

## Profile of Knowledge on Stroke among Paramedics at Jatinangor and Tanjungsari Public Health Centers

Rangga Kusuma Wardhana,<sup>1</sup> Andi Basuki,<sup>2</sup> Suryosutanto<sup>3</sup>

<sup>1</sup>Faculty of Medicine Universitas Padjadjaran, <sup>2</sup>Department of Neurology Faculty of Medicine Universitas Padjadjaran/Dr. Hasan Sadikin General Hospital, Bandung, <sup>3</sup>Department of Pharmacology and Therapy, Faculty of Medicine, Universitas Padjadjaran

### Abstract

**Background:** A knowledge of stroke is important for paramedics, to minimize delays and increase the numbers of potentially treatable patients. Paramedics are health workers who devote themselves in the field of health, have knowledge and/or skills through education in the health field that requires authority in running health services. The aim of this study was to measure the level of knowledge of paramedics about stroke in Jatinangor and Tanjungsari Public Health Center.

**Methods:** A cross-sectional descriptive study was conducted from August to October 2013. An 11-item questionnaire has been established and were submitted to 43 paramedics at Jatinangor and Tanjungsari Public Health Center. The determination of level of knowledge was based on the T-score of each respondent compared with the mean T-score of the subject population.

**Result:** The most respondents were female. Midwifery had the highest frequency of respondents. Largely, the source of information about stroke derived from education. The mean of T-score was 50. There were 28 respondents had a good level of knowledge about stroke and 15 respondents had a poor level of knowledge about stroke.

**Conclusions:** Most paramedics have a good level of knowledge of stroke. [AMJ.2016;3(3):355-8]

**Keywords:** Level of knowledge, paramedics, stroke

### Introduction

Stroke was classically characterized as a neurological deficit attributed to an acute focal injury of the central nervous system (CNS) by a vascular cause, including cerebral infarction, intracerebral hemorrhage (ICH), and subarachnoid hemorrhage (SAH), and is a major cause of disability and death world wide.<sup>1</sup> A fall in the cerebral blood flow caused ischemia. In temporary ischemia, brief moderate ischemia induced disseminated selective neuronal necrosis, whereas longer and severer ischemia produces an infarction then brain death occurred.<sup>2</sup>

Paramedic stroke recognition and hospital prenotification were associated with shorter prehospital times from the ambulance call to hospital arrival and in hospital times from hospital arrival to first medical assessment.<sup>3</sup> Paramedics are health workers who devote

themselves in the field of health, have knowledge and/or skills through education in the health field that requires authority in running health services.<sup>4</sup> Paramedics had not only a potential to reduce delays, but also to ensure patients were assessed in the field appropriately and transported to a hospital with suitable acute stroke care facilities.<sup>3</sup> Additionally, early presentation at a hospital and increased of control of stroke risk factors will provide greater opportunity for effective stroke treatment and prevention.<sup>5,6</sup> The management of stroke must be done immediately to prevent death and long-term disability.<sup>6</sup> Moreover, establishment of stroke centers, combined with accurate paramedic diagnosis and rapid transport, was essential to deliver acute stroke therapy.<sup>7</sup> Therefore the paramedics should had a good knowledge about stroke to prevent a delay in acute management of stroke.<sup>8</sup> The aim of this study

**Correspondence:** Rangga Kusuma Wardhana, Faculty of Medicine, Universitas Padjadjaran, Jalan Raya Bandung-Sumedang Km.21, Jatinangor, Sumedang, Indonesia, Phone: +6283816082740 Email: ranggawardhana92@gmail.com

was to measure the level and the profile of knowledge of paramedics about stroke at Jatinangor and Tanjungsari Public Health Center.

## Methods

This study was conducted from August to October 2013 in Jatinangor and Tanjungsari Public Health Center. This study used the cross-sectional descriptive design. All of the data collection and validation have been approved by the Health Research Ethics Committee, Faculty of Medicine Universitas Padjadjaran.

The subject population of this study was 43, while the inclusion criteria of the study were the paramedics working in Jatinangor and Tanjungsari Public Health Center and the paramedics who had directly contact with the patients. The exclusion criteria of the study were the paramedics who did not work in Jatinangor and Tanjungsari Public Health Center.

