

Public Awareness of Triage System in Emergency and Trauma Department: A Literature Review

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ABSTRACT

A triage system is being implemented in the Emergency Department (ED) to help categorise the patients according to their acuity. However, there are limited studies discussing patients' knowledge and understanding of the triage system. This review aimed to identify prior studies that discussed the patients' knowledge and understanding of the triage system and to discover patients' expectations of priority when they came to the ED and the reasons for attending the department. The articles were searched through several databases (IIUM Discovery Service, Science Direct, and PubMed) to obtain sources using the Boolean phrase 'AND', filtered down to English full-text articles with open access, and published between 2010 and 2020. A total of 16 studies were included in this review. Among all the studies, only one was conducted in the Southeast Asia region, Singapore. Most of the studies reported findings on reasons for visiting the ED for non-urgent attendance, and four of the studies discussed the patients' awareness of the triage system. The patients need more information to improve their understanding of the triage system. The literature highlighted that most of the patients expected higher priority when they came to the ED. The main reason for their visit to the ED was because of the convenience offered by the ED in terms of operating hours and the availability of all facilities in one place. More studies about patient's awareness and knowledge of the triage system need to be conducted to provide a clear insight into what they know about the triage system.

Keywords: Public awareness; Emergency department; Knowledge; Triage system.

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INTRODUCTION

The emergency department (ED) serves as a facility that provides urgent and immediate treatment to patients with critical conditions. These days, the number of patients visiting ED has increased rapidly and about half of them are non-urgent visits (1). Thus, a triage system was implemented to classify all the patients, so that they will be seen according to their level of urgency instead of the order of arrival.

Most of the EDs use triage systems to sort the patients according to their level of urgency and priority to ensure that the patients get the right treatment at the right time especially those who are with the most urgent condition. The triage system assists the emergency healthcare personnel in identifying those who need immediate medical attention, so they will be attended to earliest. At the same time, those who are with non-urgent conditions will be seen later (2). This system was also implemented to ease patient flow in the ED so that there would be less overcrowding and boarding. There are many types of triage systems worldwide such as the Australasian Triage Scale (ATS), Manchester Triage Scale (MTS), Canadian Triage Acuity Scale (CTAS) and Emergency Severity Index (ESI) besides the Malaysian Triage Scale (3).

The triage system aimed to categorise patients according to their level of acuity to identify the risks for each patient. It could give immediate attention to those with urgent conditions to save their lives and reduce the mortality rate. There had been many responses and feedback from the patients who had undergone the triaging process. The most common issue raised by the patient is the long waiting time (2, 4, 5). Most of the studies that had been done highlighted the waiting time in emergency departments and the patient's satisfaction towards the emergency department and triage system.

Hence, when the patients or relatives know about the function of the triage, this could reduce their dissatisfaction towards the department (6). Patients who understand this system are more likely to provide accurate information during triage assessments, aiding in the proper allocation of resources. When they understand what triage is, it is more likely they will cooperate with the healthcare professionals and further enhance the clinical outcomes. This leads to a more efficient use of resources and reduces bottlenecks in the ED,

ultimately improving patient flow and decreasing wait times.

Up to today, there is a limited number of studies that discuss the patient's knowledge and understanding of the triage system. The medical field including emergency medicine itself keeps improving and progressing. Thus, it is important to determine patients' knowledge, understanding and view of the triage system to serve as a guideline to improve the triage system in the emergency department. Hence, the objective of this review is to identify prior studies that discussed the patients' knowledge and understanding of the triage system, to discover patients' expectations of priority when they came to ED and to discover the reasons why the patients came to the ED in the first place.

MATERIAL AND METHODS

The IIUM Discovery Service, Science Direct, and PubMed databases were used to find articles that addressed patients' awareness of the triage system in the emergency department. Public awareness, AND, understanding, AND, knowledge, views, AND, attitude, AND, and behaviour of the triage system in emergency departments are the keywords that were used to search those articles. The review includes English full-text publications with open access that were published between 2010 and 2020 after the search was narrowed down. Out of the 840 research that were found, only 16 publications met the inclusion criteria and were suitable for the review. It used the Critical Appraisal Skills Programme (CASP) checklist of systematic review to critically evaluate the information published by the previous articles in identifying the strengths and limitations.

