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Education and Training Program on Disaster Triage for Nurses and Nursing Students: Literature Review

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Abstract**:** *Natural disasters continue to increase globally yearly. Over 1.6 billion people live in disaster-prone areas, conflict zones, and displacement areas. The impacts of disasters highlight the importance of disaster preparedness to minimize errors in disaster triage management. However, nurses' knowledge and skills in implementing initial triage procedures are still adequate. This scooping review aims to find an overview of implementing disaster triage education and training programs. This research is a scooping review using the Prisma flow chart in its implementation. This study showed significant results in all articles (n = 14) in increasing knowledge, attitudes, skills, awareness, preparedness, accuracy, and learning motivation in conducting disaster triage. The methods used are simulation methods (live, virtual reality, and screen-based) and training and education methods (lectures, discussions, videos, roleplay, and games) with material on disaster triage, START triage, and SALT triage concepts. This study concluded that disaster triage education for nurses and nursing students is very important to be provided by carrying out the latest methods so that the results are more effective..*

Keywords Training, education, disaster triage, nurse

INTRODUCTION

The occurrence of natural disasters continues to increase globally each year. In 2021, there was a 13% increase in the frequency of disaster events, affecting 48% of the population and resulting in an 82% increase in economic losses (OHCA, 2022). According to the World Health Organization, over 1.6 billion people live in disaster-prone areas, conflict zones, and displacement areas. Approximately 190 million people are affected annually by natural or technological disasters such as hurricanes, tsunamis, volcanic eruptions, earthquakes, disease outbreaks, and accidents (WHO, 2019).

The impacts of disasters highlight the importance of disaster preparedness to reduce errors in disaster triage management (Saragih, 2019). Triage is sorting victims based on their injury severity or ABC (Airway, Breathing, and Circulation) condition. Triage involves sorting victims based on their level of urgency, both in the field and in hospitals (Sumarno et al., 2017). Through the implementation of triage, the accuracy of disaster victim treatment can improve public satisfaction with healthcare services. This helps build trust between the community and medical teams in handling disaster victims (Ainiyah, Ahsan, Fathoni, 2015). The START (Simple Triage and Rapid Treatment) method is the most commonly used and easily applicable triage system. This method categorizes victims into red, yellow, green, and black labels. Hoag Hospital And New Port Beach Fire And Marine first introduced the START method in California in 1980, evaluating three factors: RPM (Respirations, Perfusion, and Mental status) (Pranoto & Wibowo, 2020).

The consequences of incorrect and ineffective implementation of the START triage can result in delays in transporting victims to healthcare facilities, leading to increased mortality and disability rates (Bijani & Khaleghi, 2019). Furthermore, when START triage is not performed correctly, it can cause prioritization errors, resulting in delays in providing assistance to victims and increasing the number of fatalities (Connor et al., 2014).

The study by Phukubye et al. (2019) revealed that most nurses (69%) had low knowledge about triage. Nurses can plan education and training programs independently or in collaboration with other healthcare professionals, using different techniques to enhance their knowledge, skills, and preparedness in disaster triage. Therefore, this scoping review is conducted to assist nurses in identifying disaster triage education and training programs. This study aims to (1) Identify the types of disaster triage education and training, (2) Determine the types of disaster triage covered in the education and training programs, and (3) Understand the outcomes of disaster triage education and training programs.

METHOD

This *scoping review* follows the guidelines outlined in the PRISMA statement. The selected articles were assessed and summarized accordingly. We utilized the PCC framework to develop the eligibility criteria. P represents the population, which includes nurses and nursing students. C represents the concept of disaster triage education and training programs. C indicates the context, which includes experimental research designs and articles published from 2013 to 2023.

