

Research article

The self-instructional module had a positive impact on knowledge for stroke prevention amongst hypertensive patients in selected hospitals

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Abstract

While stroke is an important factor for mortality and morbidity all around the world, the major predisposing factor to stroke is hypertension. The present study was designed to assess the impact of Self Instructional Module on the knowledge of hypertensive patients to stroke prevention for the selected demographic variables. As we assumed that the hypertensive subjects may develop complications leading to stroke, the use of Self Instructional Module was expected to help hypertensive patients to gain adequate knowledge and instill attitude for stroke prevention thereby to inculcate stroke prevention practices. Thus, the study adopted a conceptual framework developed by the investigator to use the Self Instructional Module on prevention of stroke for scoring the improvement in performance on pre- and post-assessments for knowledge amongst hypertensive patients. The resultant data analyzed by Wilcox-Signed Rank test and Kruskal-Wallis test revealed that post-test had significant improvement in scores for knowledge for stroke prevention among hypertensive patients. Hence, this research concluded that the use of Self Instructional Module is effective in improving the knowledge for stroke prevention in hypertensive subjects.

Keywords: self-instructional module, patients, training, stroke***Corresponding author:** Priyanka Sane, Kamalnayan Bajaj College of Nursing, Aurangabad (MS), India Email: priyankassane@gmail.com**1. Introduction**

High blood pressure, termed "hypertension," is a condition that afflicts almost [1] billion people worldwide and is a leading cause of mortality and morbidity. Therefore, this diseased condition is sometimes referred as "The Silent Killer." This disease is benign until the implications of hypertension like stroke, myocardial infarction, renal dysfunction, visual problem, etc., are observed. Thus, hypertension is a major predisposing factor to stroke, coronary artery disease and myocardial infarction [2]. Of these, stroke is well known for sudden death and serious disabilities if survived.

In spite of the reputation of stroke as a "killer disease" [3, 4], there is a gaining popularity for stroke as preventable and treatable disease. Over the past two decades, a number of research

studies overturned the traditional perception that stroke is a consequence of aging that inevitably results in death or severe disabilities. Evidences accumulated more effectively for primary and secondary prevention strategies, better recognition methods for higher risk patients and timely preventive interventions soon after the onset of symptoms. This has led to better understanding of the care process with a good number of evidences to support on innovative intervention strategies to stroke prevention and rehabilitation [3].

In a study to evaluate an antihypertensive therapy (AHT) by Esposti LD, Saragoni S and Benemei S in 2011 [6] the risk of all causes of death in hypertensive patients like stroke or acute myocardial infarction significantly lowered in patients with good (HR = 0.69, $p < 0.001$) response to excellent adherence (HR =

0.53, $p < 0.001$) indicating the need to monitor and improve adherence in clinical practice [7]. In another study to assess the knowledge on recurrence in stroke patients using a questionnaire hypertension, hyperlipidemia and smoking were identified as risk factors for recurrence by 90 % of the patients with good knowledge on these risk factors. However, the research insisted the need for better teaching strategies to deliver knowledge on these topics to stroke patients⁸. In this study; the investigator developed a Self-Instructional Module that was expected to impart knowledge on stroke prevention. Assessments to score knowledge, attitude and practice before and after the use of this module evaluated the efficiency in stroke prevention strategy. This study, thus aimed to provide hypertensive patients with information on hypertension, complications of hypertension, stroke, its risk factors, preventive measures for stroke and its medical management through the Self-Instructional module. The investigator expected the outcome of post-test scores to evaluate the extent to which the Self Instructional Module (SIM) regarding prevention of stroke among hypertensive patients has achieved the desired outcome as measured by significant changes in the knowledge scores or remain the same as pre-test scores.

2. Materials and methods

The main objective of this study is to improve the knowledge of the patient suffering from hypertension on stroke as is a major complication resulting from uncontrolled increase in the blood pressure with the help of the Self Instructional Module developed by the investigator. The concept for developing this module was to bring a change in attitude of hypertensive patients regarding preventive aspects of stroke misconceptions; improve the practices of hypertensive patients to stroke prevention practices; provide scientific and research based knowledge to support stroke prevention practice during nursing and provide improved preventive care to stroke patients.

The research was conducted in the OPD ward of selected corporation hospital for the availability of sample and feasibility to infrastructure accessibility. Formal ethical clearance and

permission from Medical Director of the selected hospital was obtained before the commencement of this study. Consent from individual patients participated was obtained in appropriate manner and document format. The assessment and documentation for the study was nearly for one month, 1st of November to 30th of November, 2014.

The investigator used quantitative research approach to evaluate the effect of treatment or intervention as Self Instructional Module (SIM) on hypertension and prevention of stroke, which was denoted by X. The research design therefore consisted of experimental groups undertaking two different tests: pre-test (O_1) and post-test (O_2) using questionnaire.

Selection of Patient Samples:

The accessible patient population comprised of adult hypertensive patients visiting the medicine outpatient department and are selected based on listed exclusion and inclusion criteria. 60 patients consented to participate in this study.

The inclusion criteria were: Adult subjects above 18 years of age.

1. Patients are hypertensive for the past 5 years.
2. Subjects visited medicine OPD.
3. Subjects signed consent form.
4. Subjects know English/Marathi/Hindi.
5. Both gender were included in the study.