RESULTS

A total of twelve (12) quantitative studies and four (4) qualitative studies were included in the review (**Figure 1**). Among the included studies, most of the studies were conducted in 2016 and 2012 with a total of 5 studies in 2016 and 4 studies in 2012. There was one latest study that was conducted in 2020 while the other remaining studies were conducted in year 2019, 2017 and 2014. In terms of the geographical landscape of the studies, three (3) studies were conducted in Saudi Arabia, two (2) studies were conducted in Africa, two (2) studies were conducted in Australia and two (2) studies

reported findings in the United States of America. The remaining studies were conducted in Iran, Brazil, China, Los Angeles, France, Norway, and Singapore.

Most of the quantitative studies used cross-sectional surveys (n=7) and the remaining were descriptive studies. For the qualitative studies, two (2) studies used semi-structured interviews and the remaining were done through descriptive

exploratory studies and in-depth interviews. However, there was one study with unclear study designs included as well as the findings answered the objectives of this review. Most of the studies reported findings on reasons for visiting the ED for non-urgent attendance and four (4) of the studies discussed patients' awareness of the triage system. **Table 1** describes the summary of these studies.

Figure 1: PRISMA chart for literature search

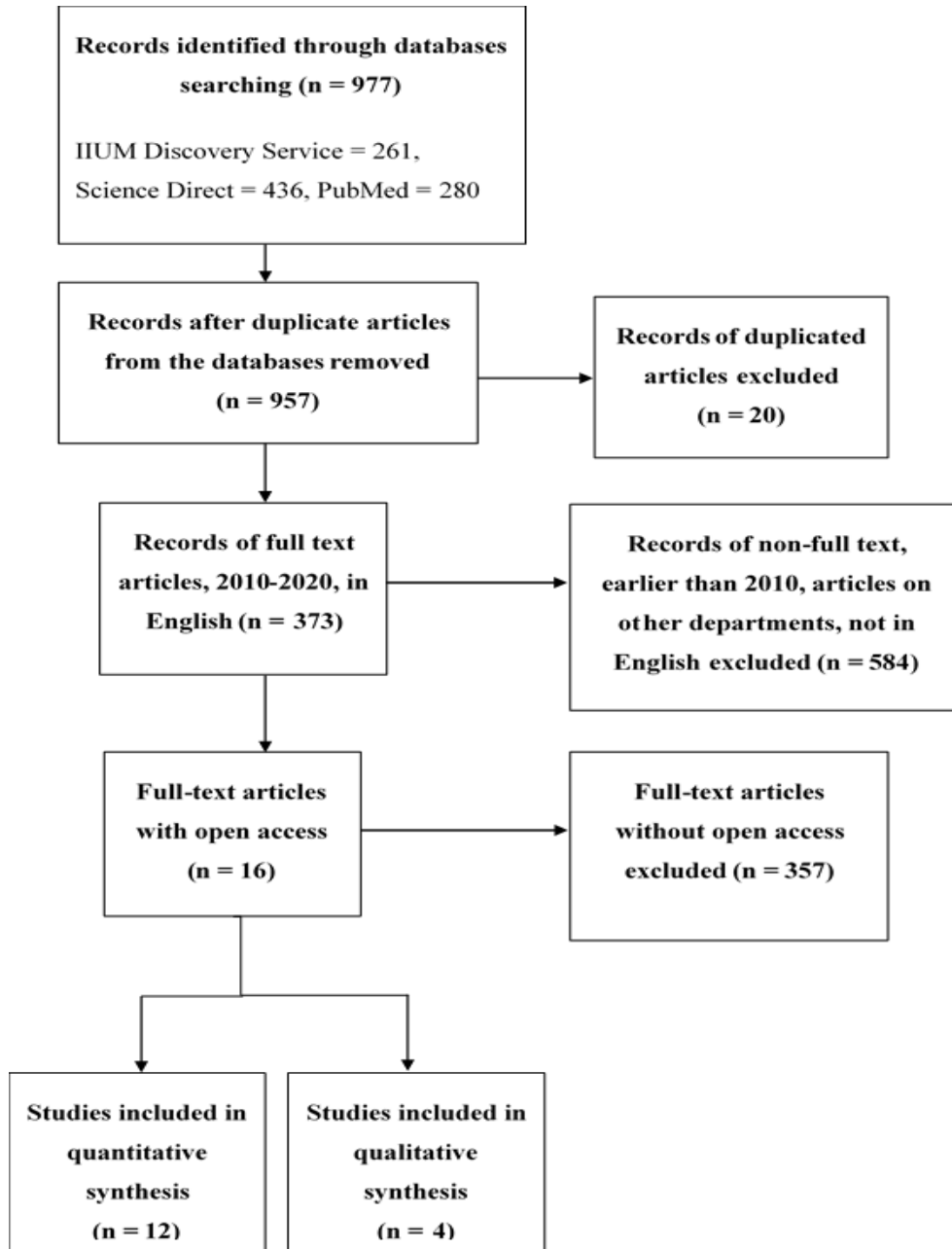


Table 1: Summary of literature review conducted

Title/Author/Year	Design	Setting/Sample	Summary of Findings/Limitations	Remarks
<p>1. Agreement between triage category and patient's perception of priority in emergency departments (7).</p>	<p>Cross-sectional study</p>	<p>The study took place in the emergency department (ED) of eight public hospitals across Queensland, Australia. Four of the hospitals were in major cities, two were in inner regional areas, and two were in outer regional and remote areas. One ED was a children's ED and all others treated both adults and children. The data was collected from March to May 2011 by four members of the research team and a group of eight trained interviewers. The sample size of 911 patients was obtained.</p>	<p>The researchers found that there was little agreement between patient-perceived priority and nurse-assigned triage category. Respondents seemed to expect a higher priority if they had attended the ED more than once in the past six months.</p> <p>Limitations: 43% of the population did not participate in this study. Thus, the researcher could not assess the impact/bias their exclusion from the study might had on the results. Furthermore, the data was collected in autumn which may influence the pattern of attendance. Besides, during the data collection, some patients had already started their treatment which may have affected their responses. This study also did not include other factors that may contribute to differences in patient's perceptions such as personality traits, experience, and health literacy.</p>	<p>The findings stated fit the objective of the study. However, the findings showed that there were no association between sociodemographic factors with the patients' perceived priority. On the other hand, the settings took place in multiple locations. Thus, the findings may be able to be generalised with the findings from other EDs.</p>