The inclusion criteria consist of a) nurses and nursing students; b) focusing on disaster triage and pre-hospital triage, with any outcome measures (knowledge, attitudes, skills, preparedness, motivation, self-efficacy, etc.); c) RCTs, quasi-experimental designs, pre-experiments, mixed methods with experiments; d) articles published between 2013 and 2023; e) articles in English. The exclusion criteria include a) volunteers; b) focusing on disaster nursing organization and policy; c) published before 2013 and after 2023; d) articles in languages other than English; e) review articles and qualitative designs. The literature search used five main databases: Pubmed, Scopus, ProQuest, EBSCO, and Wiley, see Table 1 for the database and Table 2 for keywords.

Table 1. Database links

Pubmed	https://pubmed.ncbi.nlm.nih.gov/
Scopus	https://www.scopus.com
Proquest	https://www.proquest.com/index
EBSCO	https://www.ebsco.com
Wiley	https://onlinelibrary.wiley.com

Searching Strategy

The literature search utilized Boolean operators to obtain relevant results.

Table 2. Keywords and Boolean

Pubmed	((nurses OR nurse OR "nursing students") AND ("disaster triage" OR "triage START" OR "triage pre-hospital") AND (training OR education OR program OR Simulation))
Scopus	((nurses OR nurse OR "nursing students") AND ("disaster triage" OR "triage START" OR "triage pre-hospital") AND (training OR education OR program OR Simulation))
Proquest	((nurses OR nurse OR "nursing students") AND ("disaster triage" OR "triage START" OR "triage pre-hospital") AND (training OR education OR program OR Simulation))
EBSCO	((nurses OR nurse OR "nursing students") AND ("disaster triage" OR "triage START" OR "triage pre-hospital") AND (training OR education OR program OR Simulation))
Wiley	((nurses OR nurse OR "nursing students") AND ("disaster triage" OR "triage START" OR "triage pre-hospital") AND (training OR education OR program OR Simulation))

The search process carried out by researchers is as follows: (1) The first step, entering a combination of keywords in the database used. (2) The second step obtained a total of 401 articles from five databases with a span of the last 10 years (2013-2023) (Pubmed= 40 articles, Scopus= 34 articles, proquest= 186 articles, EBSCO= 77 articles, and wiley= 75 articles). (3) Then duplicated the publication articles using Mendeley and deleted 24 articles. (4) After duplication of articles was eliminated, the remaining 377 articles were filtered for titles and abstracts (354 articles were deleted) so that 23 articles

were obtained. (5) a full-text screening is conducted and assessed according to eligibility criteria. A total of 9 articles were issued because: a) articles are not available in full text = 5 articles, b) non-quantitative research design = 3 articles, c) not available in English = 1 article. (6) a total of 14 articles are to be reviewed.

