



# Effectiveness of Implementing Nursing Intervention Health Education About Triage on Patients' Families in The Emergency Room Hospital

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## ABSTRACT

The Emergency Department is the leading health service in a hospital institution, providing initial assistance to patients based on the triage concept. A lack of understanding of the concept of triage is one of the factors that cause dissatisfaction with services in the Emergency Department. The research aims to determine the effect of health education about triage on the level of satisfaction of families who come to the Rekso Waluya Hospital Emergency Room. The research design used a quasi-experimental with a post-test only with a control group research design, which involved randomly dividing subjects into control and experimental groups. The total research sample was 50 respondents, with purposive sampling used. The instrument for this research is an educational satisfaction questionnaire sheet regarding triage. The study results showed that families' satisfaction in the ER at Rekso Waluya Hospital regarding triage in the control group was mainly quite satisfied (52%). In the experimental group, the majority were satisfied after being given health education about triage (56%). The results of the Mann-Whitney analysis obtained a significance value of 0.000 ( $p < 0.05$ ), which shows that there is an influence of health education about triage on the level of satisfaction of patient families in the ER at Rekso Waluya Hospital, Mojokerto. The importance of providing health education for families and patients regarding the triage process can provide an overview and understanding, so that satisfaction with services can increase, avoid excessive complaints, and ensure that services in the emergency room will not be disrupted.

**Keywords:** Education, Emergency, Satisfaction, Triage

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## I. INTRODUCTION

Emergency Department (ER) services spearhead the medical response for

patients in critical condition requiring immediate treatment. One key component is triage, prioritizing patients based on

their level of urgency. However, many patients' families do not understand this mechanism, potentially leading to dissatisfaction and conflict with healthcare workers. A lack of understanding among patients' families regarding the implementation of the triage system can be a contributing factor to their dissatisfaction with ER services, leading them to believe that doctors, nurses, and other medical personnel are uncaring, unresponsive, and neglectful of their patients (Pakaya, 2022). The minimum standard for customer satisfaction in emergency services is  $\geq 70\%$  (Ministry of Health, 2008). This guideline mandates that emergency services consider customer satisfaction indicators as a determinant of successful service quality. Therefore, increasing understanding and improving patients' and their families' perceptions and satisfaction with ER services is crucial.

Based on data from the National Health Service England (2018) in the United Kingdom in 2017, the number of patient visits to the Emergency Department was estimated at more than 23.7 million. Data shows that the number of patients visiting the Emergency Department in Indonesia reached 4,402,205 in 2017 (Ministry of Health of the Republic of Indonesia, 2019). During the COVID-19 pandemic, the number of

patient visits to the Emergency Department increased to 15,786,974 patients (East Java Health Office, 2021). Based on a preliminary study conducted by researchers at the Emergency Department of Reksa Waluya Hospital, Mojokerto, data on patient visits from January 2024 to May 2024 amounted to 5,392. Initial results of interviews conducted with 10 patient families in May 2024 at the Emergency Department of Reksa Waluya Hospital, Mojokerto, of the 10 patient families, 2 of them said they were dissatisfied because they felt they were not treated well due to the long wait for further action.

According to family observations, the patient appeared anxious, with a tense facial expression, restlessness, pacing, and confusion. The family also reported a lack of understanding of the emergency room's triage priorities. Efforts to improve patient family satisfaction with triage services include providing information about triage services in the ER to families through health education. Providing health education about the triage process in the ER for families and patients is crucial. This aims to provide an overview and understanding of the process, thereby increasing service satisfaction and preventing excessive complaints, which can disrupt ER services (Pakaya, 2022).

Health education is a nursing intervention outlined in the Indonesian Nursing Intervention Standards (SIKI), which includes observation, therapeutic, and educational measures to teach families about the Emergency Department (ED) triage system, thereby increasing patient family satisfaction. The media used in this health education are leaflets. Leaflets are a form of educational print media that has been proven effective in increasing patients' and their families' knowledge, understanding, and satisfaction, especially in health education in the Emergency Department (ED).

This intervention improves patient satisfaction and strengthens nurses' roles as communicators and educators in the emergency department (ED) care system. This intervention model is expected to be integrated into standard operating procedures (SOPs) for hospital triage services and become evidence-based nursing practice. By building effective communication and family understanding through health education, the quality of emergency care will be improved.