<p>2. Patient's perception of the triage system in a primary healthcare facility, Cape Town, South Africa (8).</p>	<p>Qualitative study</p>	<p>This study was conducted at Gugulethu Community Health Centre (CHC), a 24-hour primary care facility about 18 km from the centre of Cape Town. Nine participants were recruited, seven were recruited during their actual visit to the emergency care (EC), and two from those who had attended the EC 2 months</p>	<p>The researchers discovered that patients did not get enough information on how the triage system works. Some patients thought that the system was unfair as their experience differed based on the triage category assigned to them. They also voiced some concerns about infection control as all the patients shared the same waiting room. However, the presence of support staff who assist the patients did give positive experiences to them.</p> <p>Limitations: There should be additional interviews to ensure that there was equity</p>	<p>The findings of this study fit the purpose that aimed to discover the ethical, social, and operational issues surrounding triage by identifying patients' opinions and experiences of triage. Even though this study used a qualitative approach, the findings can be adopted into the current study. Next, this study was not conducted in an ED of a hospital, but the triage process was similar to the triage process in a hospital. Even so, more participants should be</p>

Title/Author/Year	Design	Setting/Sample	Summary of Findings/Limitations	Remarks
		before. They were selected from different colour categories, different genders and from both office hours and after-hours.	between colour codes, gender, time seen and an equal number of children and adults. The interviews were conducted in the Xhosa language and this issue must be considered when generalising the findings to other ECs in other parts of Cape Town even though the interviewer was rained and fluent in Xhosa but was not a health professional. Thus, it may affect the interviewer's understanding of the health system mentioned by patients during the interview.	recruited to have a broader view of patients' opinions and experiences of the triage system. Moreover, the interviewer should be among the health team to ensure that the interviewer can understand the answers from the patients.
3. Exploring emergency department visits: factors influencing individuals' decisions, knowledge of triage systems and waiting times, and experiences during visits to a tertiary hospital in Saudi Arabia (9).	Cross-sectional study	The study was conducted at the adult ED at King Abdulaziz Medical City, Riyadh, Saudi Arabia with a sample size of 334 patients who attended the ED, classified as level 3, 4, or 5, age <14 years old, Arabic speakers and cognitively competent were recruited.	<p>The researchers found that the population of the study was not aware of triage and only a small percentage of the participants have a primary care provider. The participants of this study claimed that they desired more information regarding their visits and general health information.</p> <p>Limitations: The researchers recruited the participants using the convenience sampling method. Thus, the study population cannot be representative of all ED visitors in Saudi Arabia or the Middle East. Non-Arabic speakers were not included in this study generalising the findings limited. Next, the researchers recruited the participants in three different shifts which might influence their findings. Furthermore, as the response rate was 80% and there were differences in the time of data collection, it may cause the result to be skewed.</p>	The findings fit the objective of this study and answer the research question of the current study. However, the findings showed that there was no association between sociodemographic factors and the knowledge of the triage system. The study settings, subjects and design were mentioned clearly which makes it easier to compare the findings with other studies. However, the researchers should include non-Arabic speakers as their responses may have an impact on the findings of their study.