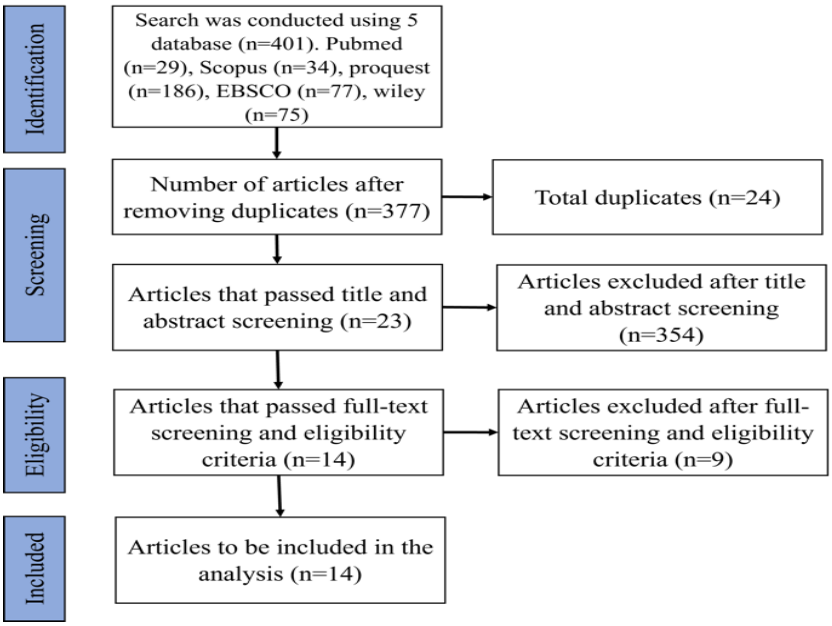

Figure 1. PRISMA Flow Diagram

Table 3. Article in analysis

Code	First Author (year)	Title
1	Hu, 2020	The impact of simulation-based triage education on nursing students' self-reported clinical reasoning ability: A quasi-experimental study
2	Xia, 2019	Evaluating the effectiveness of a disaster preparedness nursing education program in Chengdu, China
3	Huh, 2018	Effects of an educational program on disaster nursing competency
4	Cicero, 2017	60 Seconds to Survival: A Multisite Study of a Screen-based Simulation to Improve Prehospital Providers Disaster Triage Skill
5	Foronda, 2016	Impact of Virtual Simulation to Teach Concepts of Disaster Triage
6	Cicero, 2018	Correlation Between Paramedic Disaster Triage Accuracy in Screen-Based Simulations and Immersive Simulations
7	Astuti, 2022	Web-Based Triage Game Application Development as a Disaster Triage Learning Tool During The COVID-19 Pandemic for Nursing Students
8	Heidarzadeh, 2020	Comparison of pre-hospital triage training by role playing and lecture on nursing students' knowledge, attitude and performance
9	Hosseini, 2023	Crossover design in triage education: the effectiveness of simulated interactive vs. routine training on student nurses' performance in a disaster situation
10	Aghababaeia, 2013	Studying the effect of triage video training through START style on awareness level of emergency medical staffs and their performance
11	Pouraghaei, 2017	The Effect of Start Triage Education on Knowledge and Practice of Emergency Medical Technicians in Disasters
12	Rimadeni, 2021	Simple Triage and Rapid Treatment (START) Health Education Method To Preparedness Nurse of Public Health Center (Puskesmas)
13	Lee, 2016	First Responder Accuracy Using SALT during Mass-casualty Incident Simulation
14	Alshamari, 2023	Comparison Of Start And Salt Triage System In Mass Casualty Incidents: A Study Of On-Site Training

RESULTS

The 14 extracted articles were analyzed and summarized based on author, title, and year of publication, objectives, samples, types, and methods of education & training, type triage, the design used, and results. The author identifies 14 articles and presents them as a narrative table for inclusion in Table 3, see the detailed results of the review in Table 4 and Table 5.

Table 4 Subject (from the population), the objective, and research design

Code	Title	Subject	Research Design
1	This study aims to evaluate the impact of simulation-based triage training on the clinical reasoning abilities of nursing students as self-reported.	Third-year nursing students were divided into three groups: experiment group A (n=62), experiment group B (n=57), and control group (n=53). (China)	Quasy Experimental
2	Developing and evaluating a disaster preparedness training program for nursing students to enhance their competence in disaster fundamentals, triage, and family preparedness when facing disasters	420 Third and fourth-year students (China).	Experimental Study
3	This study aims to examine the impact of an educational program on disaster nursing competency among Korean nursing students.	Nursing students with a sample size of 60 (30 in the experiment group and 30 in the control group)	Quasy Experimental
4	This study aims to examine the effect of Screen-Based Simulation on improving disaster triage skills.	The sample in this study consists of 540 healthcare workers, nurses, and students who are currently studying	Prospective cohort study
5	The objective of this study is to determine the impact of virtual simulation in teaching nursing students the concept of triage using the Sort, Assess, Lifesaving Interventions, and Treatment/Transport (SALT) model.	The sample size in this study is 7 nursing students.	Mix Methods Approach
6	The objective of this research is to measure the correlation between the accuracy of Screen-Based Simulation (SBS) triage and the accuracy of immersive simulation triage.	The sample size in this study is 26 paramedic students	RCT
7	The objective of this research is to develop a Web-Based Game Triage application, to determine its effectiveness as a learning tool, and to assess students' evaluation of the application as a learning media.	The sample size in this study is 139 nursing undergraduate students in their seventh semester.	Research and Development Methods
8	The purpose of this study was to determine and compare the effectiveness of two role-play and lecture methods on the knowledge, attitudes, and performance of nursing students in the context of pre-hospital triage.	S1 nursing students with a total of 66 samples	Quasy experimental
9	Know the effectiveness of combining interactive simulation guidelines in the performance of nursing students during	S1 nursing students with a sample number of 60	Quasy Experimental
10	Knowing the effect of triage education films through the START style on the awareness and performance of medical emergency staff	72 medical emergency staff (nurses and emergency technical)	Quasy Experimental
11	Know simple triage and rapid treatment (START) education against knowledge and skills Emergency Medical Services (EMS)	205 EMS members (medical and paramedic)	Quasy Experimental
12	Knowing the difference in the readiness of nurses at the Kaki Gunung Burni Telong Health Center, Bener Meriah Regency before and after being given health education methods.	20 nurses	Quasy Experimental
13	The purpose of this study was to determine the accuracy, error pattern, and completion time of EMS triage and fire trainees using the SALT triage algorithm during MCI simulation.	38 nursing students and 29 fire science students	Quasy Experimental
14	Evaluate the effectiveness of two different triage systems, SALT and START, in simulating the mass casualty event	60 nurses	Quasy Experimental

