

Factors Affecting Waiting Time and Patient Satisfaction in the Emergency Department Triage: A Systematic Review

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ABSTRACT

Introduction

Emergency Department (ED) has to handle problems within a short time to reduce morbidity, disability and mortality, which may also affect the burden of health care cost. A fast response time is required from staff in ED while hospital environment should be arranged well to increase patient satisfaction. This systematic review aim was to determine the satisfaction of waiting time among patients in emergency triage room.

Methods

These systematic reviews was conducted by searching and analyzing all eligible studies from electronic database PubMed and Science Direct. Study eligibility data were original research, patients in the emergency room who passed triage and their experience in ED.

Results

Six studies between 2010-2016 were analyzed. These study examined about the satisfaction of waiting time among patients in emergency triage room. The results showed that patient satisfaction was influenced by many factors affecting waiting time and the intervention types administered during the waiting time. Patients with not urgent condition had a long wait time. Patient should understand how triage carried out to avoid misunderstandings. Other factors included triage room design, in which the visual art could lead to make patients more relaxed. The difference African-Americans and whites also affect waiting time in triage. However, changing formation of health personnel in triage have not much impact on patient satisfaction.

Conclusion

For future research, mindfulness should be used to improve patient waiting time and patient satisfaction by measuring three dimation of service quality including quality of interaction, physical environment and patient outcome.

Keywords

Patient Satisfaction; Waiting Time; Triage; ED

BACKGROUND

Emergency Department (ED) is an important component in a hospital where the ED is one of 21 types of services that must be available (minimum service) that must be there to achieve a Minimum Service Standard (SPM) in a hospital and as a condition of permission to set up a hospital (1). One indicator that can be used as a reference for emergency care is how quickly health workers can handle patients in order to reduce disability and reduce mortality both in the hospital and at the time of disaster. When staff cannot sort patients in triage appropriately

based on their priorities, this will have an impact on patient density / overcrowding (2), the success rate of response time is also influenced by the quality of providing treatment, not only fast but also accurately (3). Patients who were admitted on days with high ED crowding experienced 5% greater odds of inpatient death , longer hospital length of stay and 1% increased costs per admission. Periods of high ED crowding were associated with increased inpatient mortality and modest increases in length of stay and costs for admitted patients, It can be concluded that the patient waiting time and overcrowding not only harm the patient and staff on ED but also when outside the IGD (4).

The ED is required to be quick in handling to reduce morbidity, disability and death, in this case it will also affect the costs incurred (5). To reduce morbidity, disability and death, a rapid response time is needed from health workers in the emergency room, where the minimum mortality rate that must be reached in the ED since the patient arrives until the next 24 hours is ≤ 2 thousand, while for minimal response time what must be achieved by health workers is ≤ 5 minutes since the patient comes to be served by health personnel in the emergency room (1). A leadership-based program to reduce admit wait times and boarding times was associated with a significant increase in the percentage of patients admitted to the hospital within 60 minutes and a significant decrease in boarding time. Also associated with the program were decreased ED LOS and ambulance diversion, as well as increased patient satisfaction. The leader must immediately correct this quickly, by working well with other staff this can be resolved. A leadership-based program to reduce admit wait times and boarding times was associated with a significant increase in the percentage of patients admitted to the hospital within 60 minutes and a significant decrease in boarding time. Also associated with the program were decreased ED LOS, LWBS rate, and ambulance diversion, as well as increased patient satisfaction (6). Overview of Emergency Service Response Time in Indonesia are shown in table 1 that some hospitals in Indonesia are unqualified in patient waiting time on ED (7).

Table 1. Overview of Emergency Service Response Time in Indonesia

No	Hospital	Average Respon Time	Hospital Minimum Service Standards	Category	Research Source
1.	RSUD. Bantul	10 Menit	5 Minutes	Unqualified	Permenkes Nomor 129/Menkes/SK/II/2008
2.	IGD RS. Cipto Mangunkusumo	8 menit 20 Detik	5 Minutes	Unqualified	Sabriyati (2009)
3.	IGD RSUP Prof Dr. R. D. Kandou Manado	> 5 menit	5 Minutes	Unqualified	Maatilu (2014)

Response time can be influenced by various things including in hospital management, types of services, human resources, facilities and infrastructure in the hospital. This is a factor that can underlie the speed of response time in the ED. Response time is categorized as fast if the response time does not exceed 5 minutes and is categorized as slow if the response time is more than 5 minutes (5).