Title/Author/Year	Design	Setting/Sample	Summary of Findings/Limitations	Remarks
4. Is it a matter of urgency? A survey of assessments by walk-in patients and doctors of the urgency level of their encounters at a general emergency outpatient clinic in Oslo, Norway (10).	Cross-sectional study.	The sample size of 1821 participants was recruited from the patients who attended the general emergency clinic at the Oslo Accident and Emergency Outpatient Clinic (OAEOC) for 2 weeks in September 2009.	<p>The researchers identified that there was a discrepancy between how walk-in patients and doctors define the level of urgency of their encounters at general emergency outpatient clinics. Approximately two-thirds of walk-in consultations were considered by doctors as non-urgent. The self-assessed perception of the level of urgency by patients was related to their region of origin.</p> <p>Limitations: The response rate for this study was high. However, some patients were during the evaluation of inclusion by triage nurses, and some left without being seen which might cause bias in the findings regarding the urgency levels perceived by patients. Next, the data was collected in 2009 which is a little outdated. The researchers excluded the patients for whom a translated questionnaire was not available which caused them to not be able to discover cultural differences in perspectives of urgency level.</p>	The findings fit the purpose of this study and answer the research question of the current study. However, this study was conducted in a general emergency clinic instead of an ED in a hospital, but the triage process was like the triage process in a hospital. Next, the researcher should collect more recent data so that the findings will be more relevant when compared to the findings of other studies. The questionnaire was translated into seven different languages where we can see whether cultural differences affect their perceptions of urgency.
5. Reasons for non-urgent presentations to the emergency department in Saudi Arabia (11).	Descriptive study.	This study was conducted at a large tertiary referral government ED in Riyadh, Saudi Arabia. The data was collected in 25 days of March 2013 and the researcher was able to recruit 350 adult patients who visited the ED with non-urgent problems.	The researchers were able to identify the reasons for non-urgent visits to the ED and the factors associated with patient perceptions of urgency. Based on this study, the reasons for visits to ED are because EDs are convenient and perceptions that ED would provide better care. The patient's perceptions of urgency were different from clinical opinions as most of the patients perceived higher urgency than the triage nurse rating.	The findings fit the purpose of this study. The research questions were mentioned, making it easier to relate them to the objectives and the findings of the study. Next, the data was collected by the researcher himself, which makes the data collected valid and reliable. However, this might introduce bias as it was conducted by face-to-face interview.

Title/Author/Year	Design	Setting/Sample	Summary of Findings/Limitations	Remarks
			<p>Factors of the disagreement were timeliness of care, empathy, technical expertise, provision of information to patients and effective pain management which affect patients' satisfaction.</p> <p>Limitations: There was limited generalisation of the results to another ED as they only took the sample from a single military hospital ED. Next, the survey was conducted face-to-face during the patient's waiting time in ED which may influence their response.</p>	
<p>6. Nonurgent patients in emergency departments: rational or irresponsible consumers? Perceptions of professionals and patients (1).</p>	<p>Qualitative study.</p>	<p>87 patients and 34 ED health professionals were able to be interviewed from 10 EDs in the Provence-Alpes-Cote d'Azur (PACA) region of France in March 2006.</p>	<p>The study was able to differentiate the views between ED health professionals and patients. The researchers found that the health professionals did not thoroughly investigate complaints with no life-threatening conditions.</p> <p>Limitations: Their analysis did not include the perceptions of nurses and the data collected was about 6 years before the study was done.</p>	<p>The findings fit the purpose of this study. Even though this study used a qualitative approach, the findings can be adopted into the current study. The number of participants interviewed was able to represent both populations. Even so, the data seems outdated as the data was collected in 2006. The data analysis used was appropriate as there is limited literature on the topic of this study. In addition, the data was interpreted by a multi-professional research team with different backgrounds which was considered as appropriate.</p>
<p>7. What do patients want? Survey of patient desires for education in an urban university hospital (12).</p>	<p>The study design was unclear.</p>	<p>The study was conducted at an urban university teaching hospital in the waiting room of the ED. The data was collected in blocks of time between</p>	<p>From this study, the researchers were able to identify that 70% of patients had a lack of knowledge of the triage system and 69% lacked knowledge of teaching hospitals. They also identified that the patients desired more information in the ED.</p>	<p>The findings fit the purpose of this study. The study design was unclear, but the subjects, settings, objectives, and results of the studies fit the research questions of the current study.</p>

