Rational Model-Based Training Retain the Health Cadres' Knowledge, Attitudes, and Practices on Stroke Issue

Husniyatur Rizqiyah Dhomiri[1], Karyono Mintaroem[2], Setyoadi[3]

[1]Master Program of Nursing, [2]Departmen of Parasitology, [3]Department of Nursing, Faculty of Medicine, University of Brawijaya

Abstract

Stroke is a medical emergency that the patients of it ideally should have received stroke management ≤3 hours since the attack. Emergency situations can occur at anytime, thus the health cadres participation in minimizing pre-hospital delay through FAST method is needed. In order to make the cadres have knowledge, positive attitudes, and good practices about FAST, the rational model-based training was conducted. The aim of this study was to analyze the effectiveness of rational model-based training on the health cadres' changes on knowledge, attitudes, and practices in the stroke symptoms detection using FAST. This study used quasi-experimental research design through pretest-posttest control group design. 50 respondents were divided into intervention and control groups. Data analysis used independent sample t-test and mann whitney test. The results show that there were differences in attitude and practices changes between the intervention and the control groups after training, with p values 0.009 and 0.000. There was no any difference in the retention of knowledge, attitudes, and practices in both groups, the p value was 0.849; 0.626;0.456.

Keywords: *Training, Rational Model, FAST, Stroke, Health cadres.*

Introduction

Stroke is the second leading cause of death and the third cause of disability in the world. The stroke prevalence in low and middle income countries generally reaches 70%[1]. The stroke prevalence in Indonesia at the age of ≤ 15 years was 7% in 2013, rising to 10.9% in 2018. The stroke patients prevalence in the age range of 15-54 years reached 80.7%[2]. This fact shows that many stroke cases strike any of the productive age group. Dissability that occurs due to stroke at the productive age destroy one's career and future.

Research conducted in 28 Indonesian hospitals showed that most of stroke patients arrived at hospital >6 hours since the attack amounting to 67.3%[3]. Another study indicates that the higher institution staff had a low level of stroke symptoms recognation with the percentage of 63.4%[4].

Based on the previous study results in 2018, in Mojolangu Public Health Center in Malang City found stroke cases of 1.39%. Furthermore, another previous study which was conducted at one hospital in Mojolangu region shows that it was only 10% of stroke patients who came in emergency department within ± 3 hours from the attack. Furthermore, it was known that before coming to the hospital, the patients came to an independent physiciansince they felt that their body was limp and suddenly weak. This fact indicates that the stroke symptoms are not recognized as an emergency case which requires prompt treatment.

Stroke patients ideally should have received stroke management ≤3 hours since the attack[5]. About 95% of initial stroke symptoms are started from the outside of hospital. Thus, it is important to recognize the initial symptoms and emergency treatment of stroke, this

Corresponding Author:
Husniyatur Rizqiyah Dhomiri
Master Program of Nursing, University of Brawijaya, Jalan Veteran, Ketawanggede, Lowokwaru Malang, Indonesia
e-mail: husniyaturrizqi@ub.ac.id

recognition can be done through education[6,5]. FAST is an early detection method of stroke symptoms which combines three general warning signs of stroke and an action plan that should be done when those three warning signs appear[7].

The Department of Health has the concept of empowering the particular ordinary people who have a great chance of being exposed to emergency cases, through knowledge and skills they will be able to provide first aid and increase the awareness of response time so that disability or death due to medical emergencies can be minimized. In this case,those particular ordinary people include the health cadres[8].

The rational model can be used as a planning strategy to achieve the targeted results from training, thus, it is easier for the educators to plan, implement and evaluate interventions. Rational models are formed based on the premise that the increasing knowledge change attitudes, thus it also drives changes in practice[9].

In order to improve knowledge, attitudes, and practices better, the researcher provided motivation and simulation. The purpose of this study was to analyze the effectiveness of rational model-based health education on changes in the knowledge, attitudes and practices of health cadres in the early detection of early stroke symptoms using FAST.

Method and Materials

The research design used was a quasi-experimental through the pretest-posttest control group design. Respondents were 50 health cadres, divided into intervention and control groups. The trainings were held in each village in the working area of PUSKESMAS Mojolangu-Malang,

Intervention group training was carried out by providing education using flip chart media and pictorial modules with interludes of motivation and simulations conducted in 2 sessions. Session 1 contained material explanations interspersed with any motivation regarding the importance of the cadres' role in detecting the early symptoms of FAST stroke. Session 2 was continued in the following day, in this session the facilitator conducted a FAST simulation and briefing using a simulation patient. The provision of education in the control group was done without providing motivation and simulations, it only contained the material explanations using flip chart media and pictorial modules which were carried out in one session.