## 2. METHODS

This research design uses an experimental type of quasi-experimental design with a post-test only research design with a control group. The study

aimed to determine the effectiveness of health education about triage on the satisfaction of families who come to the Emergency Room of Reksa Waluya Hospital, Mojokerto City. The population of this study was all families of patients in the Emergency Room of Reksa Waluya Hospital, Mojokerto City. A purposive sampling method was used to obtain a sample of 50 respondents. The independent variable of this study is triage health education, and the dependent variable is patient family satisfaction. The research instrument used a family satisfaction questionnaire about triage. After the data was collected, Editing, Coding, Scoring, and Tabulating were carried out. Furthermore, it was analyzed using the Mann-Whitney statistical test. This study has also been declared ethically feasible by the KEPK STIKES Majapahit Mojokerto institution based on number 113 / EC-SM / 2024.

## 3. RESULTS

This study was conducted at the Emergency Room of Reksa Waluya Hospital in Mojokerto. Data were presented in univariate and bivariate analyses. Univariate analysis was used to analyze the variables descriptively. In contrast, bivariate analysis was used to determine the effectiveness of health

education about triage on the satisfaction

level of families visiting the Emergency

Room.

Table 1. Respondent Characteristics

Characteristics	Control Group		Intervention Group	
	f	%	f	%
Age				
Late adolescence (17-25 years)	3	12	0	0
Young adulthood (26-35 years)	7	28	6	24
Late adulthood (36-45 years)	6	24	9	36
Early elderly (46-55 years)	5	20	6	24
Late elderly (56-65 years)	4	16	4	16
Gender				
Male	14	56	12	48
Female	11	44	13	52
Education				
Elementary School	2	8	0	0
Junior High School	7	28	1	4
High School	11	44	9	36
University	5	20	15	60
Occupation				
Not Working	4	16	2	8
Farmer	7	28	0	0
Self-Employed	7	28	6	24
Private Employee	6	24	13	52
Civil Servant	1	4	4	16
Relationship				
Family Children	5	20	4	16
Siblings	6	24	4	16
Husband/Wife	6	24	10	40
Parents	8	32	7	28
Emergency Room History				
Never	14	56	6	24
Ever	11	44	19	76
Triage Label				
Black	4	16	0	0
Red	1	4	3	12
Yellow	11	44	15	60
Green	9	36	7	28

Table 1 shows that most of the respondents in the control group were in early adulthood, while the intervention group was in late adulthood. Most of the

respondents in the control group were male, while the intervention group was female. The educational level of the control group was mostly high school graduates or

equivalent, and those in the intervention group were college graduates. In the control group, most worked as farmers and self-employed equally, while the intervention group had private jobs. Most of the respondents in the control group were parents of patients, while the intervention group were married couples. Based on previous experience of being treated in the emergency room, most of the control group had never been treated. In

contrast, those in the intervention group had been treated in the emergency room. Based on the triage label, the control and intervention groups were labeled yellow, meaning patients with critical conditions, but not immediately life-threatening or urgent. A yellow code means the patient requires immediate medical attention, but treatment can still be delayed compared to patients labeled red (emergency).

**Table 2.** Differences in patient family satisfaction in the control group and the intervention group after providing health education nursing interventions on triage in the Emergency Room of Reksa Waluya Hospital, Mojokerto

Patient Family Satisfaction	Control Group		Intervention Group		p-value
	f	%	f	%	
Quite satisfied	13	52	2	8	0.000
Satisfied	10	40	14	56	
Very Satisfied	2	8	9	36	
Total	25	100	25	100	

Table 2 shows that most of the respondents in the control group were satisfied with the quite satisfied category, while in the intervention group, most of them were satisfied with the satisfied category after providing health education nursing interventions about triage in the Emergency Room of Reksa Waluya Hospital, Mojokerto. The results of the Mann-Whitney test obtained a p-value of 0.000, which means that health education about triage effectively increased patient families' satisfaction in the Emergency

Room of Reksa Waluya Hospital, Mojokerto.

#### 4. DISCUSSION

The study results showed that most families of patients in the control group were quite satisfied with the implementation of the triage system in the Emergency Room of Reksa Waluya Hospital, Mojokerto. This was influenced by the fact that 14 respondents (56%) had never been treated in the Emergency Room of Reksa Waluya Hospital, and the majority of the respondents were male,

totaling 14 respondents (56%) with an age range of 26-35 years, or almost half, namely 28%. The results of a study by Kyle et al. (2021) showed that overall satisfaction and hospital recommendations were higher in men than in women (84.5%). This indicates that men were consistently more satisfied with the service. The results of a study by Aljarallah et al. (2022) showed that young adults were more satisfied than the elderly with health services in hospitals. The results of a study by Wang et al. (2022) showed that patients who had been treated previously had more realistic expectations and adjusted their service standards based on previous experiences, which influenced satisfaction levels. Patients with previous experience of being treated tended to report higher satisfaction.