Title/Author/Year	Design	Setting/Sample	Summary of Findings/Limitations	Remarks
		<p>December 2011 and February 2013. A total of 544 patients or carers were able to be recruited.</p>	<p>waiting room. The educational materials desired by the patients were about hospital and ED functions and severe health conditions.</p> <p>Limitations: The study was only conducted in one ED which limits the generalisation of results in other EDs. Next, not all surveys were returned as the patients either called to be seen or left without being seen as well as they reconsidered their participation before completing the survey. Thus, the researchers were not fully able to assess patients' satisfaction with the visit or their understanding of discharge instructions. Moreover, they did not include patients' preferences for receiving updates from physicians or nurses. Lastly, the survey was only in two languages which restricted responses from a minority of people which only fluent in an additional language.</p>	
<p>8. Why are we waiting? Patient's perspectives for accessing emergency department services with non-urgent complaints (13).</p>	<p>Cross-sectional study.</p>	<p>This research was carried out in the ED at a regional Tasmanian hospital. The data was collected from 477 non-urgent patients triaged as categories 4 and 5 from 23rd July to 3rd September 2015.</p>	<p>The most frequent presenters to ED were aged 15 – 24 years old and one-third of the sample complained of musculoskeletal problems. The researchers identified that the non-urgent presentations to ED were mainly because of the convenience of service, perceived need, and referral from other health care providers.</p> <p>Limitations: The study was conducted during winter which caused slightly higher attendance to the ED. The researcher might exclude some of the surveys due to mental health concerns and or English literacy skills.</p>	<p>The findings fit the purpose of this study. The settings, method, sample, data collection and results of this study were mentioned very clearly making it easier to compare it with other studies. The number of samples collected was able to represent the whole population. The researchers were able to avoid bias as they did not aid the patients while they completed the surveys as their involvement might influence the response from the patients.</p>

Title/Author/Year	Design	Setting/Sample	Summary of Findings/Limitations	Remarks
9. Awareness of the Saudi population about the role of the emergency rooms (14).	Cross-sectional study.	The study is conducted in different areas of the Kingdom of Saudi Arabia from 1 January to 31 July 2019. The total sample for this study is 977 males and females of all age groups.	The researchers found that most of the participants were able to differ between outpatient clinics and emergency rooms (ERs). Most participants defined ERs as rapid and unplanned medical care and/or the availability of physicians at any time for any purpose. There was an association between awareness age and education level.	The findings fit the purpose of this study. This study was not conducted in an ED of a hospital, but the findings from this study can be used to compare with the findings from other studies. However, the settings of the study and how they recruited the participants were not clearly explained by the researchers.
10. A profile of non-urgent emergency department usage in an urban pediatric hospital (15).	Descriptive study.	The study was conducted at the ED of Children's Hospital Los Angeles (CHLA). They recruited 106 respondents who were the parents or caregivers of the children who were brought to the ED and had been triaged as semi-urgent or non-urgent.	Based on the study, the researchers were able to identify that the parents or caregivers have limited child health knowledge. Other than that, their presence in the PED was also due to the convenience of the ED itself as they thought their child would receive high-quality care. The result also showed that the parents or caregivers overestimated their child's urgency. Limitations: The researchers recruited the caregivers whose children had been triaged into the semi-urgent or non-urgent only. Thus, the result cannot be compared with those who had their children been triaged into urgent. In addition, the researchers used a convenience sampling method and only recruited a small number of respondents which caused the generalisation to the bigger sample cannot be made. Lastly, the researchers did not interview the community providers. Thus, their perspectives on challenges in medical care cannot be identified.	The findings fit the purpose of this study. All the information on the settings, participants, measures, and analysis was explained very clearly. However, there was no table of results displayed in the study even though it was explained clearly by the researchers.