In 2013 the hospital response time with one of the best igd in Indonesia reached 11 minutes, this unqualified from the minimum service standards (8). Patient satisfaction is also adversely affected by ED crowding and admit wait time delays (9,10). Therefore, reduce morbidity, disability, death and satisfaction is to treatment immediately during emergency medical treatment in ED, not only quickly but also precisely. ED is a service that plays an important role that "time saving is life saving" that is time is life (11). A study revealed that patient satisfaction is not only measured by waiting time, the importance of the dimensions of service quality to customer satisfaction is divided into three dimensions, namely the quality of interaction, the quality of the physical environment and the quality of results (12). The solution to solving the above problems is to find out the factors that determine the satisfaction of patient waiting times in emergency triage room.

METHODS

Research questions for selecting journals in this study are population, intervention, comparison intervention, and outcome. The population is patients who are in the emergency room who passed triage and need health facilities in the hospital. The intervention is to find out the factors that influence the response time and patient satisfaction in the ED triage. The comparison intervention is the factor that influences waiting time and patient satisfaction in IGD triage. The outcome is to look for predictors of factors that affect waiting time and patient satisfaction related to the formation of the triage team. The elimination method used is using the prism method with the sciendirect and pubmed database sources. Keywords used are Patient satisfaction, Waiting Time, Triage and ED, obtained 50 articles.

RESULTS

The initial search identified 50 articles. 20 articles have similarities and are eliminated. 20 articles are considered potentially relevant and evaluated in full text. Finally 6 articles were selected. Flowchart of literature research and study selection are shown in figure 1.

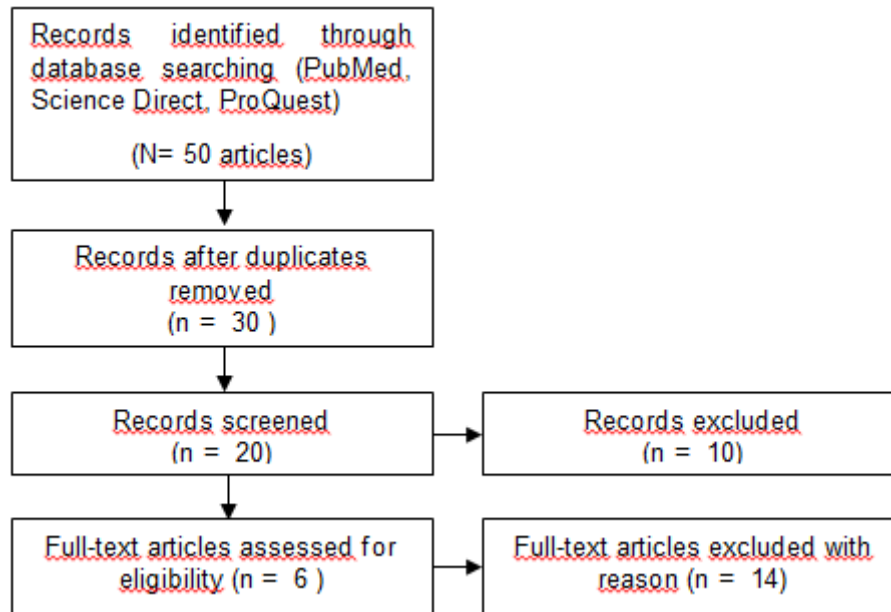


Figure 1. Literature research and study selection

Factors that affect waiting time and patient satisfaction

The first 3 articles about the effect of interventions given during waiting time. The study in 2016 said that the severity can affect the patient's perception of waiting time, patients who have low levels of emergency, the average age of patients is <25 years with the most frequent incident is musculoskeletal problems. The decision-making process of patients is found to be influenced by the comfort, needs and referrals provided by health care providers. Thus further consideration is needed on how best to fulfil the service demands in order to facilitate the provision of appropriate services at the right time to the right patient (13).

The second study, also in the same year, said that the lack of bed can be a factor that affects the patient's waiting time, besides that the longest waiting time is 30 minutes which is influenced by the length of stay the patient in the ED. Therefore the queue in the waiting room due to lack of ED beds is a significant predictor factor (14).

The third study in 2010 that examined triage waiting times, populations taken in several hospitals in America with emergent and urgent patient, found that the higher the patient's severity, the faster the patient will be treated. The average waiting time is 27.5 minutes (19 to 40 minutes). The average duration of visits to the ED was 4.3 hours (3.3 hours to 5.6 hours) for patients with treatment and 2.3 hours (1.9 hours to 2.9 hours) for patients who were discharged. Finally, the study found that American hospitals had relatively poor performance in waiting times and long ED visits for their most acute patients (15).

