total training and assessment and the two EMSS. kindly In general, teamwork and overcoming fatigue have a frequency the highest and lowest training and ratings respectively.

				emergency service and the ground emergency service. Sample: Employees working in the Norwegian pre-hospital emergency medical service Analysis data: Fisher's test, with results presented as numbers (ratios) and p less than 0.05 was considered as statistically significant Intervention: Provide a questionnaire in the form of questions about the frequency of reporting on inadequate non-technical skills training and assessment in pre-hospital	Deficiency: This study has not assessed the level of knowledge after attending the training. Excess: Able to carry out assessments on all EMS staff including nurses, paramedics and doctors.
8.	Berntsson, Tommy Hildingh, Cathrine (2013)	The nurse patient relationship in pre-hospital emergency care - From the perspective of Swedish specialist ambulance nursing students	D Level 4.a: Systematic review of descriptive studies Related inclusion criteria systematic review of admission	Design: A descriptive and qualitative design Purpose: Know and analyze directly, pre-hospital nurse-patient relationship phases described by 17 specialist ambulance nurse specialist descriptions by surrel Sample: The sample consisted of 17 reports written by specialist ambulance nurses during 2007 and 2008, at a university in southern Sweden. Analysis data: Not using SPSS analysis. Assessment is subjective and descriptive	Results: Phases of the nurse-patient relationship, in the description of the ambulance specialist nurse reveals that each phase of the pre-home nurse-patient relationship Pain must be understood as a dynamic process and not as something fixed and limited, the nurse-patient relationship, on in fact, overlap Deficiency: The number of samples is small and only at one university in southern Sweden Excess: Great discussion for knowing and assessing the prehospital nurse-patient relationship

				Intervention: Identify the 4 phase categories of the prehospital nurse-patient relationship and define operational definitions. The 4 categories of phases are orientation phase, identification phase, exploitation phase and resolution phase	
9.	van Wyk, Sonett Heyns, Tanya Coetzee, Isabel (2015)	The value of the pre-hospital learning environment as part of the emergency nursing programme	D Level 4.a: Systematic review of descriptive studies Related inclusion criteria systematic review of admission	Design: A qualitative, explorative, descriptive and contextual research design was employed Purpose: Assess exploration of exposure to the prehospital environment added to the personal and professional development of emergency nursing students. To add to the clinical learning experience of emergency nursing students, researchers believe there is a need to evaluate the experiences of emergency nursing students enrolled in an emergency nursing program in a prehospital learning environment. Sample: The population in this study were emergency nurses and registered emergency nursing students. The number of samples was 45 participants who participated Analysis data: Not using SPSS analysis. Assessment is subjective Intervention: Giving questionnaires and conducting interviews with respondents who have participated in the study.	Results: Unpredictable environment, role players in emergency medical services, teamwork and competence Deficiency : Cannot compare the results There is no numerical analysis. Excess : The presentation and language used in this study were quite good and explained the role of emergency nurses working

with an Appreciative Inquiry approach used to collect data, and data collection using Purposive sampling, with a total sampling of 45 respondents and data analyzed using content analysis and the research was conducted by providing questionnaires and conducting interviews with respondents. The results of this study show that four main themes were identified, namely the unpredictable environment, role players in emergency medical services, teamwork, and competence. The results of this study support the value and continuation of the utilization of pre-hospital clinical learning environments to place pre-hospital emergency nursing students when enrolled in an emergency nursing program.

4. Clinical Decision-Making Described By Swedish Prehospital Emergency Care Nurse Students – An Exploratory Study

Conducted research on Clinical decision making described by Swedish prehospital emergency care nurse students – An exploratory study, aimed at finding out pre-hospital emergency nurse students in making clinical decisions during a seven-week clinical rotation in the ambulance service.[7] This study used a descriptive design using qualitative research methods, and analyzed 12 notebooks of pre-hospital emergency nurse students in Sweden. The results of this study show that four main themes are identified in decision making, namely knowing patients, awareness of the situation in ambulance services, collaboration, and evaluation. Based on the theme, students make decisions about how to respond to the patient's illness.

5. Nursing Students' Perceptions of Learning Nursing Skills in The Ambulance Service

Another study entitled Nursing students' perceptions of learning nursing skills in the ambulance service, which aims to determine the perceptions of nursing students towards education and skills in pre-hospital or ambulance emergency health services.[8] This study used a qualitative design, by conducting interviews of 2 groups and content analysis. The results of this study show that ambulance services provide an educational environment related to providing nursing care in the range of healthy and sick. The ambulance environment helps students to develop nurse skills and approach holistically (decision-making, social and cultural).

6. Learning High-Energy Trauma Care Through Simulation

Research entitled Learning High-Energy Trauma Care Through Simulation, which aims to determine nurses' perceptions of trauma care after being exposed to high power through simulations in pre-hospital emergency care.[9] This study used a qualitative design with phenomenographic methods, by conducting interviews with 20 nurses. The results of

this study showed significant statistical differences in assessment between groups, and the results showed that repeated simulations could establish, refine, and affirm knowledge and skills about trauma care in pre-hospital emergency patients. Trauma knowledge is already understood and can be done quickly in assessing and making decisions in trauma cases.