Title/Author/Year	Design	Setting/Sample	Summary of Findings/Limitations	Remarks
11. Emergency department visits: Why adults choose the emergency room over a primary care physician visit during regular office hours? (16)	Descriptive study.	The total participants selected for the study were 262 adult patients at a suburban hospital emergency department who visited the ED during regular business hours from July 2011 to August 2011.	<p>The result of this study showed that there are no factors that influenced patients to visit ED for non-emergent issues. They only found out that the marital status and employment status of the patients influenced their attendance at the ED during regular office hours.</p> <p>Limitations: This study is a single-centre study with a small sample size and conducted in a limited period. Thus, the findings may not be comparable to other populations. Next, there might be bias as the sample was not recruited using simple random sampling and the responses only depend on the questionnaire. Moreover, the patients' assigned triage category might change during the study based on the condition of the patients. Lastly, the standard definition of "emergent" and "non-emergent" was not clearly defined while conducting the study.</p>	The researchers did not mention the objective of the study but stated the hypotheses instead. However, only one component from the finding, which is the employment status matched with the hypotheses as the marital status was not mentioned before. Nevertheless, the findings from this study can be used to compare with the findings from other studies. The researchers were able to avoid bias as they did not aid the patients while they completed the surveys as their involvement might influence the response from the patients.
12. Use Andersen's behaviour model to explain non-urgent visits in the emergency department: A single center study in southwest China (17).	Cross-sectional study.	This study was conducted in the ED of West China Hospital of Sichuan University, from the 1st of June until the 20th of June 2019. About 545 patients who were categorised as non-urgent had participated in this study.	<p>The researchers discovered that the reasons for ED visits were determined by patients' perceived need for emergency and educated people and minority groups had a higher tendency to visit ED for non-urgent reasons.</p> <p>Limitations: The researchers claimed that this study was a single-centre study, and the results must be interpreted cautiously when generalising to EDs in other regions. Next, contextual factors were not included in this study due to difficulties in data collection. Lastly, the representativeness of</p>	The findings fit the purpose of this study. All the information on the settings, participants, measures, analysis, and results were explained very clearly.

Title/Author/Year	Design	Setting/Sample	Summary of Findings/Limitations	Remarks
13. Reasons why patients with primary health care problems access a secondary hospital emergency centre (18).	Descriptive study.	The study was conducted among 277 patients who were triaged as green for routine care in George Hospital located in the Western Cape province of South Africa between the 5th of March and the 5th of April 2012.	<p>the sample may be affected by the high rejection rate of eligible participants.</p> <p>The researchers found out that most of the patients came self-referred and only a few of them were appropriate for the emergency centre (EC). The self-referred patients claimed that they attended the EC due to the medicine prescribed by the clinics was not helping, the perceived quality of hospital treatment, lack of primary health care (PHC) after-hour services in the George sub-district, long waiting time, referral from the PHC and availability of 'special tests' in the EC. Some of the patients came with chronic complaints and some came frequently with problems that can be treated in PHC. Thus, the researcher concluded that the patients should be educated on PHC services availability.</p> <p>Limitations: There might be bias as the patients were assisted by the EC doctors while completing the questionnaire.</p>	The findings fit the purpose of this study. The settings of this study were explained clearly. However, the information on the characteristics of the sample, analysis and ethical considerations was limited. Furthermore, the table of the results was not displayed.
14. User embracement with risk classification: Perceptions of the service users of an emergency care unit (19).	Qualitative study.	The study was conducted in an Emergency Care Unit (UPA) in a municipality in the interior of the Brazilian State of Parana. 20 UPA users aged 18 years old and above, with risk classification other than red were recruited from November to December 2013.	The researchers discovered that the perceptions of the users were divided into two categories which are risk classification is an advantage in attending emergencies and disagreement with the risk classification. In conclusion, the service users were not completely satisfied with the implementation of the ACCR (User Embracement with Risk Classification and Assessment).	The findings fit the purpose of this study. The researchers did not mention who conducted the interview and analysed the data obtained but clearly explained how it was analysed. Even though this study used a qualitative approach, the findings can be adopted into the current study.

Title/Author/Year	Design	Setting/Sample	Summary of Findings/Limitations	Remarks
			<p>Limitations: The perceptions of the users were taken in a single locale and at a single time.</p>	
<p>15. Understanding decisions leading to nonurgent visits to the paediatric emergency department: caregivers' perspectives (20).</p>	<p>Qualitative study.</p>	<p>The study was conducted at the ED of KK Women's and Children's Hospital (KKH), Singapore, a large public children's hospital. 50 caregivers whose children had been diagnosed with typical nonurgent conditions were approached to be interviewed. However, only 49 of them agreed to be in this study.</p>	<p>The researchers were able to identify the caregiver's perspectives of non-urgent ED visits which were perceived severity of the child's symptoms, availability after hours, perceived advantage of KKH as a paediatric specialist hospital, lack of trust towards primary healthcare providers' ability to manage paediatric conditions, insurance or welfare and future-decision making. The researchers also discovered caregivers' understanding of the local healthcare system and how they compared the advantages and disadvantages of ED and primary care in their decision-making process.</p> <p>Limitations: The interviews were conducted after the consultations which may have influenced their responses. Next, this study used a convenience sampling method with categories of, high fever, minor head injury and nose bleeds. These categories may not represent all non-urgent cases. Furthermore, the interviews were only conducted in English where the perspectives from the minority cohort who spoke in different languages were unable to be obtained. Lastly, this was a single-centre study where the result may not be able to generalise to all non-urgent visits to other EDs.</p>	<p>The findings fit the purpose of this study. Even though this study used a qualitative approach, the findings can be adopted into the current study. The data was analysed by the researchers themselves which increased the rigour and trustworthiness of the results. Moreover, this study was conducted in Singapore where the setting is in Southeast Asia.</p>