The study's results on the intervention group given health education nursing interventions on triage showed that most respondents were satisfied with the triage system services in the Reksa Waluya Hospital Emergency Room (56%). This is supported by the respondents' characteristics and the intervention's effectiveness. Based on the characteristics of the respondents, it shows that most were women (52%), in late adulthood (aged 36-45 years), and 11 respondents (44%) had a high school education. In this

experimental group, almost all had visited and received treatment at the Reksa Waluya Hospital Emergency Room in Mojokerto, namely 19 respondents (76%) in the yellow triage category.

Related studies show that female gender significantly correlates with satisfaction with ED services. Furthermore, higher age is generally associated with greater satisfaction with ED services (Fontova Almato et al., 2019). Studies have shown that education level is inversely related to patient satisfaction: the higher the education level, the lower the reported satisfaction. Patients with higher education have greater expectations and higher levels of health literacy, making them more critical of service quality (Yilmaz et al., 2023).

The increase in patient family satisfaction after health education was provided was due to the effectiveness of the health education intervention using the Indonesian nursing intervention standard approach from PPNI and the leaflet media used. Health education focused on triage is an effort to provide information to patient families regarding emergency priorities to increase knowledge and good practices of individual patient families and influence the values, beliefs, and attitudes of respondents so they can make changes in understanding health (Asniar et al., 2020).

Therefore, the results of providing health education about triage in identifying readiness and ability to receive information, it is hoped that satisfaction with services can increase, and avoid excessive complaints, which can cause disruptions in services in the ER (Pakaya, 2022).

Based on the results of this study, the results obtained with a p-value of 0.000 with an average of 18.76 in the control group and 32.24 in the experimental group showed a difference in the average value of 13.48. By referring to the SIKI PPNI health education, the health education method is very effective. The results of related studies show the effectiveness of health education about triage for families, because most patients and families do not understand the triage system when they arrive at the ER. However, they expressed a strong desire to receive more information regarding the triage system, length of waiting time, and the logic of prioritization, so that providing education about triage can improve the overall experience and satisfaction of patient families in the ER (Fekonja et al., 2024).

The effectiveness of health education with leaflet media is by the results of the study by Sangal et al., (2019), respondents who received education with leaflets/pamphlets explaining triage,

waiting flow, discharge procedures, etc.), significantly better understood what to expect in the ER compared to the control group, so that this increased understanding can positively affect the patient experience. This statement is also in line with previous researchers quoted from the Elida Sinuraya Journal (2019) regarding the influence of education with leaflet media on the level of nurses' knowledge about triage, saying that providing education using leaflet media is proven to be more efficient in increasing a person's knowledge.

Based on the results of the Mann-Whitney test, a p-value of 0.000 was obtained, which means p-value <0.05, so there is an effect of health education about triage on the level of satisfaction of patient families. According to the results of the study by Janerka et al (2024), the provision of health education by nurses can provide clear information and effective communication during the triage process, significantly affecting the experience of patients and their families, thus making patients and families satisfied with triage services in the ER.

## 5. CONCLUSION

The results of this study indicate a difference in family satisfaction with triage services in the Emergency Room of Reksha Waluya Hospital, Mojokerto, namely in



the control group, most showed quite satisfied (52%), and in the intervention group, after being given health education nursing interventions about triage using the SIKI PPNI guidelines showed family satisfaction in the satisfied category (56%). This shows that health education nursing interventions about triage are effective in increasing patient family satisfaction in the Emergency Room of Reksa Waluya Hospital, Mojokerto with a significance value of  $p$ -value: 0.000. For Reksa Waluya Hospital, it is expected to improve the ability of nurses in effective communication, especially in providing information to patients and families which has an impact on patient satisfaction and also the quality of service in the hospital.

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#### AUTHOR CONTRIBUTIONS

Siti Rachmah was responsible for conceptualization, methodology, formal analysis, original draft writing, supervision, and project administration. Nurul Mawaddah, contributed to data curation, article screening, data extraction, manuscript review and editing, and visualization. Tri Atma Wijaya worked on

methodology, formal analysis, manuscript review and editing, and visualization.

#### CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

#### DATA AVAILABILITY STATEMENT

The data are not publicly available due to privacy or ethical restrictions.

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