The inclusion criteria were cadres who had never received any of health education about early detection of the stroke symptoms related to the FAST method. Measurement of knowledge, attitudes, and practices refers to the process of change in the cognitive, affective, and psychomotor domains of Bloom's theory tested for validity and reliability by the researcher. Bivariate analysis using independent sample t-test and Mann-Whitney test.

Findings:

Table 1. Distribution of Respondent Characteristics in Intervention and Control groups Based on Age, Length Time as Cadre and Total Training

Variable	N	Control		Intervention	
		Mean ± SD	95% CI	Mean ± SD	95% CI
Age	25	46.6 ± 8.362	43.15-50.05	50.92 ± 10.04	46.77-55.07
length of time as the cadre	25	7.76 ± 5.585	5.45-10.07	10.28 ± 7.266	7.28-13.28
Total training	25	3.6 ± 4.637	1.69-5.51	3.76 ± 3.205	2.44-5.08

Table 1 shows the average respondent in the intervention group was 50 years old and the control group was 46 years old. The average respondent in the intervention group had been as a cadre for 10 years, while in the control group for 7 years. On average, the respondents in the intervention and control groups had attended the trainings for 3 times.

Table 2. Distribution of Respondent Characteristics by Gender and Education in Intervention and Control groups

Variable	Category	Control		Intervention	
		Frequency	%	Frequency	%
Gender	Male	-	0	1	4
	Female	25	100	24	96
Education	Elementary	1	4	6	24
	Middle	7	28	9	36
	High	13	52	9	36
	University	4	16	1	4

Table 2 shows the gender in the intervention and control groups were dominated by female, that were 24 respondents (96%) and 25 respondents (100%). The education of the respondents in intervention group dominantly were Middle and High schools graduate which were 9 people (36%) and the control group was dominated by high school graduate (13 people) (52%).

Table 3. Differences in Changes of Knowledge, Attitudes and Practices Related to FAST Stroke in Intervention and Control Groups after Training

Variable	N	Mean Delta ± SD		P value
		Control	Intervention	
Knowledge	25	1.72±2.052	2.32±1.406	0.234
Attitude	25	0.56±3.367	3±3.663	0.009
Practice	25	2.68±2.293	0.56±3.367	0.000

Table 3 the statistical test results on knowledge variable obtained p value 0.234 ($p > 0.05$), meaning there were no any significant differences in knowledge changes between the two groups after the training. P-value 0.009 ($p < 0.05$) on the attitude variable and 0.000 ($p < 0.05$) on the practice variable, meaning that there were significant differences in attitude and practice changes between the two groups after training.

Table 4 Differences of Knowledge, Attitude and Practice Retention Related to FAST Stroke in Intervention and Control Groups

Variable	N	Control			Intervention			P value
		Median Delta	Delta Min	Delta Max	Median Delta	Delta Min	Delta Max	
Knowledge	25	0	-2	2	0	-2	2	0.849
Attitude	25	0	-4	6	0	-4	5	0.626
Practice	25	0	-4	0	0	-5	0	0.456

Table 4 shows the retention tests results on the knowledge, attitudes and practices variables,with p value 0.849; 0.626; 0.456 (p> 0.05) there was no statistically significant difference in knowledge, attitudes and practices retention between the two groups.

Discussion

The differences in knowledge, attitudes and practices related to FAST strokes in intervention and control groups: The intervention and the control groups' knowledge after the training had both increased by an average of 2 points, both groups experienced similar changes in knowledge from the less to sufficient category. The respondents' knowledge changes in the intervention group was not higher than control group. Although the training provided was different, this could be influenced by the cadres' low educational level in intervention group, 60% of them were elementary to middle school graduates.

The level of education affectone's ability to receive information, the ease of receiving information has an important meaning for the entry of new knowledge[10]. This study indicates that the health cadres' ability in receiving information was influenced by their level of education. The higher level of cadre education, the easier it would be to receive information, thus the more knowledge and insight would be obtained[13].

The respondents' attitude in intervention group after training increased 3 points, while the control group <1 point. Both groups initially had moderate attitude, after training the intervention group's attitude changed well, while the control group remained moderate. The difference in change could be influenced by the provision of education which was interspersed with motivation about the importance of cadres' role in early stroke symptoms detection using FAST.

Attitude is an assessment process carried out by individuals towards an object; things, people or information. The process of evaluating a person against an object can be in the form of positive and negative assessments[14].