Table 5. Intervention and results

Code	Intervention		Outcome
1	Simulation-based triage education	Triage START	**Knowledge:** The clinical reasoning ability scores on the post-test among students in experiment groups A and B were significantly higher than those in the control group (p<0.001). Nursing students who received simulation-based triage education showed greater improvement in self-reported clinical reasoning abilities compared to students who participated in lecture-based triage education programs.
2	Basic disaster training, START triage training, and family disaster preparedness training.	Triage START	***Triage* Knowledge*:*** There were no significant differences in knowledge (1.84 ± 1 vs 2.09 ± 0.93) ***Triage* Skills*:*** There were no significant differences in skills (1,32 ± 0,87 vs 1,31 ± 0,9) **Attitude:** There were no significant differences in attitude (3,00 ± 1,19 vs 2,81 ± 1,01) between the experimental and control groups at baseline
3	Disaster education and training	Triage SALT	**Knowledge:** The score of disaster nursing knowledge increased by 8.90 points after the intervention in the experimental group and decreased by 1.33 points in the control group. The difference was highly significant (T=14.37, P<0.001). **Disaster *Triage* Skills:** The score of disaster triage increased by 1.50 points after the intervention in the experimental group and decreased by 0.73 points in the control group. The difference was highly significant (T=7.90, p=0.002). **Disaster Preparedness:** The score of disaster preparedness increased by 45.70 points after the intervention in the experimental group and by 10.16 points in the control group. The difference was highly significant (T=10.82, p<0.001)
4	Screen-based simulation	Triage START	***Triage* Skills :** There was a significant difference in triage accuracy from the first game to the final game. The baseline triage accuracy median in the game was 89.7% (IQR = 82.1% - 94.9%), which then increased to a median of 100% in the final game (IQR = 87.5% - 100.0%; p < 0.001).
5	Virtual simulation	Triage SALT	**Knowledge :** There were no statistically significant differences in improvement in the post-test. Qualitative data revealed the following themes: (a) Enjoyable, (b) Appreciation for Immediate Feedback, (c) Better than Reading, and (d) Technical Issues.
6	Disaster triage simulation	Triage START	***Triage* Accuracy*:*** There was a significant improvement in the accuracy of students' *triage* in the 13 weeks from the first to the second live simulation. Students correctly triaged patients 12.7% higher (73.1% before, 85.8% after, p = 0.004).
7	Triage education with web-based games	Triage START	**Learning motivation:** More than 50% of students stated that the triage game application is creative and innovative and can enhance motivation in learning. From the questionnaire results regarding the aspects of instructional design, students expressed that this game application fosters learning motivation (64%).
8	Triage training with role plays and lectures	Triage START	**Knowledge:** There was a significant difference in the knowledge of the experimental group before and after the intervention (p<0.001). The knowledge score increased by 10.87 points. **Attitude:** There were significant differences in the attitudes of the experimental group before and after the intervention (p<0.001). The attitude score increased by 107.95 points. **Skills:**

