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Triage process in Emergency Departments: an Indonesian Study

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ABSTRACT

Background: Triage process has rapidly developed in some countries in the last three decades in order to respond to the demand for emergency services by growing population and emergency health needs. However, this development does not appear to match in Indonesian hospitals. The triage process in Indonesia remains obscure.
Purpose: This study aimed to describe triage process in Indonesia from a range of different perspectives.
Methods: The research design of this study was descriptive qualitative using semi-structured interviews of 12 policy makers or persons responsible from 5 different organizations which informed triage practice in Indonesia. The data were analyzed using a three step content analysis.
Results: The result produced 3 themes. First, four steps of triage process ranging from receiving to prioritizing were reported as the triaging procedures in Indonesia which were almost similar to the international literature except for a re-triage step. Second, primary and secondary triage processes were also applied in all emergency departments in Indonesia. Last, no prolonged waiting time in Indonesia could be assumed whether the triage process was effective and efficient or it was only a quick process of sorting to rapidly increase the number of patients in the treatment rooms. Out of the themes, the result also indicated that the involvement of nurses in health policy development in Indonesia needed support
Conclusion: Triage process in Indonesia still needs improvements. Patient's re-triage and evaluating secondary triage should be given more frameworks in the future. An effective and efficient triage process in Indonesia will best manage the number of patients in the treatment rooms and therefore further observational researches on patterns and trends are needed. Moreover, including the role of nurses as policy makers in the curriculum of nursing undergraduate and post-graduate degrees would give nurses the evidence to seek out policy making positions in the future

Keywords: Triage process, emergency department, Indonesia, triage practice, waiting times

BACKGROUND

The triage process has become an important element of emergency care service since it is a continuous process which ensures that patients obtain a level of care appropriate to their clinical need and in a timely manner (FitzGerald, Jelinek, Scott, & Gerdtz, 2010). Prior to the 1960s, the emergency triage process was performed by doctors. However, nurses have taken this role from doctors in the last fifty years in the US (Lahdet, Suserud, Jonsson, & Lundberg, 2009). Nurses then have become the first health care professionals, especially in the US, the UK, and Australia to assess and prioritize the patients presenting to EDs, while physicians attend to the appropriate treatments in the next step of emergency care (Brown, Higgins, Bridge, & Cooke, 2001; College of Emergency Nursing Australasia (CENA), 2007; Nixon, 2008). The roles of triage nurses have developed markedly in line with the needs for immediate emergency care which requires rapid triage process, and the development of National Health Policies (Brown, et al., 2001; Funderburke, 2008; Nixon, 2008).

In addition to the expanding roles of triage nurses, the development of triage systems in some countries has increased significantly in the last three decades ranging from three to five triage scales (Cooper, 2004; FitzGerald, et al., 2010; Funderburke, 2008; Gilboy, Tanabe, Travers, & Rosenau, 2011; Lahdet, et al., 2009). A rapid and efficient process of these systems have been proven to generate some positive aspects in Emergency Departments (EDs), such as reducing overcrowding and patient waiting times; increasing immediate assessment, flow of patients, and patient satisfaction; improving patient outcomes and patient safety; and controlling infection (Augustyn, Ehlers, & Hattingh, 2009; Bruijns, Wallis, & Burch, 2008; Chan & Chau, 2005; Coughlan & Corry, 2007; Göransson & von Rosen, 2010; Woolwich, 2000). Funderburke (2008, p.181) also recommends that a shortened and focused triage process with standing orders for care initiation either by nurses or doctors can reduce admission and 'door-to-physician' times in EDs. Cooper (2004) and Funderburke (2008) point out that this process, a method to sort and prioritize the ED patients based on their clinical conditions, has become a research agenda in EDs.

On the other hand, this growth of triage process is not happening worldwide and for many countries including Indonesia, the development of emergency triage remains stagnant. According to the guideline of the triage system endorsed by the Ministry of Health in 1992 (Ministry of Health The Republic of Indonesia, 1999), the triage process includes receiving the patients, a primary and brief assessment, and triage decision making. Every patient presenting to EDs should be triaged. The implementation of triage process in EDs varies amongst hospitals according to the level of the emergency department, though the basic principle of the triage system is still the same within this guideline. The decree of the Minister of Health no 856/Menkes/SK/IX/2009 declares that emergency departments are classified into four levels which are level I, II, III, and IV ranging from the lowest to the highest. Each level has criteria of emergency services and human resources availability. These levels of EDs are closely related to the types of hospitals. Emergency department level IV should be owned by type "A" hospitals while type B hospitals should have emergency level III and so on. The decree also states that the triage room should be separated from other rooms for ED level II to IV. This triage

room contains simple equipment, stretchers, triage documentation, and colored tags (Minister of Health The Republic of Indonesia, 2009).