Title/Author/Year	Design	Setting/Sample	Summary of Findings/Limitations	Remarks
16. Emergency department visits for non-urgent conditions in Iran: a cross-sectional study (21).	Cross-sectional study.	The study was conducted in an ED of a territorial, military, teaching hospital in Tehran province. The subject was recruited from all patients who visited the ED during the 2 weeks of the study period. 1884 visits were recorded.	<p>From this study, the researchers found that cheaper cost, receiving prompt care and insurance coverage were the main reasons for non-urgent (NU) ED visits.</p> <p>Limitations: The researchers only conducted the study in one hospital, and it was a large hospital. Thus, it might limit the generalisation to all NU visits to other EDs.</p>	The findings fit the purpose of this study. The inclusion criteria of the participants were not clearly stated which makes it difficult to compare the characteristics of the sample with other studies. Next, there might be bias in the result as the participants were assisted by a triage nurse while completing the questionnaire.

DISCUSSION

This review compiled and synthesised findings from 16 studies that reported the knowledge and understanding of patients towards the triage system, their perception of priority when they came to the ED and the main reasons for their attendance at the ED. Based on the review, most of the studies first define the meaning of emergency department, triage system and types of triage system used in their studies as well as the definition of non-urgent attendance in ED. Four studies that mentioned the definition of the ED all agreed that ED is a facility that provides urgent and immediate care for patients with life-threatening conditions (7,14,18,21).

Meanwhile, a triage system is defined as a tool to aid in categorising the patients according to their level of urgency and to provide medical treatment according to their assigned triage category (9,11). The triage category also aims to treat the most urgent cases first rather than treating the patients according to their order of attendance (8). However, some patients felt that the triage system was unfair and violated their rights as patients (8).

Patients Understanding of Triage System in Emergency Department (ED)

One study reported that the patients were dissatisfied with the implementation of the triage system (8). That was mainly because they had no idea about the triage system and its function. The patients also agreed that they did not get enough information about the triage system where they referred only to their experience, information received by the healthcare personnel and other sources that were displayed in the triage area. However, the information was still inadequate for the patients.

Alhabdan et al. (9) also noted that there were only 60% of Saudi Arabian patients have knowledge of how the triage system works. However, only half of them were able to give a correct explanation of the situation. Moreover, there were only a small number of participants who were able to give the correct definition of the triage system. In contrast, Seibert, et al. (12) reported that the majority of the patients understood how the triage system works and most of them were able to provide correct explanations on why the emergency healthcare personnel did not see the patients according to their order of arrival. Alhussain et al. (14) also mentioned that the patients understood the function of the emergency room (ER) and were able

to differentiate it from outpatient clinics. This finding also reflects that the patients do understand how the system works as most of the patients answered that ER is defined as rapid and unplanned care where the patients will be seen according to the severity of their conditions.

On the other hand, de Oliveira et al. (19) discovered two different views from the patients who attended the Emergency Care Unit in the Brazilian state of Parana where some of the patients showed an understanding of the triage system by being able to explain that those with greater risk should be seen first instead of those who came earlier but not serious. Meanwhile, some of the patients showed disagreement towards the implementation of the triage system in the hospital as they were classified as low priority and saw this system only benefit those who had higher priority. From all these findings it can be concluded that the patients need more information about the triage system to help them understand more about the categorisation process.

Patient's Perception of Urgency

In terms of perception of urgency, most patients tend to have a higher perception of urgency than the triage personnel rating of urgency. This finding was discussed in several studies where the non-urgent patients did overestimate their urgency level (7,10,11,15). Alyasin & Douglas (11) found that the patient's perception of urgency is not related to their sociodemographic data (age, gender, marital status, place of residence and employment status). However, it does relate to their level of education.