			Skill scores in the experimental group increased significantly (p<0.001).
9	training	Triage START	**Knowledge:** TKQ scores of students in groups A (3.13 ± 1.54) and B (2.9 ± 1.55) did not differ markedly (P = 0.412). Therefore, both groups have similar knowledge about triage **Skills:** Group A has a high skill level, of which 61% (34) are female and 39% (22) are male. In group B, 70% (42) of students had high-level triage skills, of which 59% (25) were female and 41% (17) were male. The medium level is achieved by 7% of group A students, consisting of 50% girls and 50% boys. In group B, 12% of students had moderate skills; 57% were women, while 43% were men. Of the students in group B, 18% had low skills, of which 73% were girls and 27% were men
10	Training with triage videos and question-and-answer discussions	Triage START	**Awareness:** Average awareness increased from 39% to 84f.6% There was also a statistically significant relationship (p<0.001) **Skills:** The skill average increased from 29.31 to 75.57 and
11	Health education with lectures	Triage START	**Knowledge:** The knowledge score increased from 22.02 (4.49) to 28.54 (3.47). Score sections related to triage knowledge are a must. **Skills:** The average scores of the skill-related sections increased from 11.47 (2.15) to 13.63 (1.38), and 10.73 (3.57) to 14.93 (2.78), respectively, which is statistically significant.
12	Health education with lectures and demonstrations	Triage START	**Knowledge:** The results showed the average nurses' knowledge score in dealing with disasters before intervention was 8.00. After the intervention, the average nurse knowledge score was 8.85. Based on these results, it is known that there was an increase in nurses' knowledge scores by 0.85 after being given the intervention. The results of statistical tests showed that there was a significant difference in nurses' knowledge between before and after the START health education intervention. **Attitude:** The results also showed that the average score of nurses' attitudes in dealing with disasters before intervention was 8.85. After the intervention, the average nurse attitude score was 35.90. Based on these results, it is known that there was an increase in nurse attitude scores of 27.05. The results of statistical tests showed that there were significant differences in nurses' attitudes before and after the START health education intervention
13	Live simulation	Triage SALT	**Triage accuracy:** Thirty-eight PCP and 29 FS students completed the simulation. The overall triage accuracy was 79.9% for PCP and 72.0% for FS (Δ 7.9%; 95% CI, 1.2-14.7) students. No significant differences were found between the groups regarding the type of triage error. Over-triage, under-triage, and critical errors occurred in 10.2%, 7.6%, and 2.3% of PCP triage assignments, respectively. Fire science students had a similar pattern with 15.2% over-triaged, 8.7% under-triaged, and 4.3% critical error. The median time [IQR] for triage completion for PCP and FS was 142.1 [52.6] seconds and 159.0 [40.5] seconds respectively (P = .19; Mann-Whitney test).
14	Live simulation	Triage START & Triage SALT	**Knowledge:** Both systems showed an increase in average scores after training, with SALT increasing from 63.00% to 65.00% and START increasing from 69.00% to 71.00%. However, the t-test shows that this increase is not statistically significant, since the p-value is greater than 0.05.

Types of education and training on disaster triage for nursing students and nurses

There are 4 types of disaster triage education and training for nursing students (64%, 9 of 14) and 2 nurses (36%, 5 of 14). Disaster triage education and training offered to nurses and nursing students includes training (21%, 3 out of 14), education in the form of lectures (21%, 3 out of 14), education in the form of web-based triage games (8%, 1 out of 14) and simulation (50%, 7 out of 14). One disaster triage education in web-based triage games was carried out during the COVID-19 pandemic (Astuti et al., 2022). The triage game developed is a web-based application, namely PHP (personal home page tools) and a hypertext pre-processor. The manufacturing stage involves four activities, namely, the loading interface consisting of the initial page display, the main display of the result display the next stage coding, which is the process of translating application design into programming languages the next stage is the testing stage, which is testing using the debugging process, and the last stage is deploying, which is transferring files for the implementation process (Astuti et al., 2022).