Even though there is a guideline of the triage process endorsed by the Ministry of Health in 1992, an evaluation of its implementation seems unlikely and has not been published. Little new information has been gained about triage systems in Indonesia in the 24 years since the decree of Health Minister regarding the guideline of the current triage system. There have been no published studies comprehensively investigating the triage systems including triage process in Indonesia. Consequently, the triage process in Indonesia is not clearly defined. Therefore, this study is needed to undertake in order to get better understanding of Indonesian triage process so providing a new perspective to the future development of the local triage system and its contribution to emergency health.

OBJECTIVE

This study aims to describe triage process in Indonesia from a range of different perspectives.

METHODS

The study was a descriptive qualitative research involving interviews with policy makers such as directors/ chairman, vice chairman, policy advisors, senior administrators, heads of installation, unit managers/ coordinators, heads of department/ division, heads of organizations or members of standing committees in the organizations from five different organizations which informed triage practice in Indonesia. The data reached saturation when twelve participants had already been recruited. The researchers had obtained ethics clearance and approvals from an Australian university and Indonesian authorities prior to data collection. The data were analyzed manually using content analysis to produce themes. The quality of the data had been established through member checking, peer debriefing and audit trail. However, only seven out of twelve participants provided the feedback for member checking.

RESULTS

The result showed that the majority of participants (n=8) were doctors and four participants were nurses. Content analysis resulted in 3 themes which were: triage procedure in Indonesian emergency departments consisted of receiving patients, assessing, deciding, and prioritizing; that two types of triage process implemented in all EDs in Indonesia were primary and secondary triage process; and no long waiting times, either pre-triage or post-triage waiting times, found in EDs in Indonesia except mass casualty incidents occurred.

Triaging procedure

All participants agreed that triage process occurred from patient's arrivals to prioritization according to their clinical conditions. This triaging procedure consisted of receiving patients, assessing, deciding, and prioritizing. Each process of the triaging procedures will be outlined in the following.

During the first process, two participants reported that emergency patients would meet trieurs and emergency helpers within five minutes from arrivals.

> "Triage process is started when patients arrive at the emergency departments. The triage officers will proactively pick the patients up at their arrivals … they do not just sit and wait for the patients to come …" (Doctor 5).
> "When the patients come, they will be accepted by triage officers and emergency helpers. They will come to the patients according to their conditions whether the patients need stretchers, wheelchair, or can walk." (Nurse 1)

Afterward, the patients would be assessed by trieurs through brief primary assessments which was called assessing process. The majority of participants reported that primary emergency assessments consisting of airway, breathing, and circulation examinations were commonly applied to the patients in this process. Two participants added other assessments which were levels of consciousness, general complaints, and medical histories. Trieurs usually used a form or checklist which included a set of assessments and the triage categories.

> "First of all, we will do anamnesis … just like common anamnesis … chief complaints and medical histories … and then physical examinations" (Doctor 4).
> "We use an emergency patient form which is consisted of colored labels of categories and an assessment format … when the patients arrive, they will be observed their level of consciousness; assessed their airway, breathing, and circulation functions; and asked their medical histories and chief complaints." (Nurse 2)

On the other hand, there were different implementations of vital sign assessments in triage. Two participants reported that vital sign assessments were done during triage.

> "Patients will be physically assessed their airway, breathing, and circulation status … their vital signs … during triage …" (Doctor 2).
> "Clinical urgency will be assessed during triage based on the assessment of vital signs." (Doctor 5).

However, one participant explained that these assessments were conducted in the treatment rooms since these assessments took time and needed proper equipment.

> "The assessment of vital signs … no, it will be done later … in the treatment room … not in the triage area … too long as it requires equipment." (Nurse 3).

Two other participants described that these assessments were part of triage activities though several conditions were applied, especially for blood pressure and temperature measurements.

> "Physical examination and vital sign assessment are done according to assessment format, for example respiratory … it can be assessed through inspection, look …

> and then heart rate and pulse were done by palpation. Assessments which do not need equipment yet can be done quickly." (Nurse 2).
> "In the triage area, a set of vital sign equipment has been prepared yet we need to look at the patients' condition … if they are false emergent patients, vital sign assessments can be carried out. However, if the patients are emergent patients, they will be directly brought to the treatment room without being assessed their vital signs." (Nurse 1)

Following the assessment, triage decision was made by trieurs. All participants described that the patients were sorted based on the data gained from assessment. The accuracy of triage decision would be depending on trieurs' ability and complete assessment data. The patients then were prioritized to one of four categories: red, yellow, green, or black and were sent to the related treatment rooms. This was called prioritizing. Once the patients were sent to the treatment rooms, this triage process ended.