On the other hand, Ruud, Hjortdahl and Natvig (10) discovered that the patient's perception of urgency was related to their origins but this relation was not highlighted by other studies. Several studies mentioned the difference in the evaluation of urgency between healthcare personnel and patients where the patients usually assessed their urgency level according to their medical condition before being seen by the healthcare personnel. Meanwhile, the healthcare personnel assess the patients' urgency level based on the information of the patients after consultation and their medical problems (1,10).

In addition, the patients had a lack of knowledge of the symptoms, seriousness, and ways to handle their medical problems which affected their perception of urgency and influenced them

to attend the ED (15). In short, there is a dissimilarity in how patients and healthcare personnel evaluate the level of urgency and that affects patients' decision to attend the ED.

Patients' Expectations of the ED

Every patient who comes to the ED will have some expectations that they hope the ED will be able to fulfil. The most common expectation that arose among the patients was about the waiting time at the triage. One study reported that the patient's expectation of the ED in terms of waiting time was affected by the way they accessed the ED (8). The author mentioned that those who self-referred themselves to the ED were expected to be seen by the healthcare personnel immediately.

On the other hand, some patients expect to be informed of their waiting time periodically (9,12). Furthermore, the patients were also expected to get some education regarding the function of the ED and triage system as well as some health-related information (8,9,12). As noted by those articles, the patients preferred to get that information via videos while they were waiting for their turn in the waiting room.

Patients' Experience in the ED

One study pointed out two experiences of the patients in the triage system which are good experience and poor experience that were influenced by their assigned triage category. In Adeniji and Mash (8), most patients who were triaged as urgent cases usually had a good experience as they claimed that the nurses were being good to them. Meanwhile, those who were triaged as non-urgent, claimed that the nurses were being judgemental. de Oliveira et al. (19) also discovered two types of opinions from the patients in the Emergency Care Unit where some patients agreed with the implementation of the risk classification system, while some disagreed with it.

Those who agreed saw this system gives benefits to both patients and healthcare personnel as it will help the healthcare personnel to identify urgent cases and respond immediately. On the contrary, those who disagreed did have poor experiences where the patients were not triaged as they expected. This may be due to a lack of skills among the healthcare personnel, or the perceived urgency of the patient did not meet the criteria of their deserved triage category (19).

Reasons for Non-Urgent Attendance to the ED

Even though the ED is specially designed for urgent cases, there are also patients with non-urgent conditions who come to the ED to seek medical treatment. Most of the studies figured out that the main reason for non-urgent ED attendance was because of the convenience of the ED itself (1,11,13,15,16,20). The studies that mentioned convenience pointed out that because of the opening hours of the ED where it is still available after working hours and during the weekend (11,15,18,20). Besides, they also considered that the ED was more convenient because it has all the facilities in one place where they do not have to move from one place to another to get different types of tests (1,20). Besides that, the patient's view of their urgency level also influenced their attendance at the ED.

There is a similarity of the patients that can be highlighted where most of the patients who attended the ED perceived their conditions to be more severe which may need urgent treatment and further investigations (13,17,20). Aside from that, insurance coverage and cheaper cost of treatment offered by the ED also play a role in influencing patients with non-urgent conditions to attend the ED. In a study by Bahadori et al. (21), the patients came to the ED mainly because of the cheaper cost of treatment.

However, other studies noted that insurance and cost of treatment were not considered as the main reasons for ED attendance (13,20). There were also other reasons such as longer waiting times at the primary healthcare centre (PHC), lack of trust towards the PHC healthcare personnel, perception hospital provides better care and others. To sum up, the main reasons why patients attend the ED were because of the convenience of operating hours and availability of facilities, perceived urgency and treatment needs and cost of treatment.

CONCLUSION

This review gave a clear picture of the availability of literature that discussed the patients' knowledge and understanding of the triage system, patients' expectation of priority when they came to ED and the reasons why the patients came to the ED. It also highlighted patients' expectations and experience of the triage system. This review showed that there are only a few studies that discussed the awareness of the triage system. Thus, this review designs the paths for future research in discovering their

awareness of the triage system in the ED. Besides, more studies about patients' awareness and knowledge of triage systems need to be done to provide a clear view of their knowledge of triage systems. Nevertheless, many important points in this review can be used to improve patients' knowledge of the triage system or ED and to reduce non-urgent attendance in the ED.

CONFLICT OF INTEREST

The author(s) declare there is no conflict of interest present.

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AUTHOR CONTRIBUTIONS

NAA: revised and edited the manuscript.

NAZA: investigate the literature and drafting the manuscript.

NIAR: reviewed the manuscript.

SMA: finalising editing of the manuscript.

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