The types of triage used in disaster triage education and training

Various types of disaster triage are used in the process of education and training for nurses and nursing students. There are 4 programs (29%, 4 out of 14) that use SALT triage in providing education and training (Huh & Kang, 2018; Foronda et al., 2016; Lee et al., 2016; Alshamari et al., 2023). There are 10 education and training programs (71%, 10 out of 14) use the START triage.

Results of the evaluation of disaster triage education and training

a. Knowledge

There were 9 programs evaluating knowledge (64%, 9 out of 14), 2 of the 9 programs said there was no significant difference before and after the intervention (1.84 ± 1 vs 2.09 ± 0.93), the other five programs showed a difference between scores before and after the intervention was given (Hu et al., (2021); Xia et al., (2019); Huh & Kang, (2018); Foronda et al., (2016); Heidarzadeh et al., (2020); Hosseini et al., (2023); Pouraghaei et al., (2017); Rimadeni et al., (2021); Alshamari et al., (2023)).

b. Skills

There are 7 programs that evaluate related skills (50%, 7 out of 14), these seven programs are given by different methods, namely by education, lectures and training. The results showed an increase between pre-test and post-test scores, but there was no significant difference between the intervention group and the control group (Xia et al., (2019); Huh & Kang, (2018); Cicero et al., (2018); Heidarzadeh et al., (2020); Hosseini et al., (2023); Aghababaeian et al., (2013); Pouraghaei et al., (2017)).

c. Attitude

There were 3 programs that evaluated attitudes (21%, 3 out of 14), showing no significant difference in attitudes between the experimental group and the control group (3.00 ± 1.19 vs 2.81 ± 1.01). There were significant differences in the attitudes of the experimental group before and after the intervention ($p<0.001$). The attitude score increased by 107.95 points. The program method is carried out in the form of START triage training. One possible explanation for the change in attitude in triage is the nature of disaster scenarios (Xia et al., (2019); Heidarzadeh et al., (2020); Rimadeni et al., (2021)).

d. Preparedness

There is one program that evaluates related to preparedness (7%, 1 in 14); the program can significantly improve disaster preparedness. Disaster preparedness scores improved by 45.70 points after intervention in the experimental group and by 10.16 points in the control group. There was a very significant difference between the intervention group and the control group ($T = 10.82$, $p < 0.001$). This program uses a method of disaster education education through lectures (Huh & Kang, 2018).

e. Triage accuracy

There are 2 programs that evaluate triage accuracy (14%, 2 out of 14). One program showed a significant difference in triage accuracy from the first game to the last game. The triage accuracy in the game was 89.7% (IQR = 82.1%–94.9%), which then increased to 100% in the last game (IQR = 87.5%–100.0%; p <0.001)(Cicero, et al., 2018). One other program showed a significant improvement in student triage accuracy in the 13 weeks from the first to the second live simulation, students correctly triage patients 12.7% higher (73.1% before, 85.8% after, P = 0.004) (Cicero et al, 2018). Both programs used simulation methods to enhance disaster triage accuracy.

f. Learning Motivation
One program evaluated learning motivation (7%, 1 out of 14). In this program, more than 50% of the students stated that the triage game application was a creative and innovative application that could enhance learning motivation. The program showed a significant difference in learning motivation based on the pretest and posttest results, with a Sig value 0.000 (α < 0.005). This program used a web-based triage game method called PHP (personal home page tools) hypertext pre-processor (Astuti et al., 2022).

g. Awareness
One program evaluated awareness in performing disaster triage (70%, 1 in 14). The program can significantly increase awareness in conducting disaster triage. Average awareness increased from 39% to 84.6% There was also a statistically significant relationship (p<0.001) (Aghababaeian et al., 2013).