Primary and secondary triage process

All participants pointed out that primary triage including assessing and prioritizing was the basic activities of triage in Indonesia. Nevertheless, there were some other additional activities done during triage process which were simple medications and simple interventions.

> "We usually provide simple medications in the triage area … such as antipyretics … to convince the patients that they have already got help and to relieve their pain …" (Doctor 2).
> "Basically, what we are doing during triage is pure assessment and prioritization. However, when the patients come and require emergency care then simple interventions can be given during triage, for example applying oxygen mask and administering oxygen therapy. On the other hand, laboratory and radiology examinations are rarely conducted during triage." (Nurse 3).

One participant explained that secondary triage was often conducted in type C and D hospitals as triage doctors in these hospitals were also working as emergency doctors. As a result, doctor's orders or treatments were done during the triage process.

> "Triage doctors are not given authorities to do any interventions related to airway, breathing, and circulation problems in teaching hospitals. They only sort and prioritize the patients. On the other hand, their authority is different in the lower level hospitals, such as type C and D hospitals as well as private hospitals. Since triage doctors in these hospitals are also emergency doctors, they commonly give interventions and treatments in the triage area. In other words, they have double jobs here … as triage doctors and as emergency doctors." (Doctor 2)

No prolonged waiting times

Related to the length of stay in EDs, all participants outlined that the maximum hours patients could stay in EDs were 6-8 hours.

> "Ideally, the patients can stay in the emergency departments for maximum 6 hours as the standard" (Nurse 3).

This duration was a standard of time endorsed by the Ministry of Health. However, this maximum length of stay could be extended to 1x24 hours, 2x24 hours, and 5x24 hours when access block happened. Furthermore, almost all participants described that the triage process commonly took less than 5 minutes and reported that there was no long pre-triage waiting time except mass casualty situation occurred.

> "The triage process is about 5 minutes … or less because the government states that the response time is maximum 5 minutes" (Doctor 2).
> "The standard says 5 minutes so we try to fit with that" (Nurse 4)

The majority of the participants reported that ED patients did not wait to obtain treatments after being triaged. The patient would be sent to the related treatment rooms based on triage decision without wait although the possibility to have overcrowding in the treatment rooms, especially label green, was high. However, they explained that long post triage waiting times and overcrowding in the treatment rooms were rarely happened in tertiary EDs as they had adequate nurses and doctors. On the other hand, the phenomena were likely to occur in the lower level EDs.

> "For the detail how long patients wait, it depends on the hospital and the availability of human resources…in the low level of EDs, how long patients wait will rely on the skill and the speed of triage doctors…but triage doctors generally are also emergency doctors in the low level EDs, so the patients will have to wait longer for treatments in these EDs." (Doctor 1)

DISCUSSION

The result showed that doctors dominated the positions of policy makers in emergency settings in Indonesia. This is supported by Shields and Hartati (2003) in their study regarding nursing and health care in Indonesia. They report that one problem in Indonesian health structure is the lack of nurses' status compared with doctors. Doctors dominate health services especially vital and powerful positions. The researchers suggest that nurse leaders should in the future seek to achieve key positions in organizations or government bodies to influence policy, services and as a result change their status and the status of nursing. Even though this study involved a small sample, it was noted that four nurses and eight doctors were in policy making positions and that the involvement of nurses in health policy development in Indonesia needed support as it did internationally. Nurses should ensure that they were invited to consult on policy making positions. Including the role of nurses as policy makers in the curriculum of nursing undergraduate and post-graduate degrees would give nurses the evidence to seek out policy making positions in the future.

Triaging procedure

The triaging procedure consisted of receiving patients, assessing, deciding, and prioritizing. These steps are almost similar to the six steps of triage process by Ganley and Gloster (2011) which start from establishing rapport at the initial contact to