Intervention that affect waiting time and patient satisfaction

Three other studies that discussed the effects of interventions given on waiting times. The first study in 2013 said that the formation of health workers in triage did not affect patient waiting times, this suggests that specialist emergency nurses were adequately trained in triage and delays in the triage process at the hospital. In this study, the patient's overall waiting time in

the ED was not significantly influenced by the triage process but was influenced by factors after triage. The waiting time experienced by fast track patients in a hospital is between 3 and 6 hours. The average waiting time at another hospital decreases from 3.95 hours to 2.4 hours after the triage nurse is trained. Registration times and patient queues at certain times may have a significant impact on waiting time. The study says that a very slow registration process and an important non-invasive monitor to assess vital signs and help the triage process sometimes not work, however these factors were not included in this study (16).

The second study in 2011 said that the waiting room design will also affect patient satisfaction where there is a significant decrease in anxiety, noise levels, and people who look at other people in the waiting room. In the study showed through systematic behavioral observation, that providing evidence-based positive distraction can influence the experience of patients by reducing anxiety (which can be an indicator of patient anxiety and stress), reduce people's observation (which has implications for privacy), and increase socialization (which can increase social support). Using positive distractions such as showing good natural and artistic videos, not loud TV sounds, can also help reduce noise levels and improve the mood of patients, which has implications for patient and staff satisfaction. Therefore, it can be concluded that simple visual interventions such as silent art and video can improve the patient's waiting experience at ED (17).

The third study conducted in 2015 said that the difference between African-Americans (AAs) and white people can also affect. In this study it was found that the persistent difference in waiting time in the ED was between AAs and white people. Disparities in the ED as measured by the waiting time for AAs still exist and there has been no improvement from time to time. The waiting time for AAs (median, 33 min) was statistically longer compared to whites (median, 21 min). In addition, the adjusted waiting time for AAs was 30% longer compared to whites. The latest report published by the Healthy People 2010 (One of the Healthy People's 2010 goals was to eliminate racial disparities in the US health system), which assessed the progress of the initiative, revealed racial and ethnic differences in insurance levels and the level of people with care sources. Specific sustainability among all ages. In particular, whites have better health insurance rates and specific sustainable care sources compared to other ethnic groups, and this difference does not change during the period evaluated. Another important indicator to improve access to care is the timeliness of service. The Healthy People Organization 2010 cannot evaluate the purpose of delays or difficulties in obtaining emergency care due to lack of data (18).

DISCUSSION

Factors that affect waiting time and patient satisfaction

There are many factors that influence waiting time in triage which can affect the level of patient satisfaction, one of which is the level of patient emergency. Patients with a low level of emergency (non-urgent) will tend to have a long waiting time, this is because in the patient's triage system the emergency patient is the priority. Urgent patients have faster waiting time than non-urgent patient, the fastest is an emergency patient. This is normal, but the patient must

understand how triage works to reduce misunderstanding between the patient and the triage officer regarding the waiting time. Lack of beds can also be a factor that affects the patient's waiting time, besides the longest waiting time reaches 30 minutes which is influenced by the length of stay the patient in the ED. The availability of ED beds is a significant predictor, given the results of the study, the waiting room of the ED should be managed by more than just triage nurses who have many competing responsibilities, This will optimize results, although only a few published studies support the benefits of this role.

Intervention that affect waiting time and patient satisfaction

Another factor that can influence patient satisfaction in waiting time in triage is the triage room design, as evidenced by the presence of visual art, the patient will be more relaxed. The difference between AAs and whites also affects the waiting time in triage, therefore further research is needed to investigate the underlying reasons for unequal care performed by nurses in AAs patients in the ED. Changes in the formation of health workers in the triage room do not have much influence on patient satisfaction. This shows that emergency specialist nurses are adequately trained to triage quickly and accurately.

There are some limitations that may slightly affect the result, the article used in this study was not too much so that the results given were not optimal.

CONCLUSIONS

The importance of the dimensions of service quality to customer satisfaction is divided into three dimensions, namely the quality of interaction, the quality of the physical environment and the quality of results. Interaction is the patient's experience of service from the hospital, with gestures that differentiate race will reduce the level of patient satisfaction. The Physical Environment is the physical structure of the building, floor, cleanliness, interior and exterior, relaxation videos with no noise that can make the patient relax. The results are the result of the services provided by the hospital, which is the waiting time, a good patient experience in obtaining services can provide good experiences for patients that can improve patient satisfaction.

Declarations

Authors' contributions

In this article, author has its own contiburion. Manggar Purwacaraka as main author and writing of this article

Ethics approval and consent to participate

Not applicable

Consent for publication

Not applicable

Availability of data and materials

There is no data that needs to be shown because this type of research is a systematic review

Competing interests

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