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THE ASSOCIATION BETWEEN COGNITIVE FUNCTION AND EMERGENCY DEPARTMENT LENGTH OF STAY IN ELDERLY PATIENT

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ABSTRACT

Background: The number of elderly people in the world has increased significantly. Older age will be more health problems therefore elderly need care in hospital. One of the main hospital entrance is Emergency Department (ED). Characteristic of care in ED is patient handling quickly and precisely. The presence of Length of Stay (LOS) that extends in the ED gives a negative impact on patients, hospitals, and medical personnel. One factor that is believed to affect LOS is cognitive function. **Aim:** The purpose of this study was to determine the relationship between cognitive function with LOS in elderly in ED **Method:** This study is an observational study. The data were collected in February - March 2018 at ED of dr. Soedono Madiun Hospital, East Java, Indonesia. The data taken is the cognitive function as an independent variable. LOS as a dependent variable is measured by calculating the time between admission and exit from the IGD. To identify the relationship between the two factors, Spearman analysis was used. **Results:** No prolonged LOS was found in this study. Bivariate analysis showed that there was significant correlation with $p < 0.05$ between cognitive function and LOS in elderly. **Conclusion:** Cognitive function has a significant relationship with LOS in elderly patients at ED of dr. Soedono Madiun Hospital.

KEYWORD: Cognitive, LOS, Elderly, Emergency Department.

INTRODUCTION

The number of elderly people in the world has increased significantly. World Health Organization (WHO) states that in 2015, the number of elderly people in the world reached 900 million people. The figure is predicted to continue to increase in the next years where by 2020 it is estimated that the number of elderly will be more than the number of children under five, and it is possible in 2050, about 80% of elderly will live in middle income countries.[1] In Indonesia the number of elderly is estimated to reach 18.1 million people or about 7.67% of the total population of Indonesia. This figure increases in 2014 to 18.78 million people, and in 2015 increases to 21.5 million people.[2.3]

Emergency Department (ED) as the main entrance of hospital services has an important role in the health services of patients, including elderly patients. One of the functions and objectives of ED in the handling of the elderly is to recognize the elderly condition so that it can be decided whether the patient should be inpatient or outpatient.[4] Elderly patients in the ED had a mean Length of Stay (LOS) longer of about 20% and required more investigation of 50% than those at younger ages.[5]

Early screening of the elderly who goes to the emergency department needs to be done. This is to anticipate the existence of elderly health problems that are not detected. When the elderly health problems are undetectable, various consequences may occur such as high risk of deteriorating health conditions such as delirium, cognitive dysfunction, readmission to the ED, death. until increasing LOS.[6] Length of Stay (LOS) numbers in ED are used to assess patient density and clinical performance of health personnel. LOS in the ED was measured from the onset of the patient's arrival to the patient's transfer either out of the hospital outpatient or transferred to the treatment room.[7.8] Many factors affect LOS elderly patients in the ED. One factor that is believed to affect LOS in elderly patients is cognitive function.

METHOD

This study is a quantitative study by observing the independent variables of cognitive function assessed by asking whether the patient is able to remember the day, date, year, and whether the patient is able to spell the word in reverse. The answers are then classified into two in which elderly patients experience cognitive impairment or not. Length of Stay (LOS) in elderly patients as the dependent variable was measured from the admitted patient to exit from the ED. This study took place at the ED of dr. Soedono Madiun Hospital in February 2018 until March 2018.

The number of samples in this study was 120 elderly patient. The sample is determined by consecutive sampling technique. The inclusion criteria in this study were all elderly patients aged over 60 years with priority level 2 and priority level 3. Exclusion criteria in this study were elderly patients who refused treatment. To identify the relationship between the two variables, Spearman Rank's analysis was used using SPSS for windows version 21.0.

RESULT

General Characteristic Distribution.

Table 1.1: Distribution of Respondent Characteristics by Age Group.

	Characteristics	Frequencies	Percentage
Age (years)	60 - 74	96	80
	75 - 90	22	18.3
	>90	2	1.7
Gender	Male	57	47.5
	Female	63	52.5
Triage Urgency	Medium	58	48.3
	Low	62	51.7

From the table can be informed that most of the respondents were in the elderly age group (60 - 74 years), and few respondents were in the old age group (75 - 90 years) and very old (> 90 years). The level of triage of respondents in this study has a sufficiently balanced number between the priority 2 and the priority 3. As well as the gender of the respondents shows a balanced amount between men and women

Table 1.2: LOS Characteristic in ED dr. Soedono Madiun Hospital.

LOS	Frequencies	Percentage
Normal (< 4 hours)	120	100
Prolonged (≥ 4 hours)	0	0
LOS	Duration (Minutes)	
Minimum	25	
Maximum	178	
Average	77.88	

Based on table 1.2 shows that no prolonged LOS was founded on all respondents. Meanwhile, when viewed from the duration, LOS elderly patients in the ED has a minimum value of 25 minutes and maximum 178 minutes with an average of 77.88 minutes.

Table 1.3: Spearman correlation test results between cognitive function with LOS.

	Length of Stay	
Cognitive Function	P- value	R
	0.009	-.225

Table 1.3 Spearman test results between cognitive function and LOS.

Table 1.3 shows the relationship between cognitive function and LOS. The results showed that cognitive function has a significant relationship with LOS. The significance value between the two variables is 0.009 or less than 0.05 and the negative correlation is -0.225. From these results can be interpreted that patients who experience impaired cognitive function, then the LOS will be longer.

DISCUSSION

Cognitive function has a significant relationship with LOS in elderly patients in ED of dr. Soedono Madiun Hospital. Previous research that specifically analyzed the relationship between the two variables has not been found. One similar study in 2017 that analyzed the relationship between dementia and LOS Hospital in elderly patients the study states that dementia has a significant relationship with Hospital LOS. Patients with dementia in the study were found to have a longer Hospital LOS than those without dementia.[9]

Assessment of cognitive function is recommended in elderly patients. according to the review guide of elderly patients who state that early cognitive impairment detection can identify treatable conditions, such as ischemic brain disease. This allows the medical team to prevent worse disease conditions experienced by elderly patients. Early detection can also help medical team, patients, and families to plan for further care and treatment. Therefore the cost of care can be minimized.[10,11]

The presence of cognitive dysfunction will have a negative impact on patient care. Such is the case with the treatment process in the ED. Patients with impaired

cognitive function will be more difficult to communicate, especially during the assessment of health history, SAMPLE assessment (Sign and Symptoms, Allergies, Medication, Past Illness, Last Meal, and Events), and so on. Difficulties in this assessment phase will have an impact on subsequent nursing processes. So if one of the nursing process is experiencing difficulties, then the next process will also be disrupted so that it can result in lengthening of the LOS in the ED.

CONCLUSION

No prolonged LOS was found in elderly patients at dr. Soedono Madiun ED. Cognitive function has a significant relationship with LOS in ED. Assessment of cognitive function is highly recommended for elderly patients who visit ED.

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