DISCUSSION

The main findings of this scoping review are the existence of disaster triage education and training programs in the past 10 years. Some of these studies can help nurses identify the appropriate type of triage in disaster situations (Lumbu et al., 2013). Unpredictable disaster situations can negatively impact physical and environmental conditions (Dorasamy et al., 2020), necessitating swift and effective triage actions that require strategic handling (Mace & Mayer, 2013). The role of nurses in disaster triage should be emphasized, including education and training to enhance their abilities in conducting disaster triage (Eryilmaz et al., 2017).

Nurses play a crucial role in disaster triage. Academic education programs should prepare students to perform triage during disasters. One way to enhance students' ability to perform triage during disaster emergencies is by providing triage-related education (Anwar, 2021). Disaster triage education and training programs, such as games and simulated scenarios, can enhance enjoyable learning motivation, particularly to improve students' experiences in learning, knowledge, and skills (Hung et al., 2020).

In the context of disaster triage, these education and training programs cover knowledge related to disaster triage, indicating that senior nursing students have higher knowledge than junior nursing students (Hung et al., 2020). Regarding attitudes and skills in triage, diploma students have better skills than undergraduate nursing students (Xia et al., 2019). As for preparedness and triage accuracy, nurses show higher preparedness and better accuracy than nursing students. Moreover, motivation in disaster triage learning shows a significant change before and after the experiment, but no significant difference in learning motivation is observed between nurses and nursing students (Cicero, Mark et al., 2018).

These programs utilize various methods such as games, education, training, and simulations. Simulation-based programs are the most common, allowing nurses and nursing students to translate knowledge into practice in scenarios. Simulations have facilitated decision-making for nurses and nursing students by incorporating triage principles and clinical reasoning, including information gathering, problem identification, experiment delivery, and outcome assessment (Hung et al., 2020). One of the most commonly used triage methods is the START method, a simple method that can be executed within 60 seconds or less for each victim (Lumbu et al., 2013).

Triage-related training is carried out by randomly giving cards to each participant to categorize victims and enter each color code which should be 120 minutes (Xia et al., 2019). Triage training can

also be provided by lecture and roleplay methods. In the lecture method, the material can be given within 90 minutes. The demonstration method can be done by providing a pre-designed scenario and a triage card to select victims, which are then included in the appropriate color label (Heidarzadeh et al., 2020). Training can also be done through video media given to participants for 15 minutes (Aghababaeian et al., 2013). Health education can be done with lectures and demonstration methods that have proven effective (Pouraghaei et al., (2017); Rimadeni et al., (2021)).

Simulation methods that can be applied in disaster triage learning are direct simulation, screen-based simulation, and virtual. Live simulations were conducted by providing scenarios including cases of death, multiple trauma, cardiac arrest, acute respiratory failure, fractures, panic attacks, and angina. Each scenario lasts for 5-10 minutes. The simulation process is reviewed by experts consisting of simulation experts, clinical nursing experts, and nursing professors. Participants were given a debriefing for 1 hour before the simulation and given a short presentation to describe the scenario for 5 minutes. The debriefing focused on how to combine clinical reasoning and triage principles in clinical decision-making with the integration of clinical reasoning model principles (Alshamari et al., (2023); Cicero et al., (2018); Hosseini et al., (2023); Hu et al., (2021a); Lee et al., (2016)). However, this study has limitations as it only uses five databases, so there may be relevant articles in other databases

CONCLUSION

This research demonstrates the presence of various disaster triage education and training programs in the past 10 years. The findings from this scoping review provide information about disaster triage education and training, including education, training, web-based triage games, and simulation with scenarios. Two types of disaster triage, START and SALT triage, are used to educate nurses and nursing students. The findings also discuss the outcomes of disaster triage education and training programs, which include knowledge, attitudes, skills, preparedness, triage accuracy, awareness, and motivation for learning.

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