The individual attitudes formation is obtained from the process of seeing, hearing, and feeling. The formation of attitudes is influenced by external factors (such as experiences, situations, obstacles, norms) and internal factors (such as psychological and encouragement in individuals). Providing education and motivation is an external factor that can change attitudes through a process of understanding and instilling awareness, thus making someone more aware of the importance of information[15].

The previous studies results showed that education by providing motivation could bring a positive influence on attitudes[15].

The respondents' practice in the intervention group after training increased 10 points, while the respondents' practice in the control group increased 3 points. Both groups initially had poor practice abilities, the intervention group's practice ability changed wellafter training, while the control group's practice was in the poor category. This can be influenced by simulations.

Knowledge is obtained from the results of knowing the object through sensing. Training with simulation provides an opportunity to involve the senses of a person through sight, hearing and touch, thus, it forms a more perfect knowledge and understanding. Then, it helps someone respond positively to an object that is realized in practice[16]. The results of this study are in line with the previous study results by providing interventions in the form of simulation to improve practice, thus simulation method is effective in improving practice[17].

Differences in knowledge, attitude and practice retention related to FAST stroke in intervention and control groups: Statistical test results showed that the retention of intervention and control groups' knowledge was no different, after one week of training the change of knowledge in the two groups belong to sufficient category. Training is an act of delivering information through education. The process of storing information took place gradually, starting from the processing of information entering through sensing which is then recorded by sensory memory. The information that is not heeded will be immediately forgotten, yet the heed information was received. Each information received will leave traces that settle in the memory which will be temporarily stored in short-term memory to be stored for 30 seconds, which may be remembered or forgotten[18,19].

Information stored in short-term memory is transferred to long-term memory through a repetition and selection process, yet not all information stored in long-term memory is stored properly. Traces of long-term memory can also be lost since it is replaced by the new information, thus the forgetfulness occurs. In this case, a post-test which was done a week after the

training stimulated the process of searching and finding back the information stored in memory, therefore the results of this second post-test were the description of memory retention[18,19].

Statistical test results showed that the retention attitude of intervention and control groups was no different. After one week training, respondents' attitude in the two groups that had changed remained the same, the intervention group's attitude remained good and the control group's attitude remained moderate. The study results mentioned that motivation had an influence on interest. Motivation is a process of encouraging a person to carry out something that leads to certain goal achievement[20,21].

There are two types of motivation, intrinsic motivation and extrinsic motivation. Intrinsic motivation is the driving force that causes a person participate based on an inner urge. Extrinsic motivation is motivation that causes a person participate maximally due to external stimuli [22].

Statistical test results show that the retention of the intervention and control group practices in this study was no different. After one week of training, the intervention group's practices remained in good category and the control group's practices remained in bad category. The simulation method purpose was to form skills to be applied in real life, thus the simulation method couldbring the effect on practice[14,21].

Cognitive, affective, and psychomotor of human activities involve memory. The occurrence of memory retention is influenced by the level of individuals in paying attention to information, motivation in learning, rationality and usefulness of the information presented, as well as the role of sources in making some interesting media by modifying new ideas and refinement of what is already known. Although short training could improve and retain knowledge, attitudes, and practices, as the time goes by, a lot of information is stored and competing with other information, thus there is a need for repetition with different method for the same topic which is done periodically and not continuously[22,24].

Conclusion

It can be concluded that there was no any difference in the knowledge of the two groups after health education was given. However, there were differences in attitudes and practice changes between the two groups. The attitudes improvement changes and better practices in the intervention group were caused by the motivation and simulations provision. There was no any difference in the retention of knowledge, attitudes and practices between the two groups.

Conflict of Interest: None declared

Source of Funding: None

Ethical Clearance: This research has been declared ethical by the medical research ethics commission of the Faculty of Medicine, Brawijaya University in Malang, with the number: 287/EC/KEPK- S2/10/2019.