7. Ambulance Nurses' Competence and Perception of Competence in Prehospital Trauma Care

The research entitled Ambulance Nurses' Competence and Perception of Competence in Prehospital Trauma Care, which aims to find out the knowledge and skills and competencies of nurses in providing pre-hospital emergency trauma care.[10] This study used a cross-sectional descriptive design, by giving questionnaires to 63 ambulance nurses. The results of this study showed that during the simulation, ambulance nurses did not perform the essential assessments or essential care measures necessary to save the patient's life at the scene of the accident. Lifesaving interventions are not conducted consistently. The time to intervene can be considered long due to life-threatening situations. In comparison, ambulance nurses' perceptions of the adequacy of their theoretical and practical knowledge and skills for trauma care are highly rated. In contrast, the perception of having sufficient ethical training for trauma care is undervalued.

8. A Comparative Study On The Frequency Of Simulation-Based Training And Assessment Of Non-Technical Skills In The Norwegian Ground Ambulance Services And Helicopter Emergency Medical Services

Other research with the title A comparative study on the frequency of simulation-based training and assessment of non-technical skills in the Norwegian ground ambulance services and helicopter emergency medical services, which aims to find out the comparison and document the frequency of simulation-based training and assessment of 7 non-technical skills between helicopter emergency services and emergency services on the ground.[11] This study used a cross-sectional design by providing questionnaires to employees working in pre-hospital emergency health services in Norway, to determine the comparison of training frequencies and assess inadequate non-technical skills. The results of this study show that there is a significant relationship assuming that training and assessment improve the training of nurses well, based on experience there is a statistically significant relationship between the amount of training and assessment.

9. Knowledge, Attitude And Practice Of Ambulance Nurses In Prehospital Care In Malang, Indonesia

Based on the research title Knowledge, attitude, and practice of ambulance nurses in prehospital care in Malang, Indonesia, which aims to identify the knowledge, attitudes, and practices of ambulance nurses in pre-hospital care in Malang, Indonesia.[12] This study used a cross-sectional design, using a questionnaire to find out the knowledge, attitudes and practices of ambulns nurses and the questionnaire has been based on previous research that has been adapted by Kumar et al. The number of respondents in this study was 465 participants from 45 health services in Malang who participated. The results of this study showed that attitudes had the highest value (67.6 / 80 = 84.5%) and knowledge value had the lowest value (36.5 / 52 = 70.1%) compared to the other two values. While knowledge scores ($p = 0.022$), attitude ($p = 0.012$), and practice scores ($p = 0.026$) differ significantly based on experience and training.

CONCLUSION

Based on the 9 research articles conducted by the review, it can be concluded, that in improving the knowledge, skills and experience of nurses working in the service is to apply several special education and training methods for ambulance nurses, such as providing questionnaires to nurses to find out the level of knowledge and skills of nurses in providing ambulance services, simulation methods are an educational effort that can be used to improve the knowledge, skills and experience of nurses working in ambulance services and establish interpersonal relationships by identifying patients through four phases during ambulance service.

REFERENCES

[1] Kemenkes RI. Sistem Penanggulangan Gawat Darurat Terpadu. *Peratur MENTERI Kesehat REPUBLIK Indones NOMOR 19 TAHUN 2016 TENTANG Sist PENANGGULANGAN GAWAT DARURAT TERPADU* 2016; 1–18.

[2] Suryanto, M. B. The pre-hospital and healthcare system in Malang, Indonesia. *Australas J Paramed* 2017; 14: no pagination.

[3] Joanna Briggs Institute (JBI). CRITICAL APPRAISAL TOOLS. *Faculty of Health and Medical Sciences The University of Adelaide*.

[4] Blomstedt K, Nilsson H, Johansson A. The public's perception of prehospital emergency care in the County of Skane, southern Sweden. *Int Emerg Nurs* 2013; 21: 136–142.

[5] Berntsson T, Hildingh C. The nurse-patient relationship in pre-hospital emergency

care - From the perspective of Swedish specialist ambulance nursing students. *Int Emerg Nurs* 2013; 21: 257–263.

[6] van Wyk S, Heyns T, Coetzee I. The value of the pre-hospital learning environment as part of the emergency nursing programme. *Heal SA Gesondheid* 2015; 20: 91–99.

[7] Nilsson T, Lindström V. Clinical decision-making described by Swedish prehospital emergency care nurse students – An exploratory study. *Int Emerg Nurs* 2016; 27: 46–50.

[8] Nilsson T, Lindström V. Nursing students' perceptions of learning nursing skills in the ambulance service. *Nurse Educ Pract* 2017; 24: 1–5.

[9] Abelsson A, Rystedt I, Suserud BO, et al. Learning High-Energy Trauma Care Through Simulation. *Clin Simul Nurs* 2018; 17: 1–6.

[10] Abelsson A, Lindwall L, Suserud B-O, et al. Ambulance Nurses' Competence and Perception of Competence in Prehospital Trauma Care. *Emerg Med Int* 2018; 2018: 1–6.

[11] Langdalen H, Abrahamsen EB, Sollid SJM, et al. A comparative study on the frequency of simulation-based training and assessment of non-technical skills in the Norwegian ground ambulance services and helicopter emergency medical services. *BMC Health Serv Res* 2018; 18: 1–11.

[12] Suryanto, Plummer V, Boyle M. Knowledge, attitude, and practice of ambulance nurses in prehospital care in Malang, Indonesia. *Australas Emerg Care* 2018; 21: 8–12.