A questionnaire consisting of 11 questions about stroke had been established to assess the level of knowledge of the paramedics in the Public Health Center. The questions consisted of definition, classification, risk factors, signs and symptoms, treatment and management of stroke.

Furthermore, the univariable analysis was

conducted to describe the characteristic of the respondent and the level of the respondent's knowledge.

The determination of level of knowledge about stroke among paramedics was based on the T-score of each respondent compared with the mean T-score of the subject population. If the T-score of respondents was above the mean T-score then, the level of knowledge of the respondents was good, otherwise if the T-score was below the mean T-score.

## Results

The data showed that the most respondents in the study were female. The Midwifery also had a greater frequency than others in educational level. Education was the most source of information about stroke among the respondents (Table 1).

Based on the result of the analysis, it was found that 28 respondents had a good level of knowledge about stroke and 15 respondents had a poor level of knowledge about stroke. The mean of T-score was 50. This score was used to determined the level of knowledge about stroke (Table 2).

## Discussion

Based on the result of the analysis, it was found that most of respondents had a good level

**Table 1 Distribution of Frequency Based on Respondents Characteristic**

Variable	Frequency (n=43)	Percentage (%)
Sex		
Male	8	19
Female	35	81
Education		
Midwifery	29	67
Nursing	8	19
Pharmacy	1	3
Analyst	1	3
Public Health	1	3
Senior High School	2	5
Source of Information		-
Education	31	72
Seminar	4	9
Media	8	19

**Table 2 Characteristic of Data and Level of Knowledge**

Variable	Level of Knowledge	
	Good (n=28) (%)	Poor (n=15) (%)
Sex		
Male	4 (50)	4 (50)
Female	24 (68.6)	11 (31.4)
Education		
Midwifery	24 (82.8)	5 (17.2)
Nursing	4 (50)	4 (50)
Pharmacy	0	1 (100)
Analyst	0	1 (100)
Public Health	0	1 (100)
Senior High School	0	2 (100)
Source of Information		
Education	24 (77.4)	7 (22.6)
Seminar	3 (75)	1 (25)
Media	1 (12.5)	7 (87.5)

of knowledge about stroke. The midwifery was the highest frequency of respondents, this might be due to the paramedics of the midwifery were the most widely available in the Public Health Center compared with other paramedics.

Furthermore, the importance of knowledge about stroke for paramedics was to diagnosed the stroke patients accurately, then transport them to the hospital rapidly, thus an acute stroke therapy could be delivered in time.<sup>7</sup> Alexandrov et al.<sup>8</sup> reported that in their study on the pre-intervention phase of study, accuracy of paramedics diagnosis of stroke was 61% cases, compared with 79% accuracy in the active-intervention phase.

Other studies reported, the knowledge of stroke was correlated with a delay in the acute management of stroke patients. According to the general public, 911 dispatchers/communicators, and EMS (Emergency Medical Services) personnel that have less knowledge of stroke caused delay to reach medical facilities in a timely manner in patients with acute stroke.<sup>9</sup> Immediate recognition of stroke symptoms and activation of the medical system is a crucial factor in improving outcome for acute stroke patients.<sup>10</sup>

Additionally, limitation of this study was the lack of data that showed the delay of

consultation time to the doctors of the Public Health Center, therefore this study cannot determine the correlation of the level of knowledge about stroke with the first acute management of stroke. Moreover, this study could not compare the level of knowledge about stroke among each profession of the paramedics. It was recommended that the data about acute management of stroke in the Public Health Center or during the patient's transport to the hospital should be recorded to evaluate the factors that influence the delay of stroke acute management.

The conclusion of this study is most of the paramedics already have a good knowledge about stroke, but the paramedics cannot determined the accuracy of stroke diagnosis due to the authorisation for the diagnosis can be only obtained by the doctor of the Public Health Center. Moreover, education about stroke is important to improve recognition of stroke symptoms by the paramedics. To minimize delays and increase the numbers of potentially treatable patients, the American Stroke Association recommends rapid access to EMS or paramedics that use diagnostic algorithms to efficiently identify, triage, and transport patients with acute stroke to an appropriate center.

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