References

1. Johnson W, Onuma O, Owolabi M, Sachdev S. Stroke: a global response is needed. Bull World Health Organ [Internet]. 2016;94(9):634-634A. Available from: http://www.who.int/entity/bulletin/volumes/94/9/16-181636.pdf
2. Riskesdas. Hasil Utama Riskesdas 2018. 2018.
3. Misbach J. Stroke di Indonesia: a fisrt large prospective hospital based study of acute stroke in 28 hospitals in Indonesia. J Clin Neurosci. 2000;8(3):245–9.
4. Wardhani NR, Martini S. Faktor yang berhubungan dengan pengetahuan tentang stroke pada pekerja institusi pendidikan tinggi. J Berk Epidemiol. 2014;2(1):13–23.
5. Yueniwati Y. Deteksi Dini Stroke Iskemia dengan Pemeriksaan Ultrasonografi Vaskular dan Variasi Genetika. Malang: UB Press; 2014.
6. PERDOSSI. Guideline Stroke 2011. Perhimpun Dr Spes Saraf Indones (PERDOSSI) Jakarta. 2011;49–50.
7. Kleindorfer DO, Miller R, Moomaw CJ, Alwell K, Broderick JP, Khoury J, et al. Designing a Message for Public Education Regarding Stroke Does FAST Capture Enough Stroke ? Stroke. 2007;38:2864–9.
8. Amiruddin K. PPGD untuk Kader Kesehatan dalam SPGDT. Subdit Gadar dan evakuasi Bina Yanmed Dasar. 2007;1–53.
9. WHO. Health Education: theoretical concepts, effective strategies and core competencies [Internet]. Health promotion practice. 2012. Available from: http://www.ncbi.nlm.nih.gov/pubmed/24948598
10. Sedjati HW. Pengaruh tingkat pendidikan sekolah

terhadap motivasi bekerja pada sektor pertanian di desa Karangnanas, kecamatan Sokaraja, Kabupaten Banyumas. J Ilm Pendidik. 2010;2(2):131–42.

11. Tristanti I, Khoirunnisa FN. Kinerja Kader Kesehatan dalam Pelaksanaan Posyandu Di Kabupaten Kudus. J Ilmu Keperawatan dan Kebidanan. 2018;9(2):192–9.
12. Sarwono S, Meinarno EA. Psikologi Sosial. Jakarta: Salemba Humanika; 2009.
13. Aini N, Fatmaningrum W, Yusuf A. Peningkatkan perilaku pasien dalam tatalaksana diabetes melitus menggunakan Model Behavioral System. J Ners. 2011;6((1)):1–10.
14. Astuti E, Badi'ah A. Studi komparasi promosi kesehatan antara simulasi dan penayangan video terhadap perilaku personal hygiene anak usia sekolah di sd N Kaliduren Moyudan Sleman Yogyakarta. Progr Stud Ilmu Keperawatan Sekol Tinggi Ilmu Kesehat Aisyiyah. 2012;
15. Nursana IM, Ghaznawie M, Budu. Pengaruh simulasi Kedaruratan Medik terhadap Kompetensi Petugas Penanggulangan Bencana Daerah Provinsi Sulawesi Barat. Soedirman J Nurs. 2013;8(3):155–62.
16. Bhinnety M. Struktur Dan Proses Memori. Bul Psikol. 2015;16(2):74–88.
17. Putri DM, Wahyudi F, Margawati A. Perbedaan Retensi Memori Pasca Penyuluhan Keluarga Berencana Dengan Media Ceramah Dan Video Pada Wanita Usia Subur. J Kedokt Diponegoro. 2016;5(4):682–93.
18. Aidha Z. Pengaruh motivasi terhadap minat berwirausaha mahasiswa Fakultas Kesehatan Masyarakat Universitas Islam Negeri Sumatra Utara. J Jumantik [Internet]. 2016;1(1):43–59. Available from: http://waset.org/publications/14223/soil-resistivity-data-computations-single-and-two-layer-soil-resistivity-structure-and-its-implication-on-earthing-design%0Ahttp://www.jo-mo.com/fadoohelp/data/Dot Net/Ethical securty.pdf%0Ahttp://link.springer.com/10.10
19. Munandar AS. Psikologi Industri dan Organisasi: Edisi Pert. Jakarta: UIP; 2001.
20. Putra AK, Frianto A. Pengaruh motivasi intrinsik dan motivasi ekstrinsik terhadap kepuasan kerja. J Bisnis dan Manaj. 2013;6(1):59–66.
21. Handayani T. Penerapan metode simulasi pada materi pembelajaran Press Conference guna meningkatan soft skill dan pembelajaran di SMKN 3 Bandung tingkat 11 (AP4). J Penelit Pendidik. 2017;99–104.
22. Naeem N. Which Knowledge and Skills Do Participants Retain after Attending Medical Education Training Workshops? Creat Educ. 2016;07(06):870–7.
23. Bardosono S, Hildayani R, Chandra DN, Basrowi RW, Wibowo Y. The knowledge retention after continuing health education among midwives in Indonesia. Med J Indones. 2018;27(2):60–5.
24. Brasil RFG, Moreira MMC, Teles L mara R, Damasceno AK de C, Moura ERF. Level of knowledge, attitudes and practices of puerperal women on HIV infection and its prevention. Acta Paul enferm. 2014;27(2):133–7.