monitoring and evaluation. However, there was no monitoring and evaluation step in Indonesian triage process since this step was no longer the responsibility of trieurs but emergency officers in the treatment rooms. According to the literature, patients' reassessment, especially those who are waiting for treatment, should be done periodically by trieurs for patient safety (Ganley & Gloster, 2011; Mackway-Jones, Marsden, & Windle, 2006). During the first step, triage officers who received the emergency patients were not only doctors and nurses but the helper also accepted them. This result was quite opposite with the literature. The literature points out that nurses and doctors are the responsible persons in triage process as trieurs. (Beveridge, 1998; Brown, et al., 2001; Bruijns, et al., 2008; Chan & Chau, 2005; College of Emergency Nursing Australasia (CENA), 2007; FitzGerald, et al., 2010; Gilboy, et al., 2011; Ng et al., 2010; Russ, Jones, Aronsky, Dittus, & Slovis, 2010). In the assessment step, the assessment techniques were almost similar to the assessments suggested by CENA in the ETEK (Figure 2). They consist of chief complaint, general appearance, airway, breathing, circulation, disability, environment, limited history, and co-morbidities (Department of Health and Ageing, 2007). However, there were different implementations of vital sign assessments in Indonesian triage. Vital sign assessment was not consistently conducted in triage process. According to the literature, the assessment of vital signs is important to carry out during triage. The ATS recommends assessing vital signs during triage process except blood pressure. However, the other vital signs, such as respiratory rate, work of breathing, heart rate, pulse, pulse characteristics, and conscious state should be conducted (Department of Health and Ageing, 2007). Assessing vital signs is also supported by Sieger, et al. (2011) who show that a high reference urgency of under-triage in children is caused by lack of vital sign assessment. Therefore, a systematic assessment is recommended. On the other hand, Gerdtz and Bucknall (2001) find that objective physiological data, such as vital signs are rarely used by nurses to decide patient category. Therefore, trieurs should be encouraged to conduct vital sign assessments during triage process.

The triage assessments in Indonesia

1. Airway, breathing, and circulation assessments
2. Level of consciousness
3. Chief complaints
4. Medical histories
5. Vital sign assessments

Figure 1. The summary of triage assessment in Indonesia

Primary and secondary triage process

Even though primary triage process was the main process in Indonesia, the secondary triage, such as simple medication and interventions, was also conducted in EDs. This phenomenon might happen due to dual responsibilities of doctors as triage doctors and emergency doctors in EDs of type C and D hospitals. Apart from this reason, the literature also describes a broad use of secondary triage which contains additional triage activities during triage process beside sorting and categorizing. They include

administering simple medications, ordering x-ray and laboratory examination, providing prescriptions and procedures, requesting bed and referring (Brown, et al., 2001; Cronin & Wright, 2005; Lindley-Jones & Finlayson, 2000a, 2000b; Nixon, 2008). Even though these activities may improve the triage process, Brown, et al. (2001) still recommend future studies to evaluate this expanding triage process.

No prolonged waiting times

Long waiting times, either pre-triage or post-triage waiting times, were not found in EDs in Indonesia except mass casualty incidents occurred. The Ministry of Health also set 5 minutes of maximum response time for ED patients (Minister of Health The Republic of Indonesia, 2009). This meant that all patients presenting EDs regardless their urgency should have initial contact with health care professional or trieurs within 5 minutes from arrival. Consequently, patients might not need to wait to be triaged though this response time seemed too long for patients who needed resuscitation. On the other hand, considering a high number of ED presentations in Indonesia yet limited ED resources, some problems such as long waiting times and overcrowding should potentially be yielded. However, they were not reported by the finding. This finding was surprisingly different with the literature. According to the literature, long ED waiting times and overcrowding are likely to happen when a number of ED presentations are high (Quattrini & Swan, 2011). In order to solve these problems, a rapid and effective triage process should be applied. It has been proven to reduce ED overcrowding and long waiting times (Bruijns, et al., 2008; Quattrini & Swan, 2011). No prolonged waiting time in Indonesia could be assumed whether the triage process was effective and efficient or it was only a quick process of sorting to rapidly increase the number of patients in the treatment rooms. Little information is gained regarding this. Therefore, further observational research is needed to explore the triage process in Indonesia.

This study had two limitations that should be addressed. First, the results of this study only represented the participants' experiences without attempting general findings so these results might not be generalized to all EDs in Indonesia. However, some participants had broad experiences of triage practice in many EDs throughout Indonesia. Therefore, the findings were likely to describe the current triage system in EDs in Indonesia. Second, a possible bias could be related to the participants as two thirds of the participants were doctors. The results would possibly voice the doctor's view. However, it was very important that all participants' insights are acknowledged and reported.

CONCLUSION

In conclusion, four steps of triage process ranging from receiving to prioritizing were reported as the triaging procedures in Indonesia which were almost similar to the international literature except for a re-triage step. Primary and secondary triage processes were also applied in all emergency departments in Indonesia. No prolonged waiting time in Indonesia could be assumed whether the triage process was effective and efficient or it was only a quick process of sorting to rapidly increase the number of patients in the treatment rooms. Also, the involvement of nurses in health policy development in Indonesia still needed support. Therefore, the study recommends patient's re-triage and evaluating secondary triage to be given more frameworks in the

future, an effective and efficient triage process in Indonesia to best manage the number of patients in the treatment rooms, further observational research on patterns and trends of triage process, and to include the role of nurses as policy makers in the curriculum of nursing undergraduate and post-graduate degrees.

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