The exclusion criteria were:

1. Subjects are illiterate.
2. Subjects had other co-morbidities.

Development of self instructional module

The Self Instructional Module was a learning material that consisted of labelled diagrams and relevant reading resources on stroke prevention. The information provided in this module is recent and simple to understand by hypertensive patients. The various aspects of stroke covered by the Self-Instructional Module are:

1. **Hypertension:** Definition; Types; Risks factors; Complications

2. **Stroke:** Definition; Risk factors; Clinical manifestations
3. **Stroke prevention guidelines**
4. Implication of various methods to control hypertension and prevent stroke

Final Message to Stroke Patients Tools for Assessment:

The tools used in this research for assessment was structured questionnaire on knowledge regarding hypertension and prevention of stroke.

The questionnaire had 10 structured statements with "Multiple Choice" were framed on the knowledge of hypertensive patients regarding stroke prevention.

The time taken to fill the data by the subjects was approximately 20 - 25 minutes. The Self Instructional Module was displayed after the pre-test to the patients followed by a briefing to the pre-test. Every day 3-4 subjects were available. The post-test was conducted after 7 days of pre-test at the hospital or at their home. The scores of the individuals was the data collected and was analyzed for significant difference between the mean pre-test and post test scores of the subjects before and after administration of the Self Instructional Module.

Data Analyses:

The investigator analysed the data initially on Microsoft Excel (version 2010) and tabulated. The test scores before and after administering the Self Instructional Module was analysed using frequency and percentage in the form of tables and graphs. 'Z' test was computed to find the significant difference of the mean scores of the individuals and thus, was used to interpret the overall outcome on the effect of the Self-Instructional Module developed by the investigator.

Results:

The collected data was entered on a master data sheet for tabulation and statistical analyses. In order to find the relationship, the data was tabulated, analysed and interpreted using

inferential non-parametric statistics, i.e. Wilcoxon-Sign rank and Kruskal-Wallis test.

Knowledge on Stroke Prevention:

Table 1: Distribution of subjects according to pre-test and post-test knowledge scores on prevention of stroke among hypertensive patients

N = 60

Sr No	Range of scores	Grades	Pre test		Post test	
			f	%	f	%
1	8-10	Good	0	0	57	95
2	4-7	Average	16	26.67	3	5
3	0-3	Poor	44	73.33	0	0

Note: N: Total number of subjects

Table 1 shows the mean knowledge score secured by hypertensive patients on stroke prevention before and after intervention using Self Instructional Module. The results depict that most of the subjects, 73.33 % (44) had poor knowledge and 26.67 % (16) had average knowledge in the pre-test. On the contrary, majority of the subjects, 95 % (57) gained good knowledge and 5 % (5) gained average knowledge after intervention in the post-test. Thus, the differences in the mean scores of the pre-test and post-test of the hypertensive patients showed high statistical significance for knowledge on prevention of stroke in hypertensive subjects in post-test after using Self-Instructional Module as in Table-2.

Table 2: Descriptive statistics of pre-test and post-test knowledge scores on prevention of stroke among hypertensive patients

N = 60

Groups	Mean	SD	Z value	p value
Pre test	2.58	1.39	-6.764	0.000**
Post test	8.67	0.63		

Note: Z: Wilcoxon Signed Rank test, **: Highly significant at $p < 0.001$ l.o.s, SD: Standard Deviation.

Discussion

The number of stroke attacks increase day-by-day. Hence, there is a necessity to educate the hypertensive patients to stroke prevention practices for bringing down morbidity and mortality rates due to stroke. Thus, the present study was conducted to evaluate the efficiency of Self-Instructional Module on knowledge to stroke prevention in hypertensive patients at the selected hospital. Therefore, the study was designed with the selection of sample patients using non-probability purposive sampling technique and adopting pre-test and post-test assessments with intervention or treatment through Self-Instructional Module. The data were collected by using a structured questionnaire from 60 willing hypertensive patients once before and after providing the Self Instructional Module to impart information for knowledge, attitude and practices to stroke prevention among hypertensive patients at the selected hospital. The analysis of the findings was performed using descriptive and inferential statistical methods. From the assessed and evaluated results this was clearly evident that the Self-Instructional Module played a significant role in the improvement of knowledge to stroke prevention among hypertensive patients that in turn will impact the attitude to and practices for stroke prevention.

A perusal of literature also revealed similar findings by other researchers in stroke patients. Vaghari G et al. (2012) conducted a study on the impact of literacy on the prevalence, awareness, treatment and control of hypertension in Iran subjects aged between 15-65 years with a help of a multidimensional questionnaire and blood pressure level. The study results revealed that the control of hypertension was significantly greater in college educated group than in illiterate group (32.4% vs. 68.8%; $p = 0.001$), thus indicating illiteracy as a risk factor to stroke. However, the investigator concluded that awareness programs will reduce complications related to hypertension even in the illiterate subjects [9].

Similarly, Beena T, M Navaneetha and Malathi in a descriptive study on the risk status of stroke among adults and the effectiveness of an awareness program on primary prevention of

stroke, a self administered stroke assessment questionnaire followed by blood pressure, height, and weight measurements resulted that people were often unable to identify their health condition as risk factor of stroke. Risk perception through mass education on primary prevention of stroke will help to control modifiable risk factors.¹⁰ Furthermore, the major risk factors to stroke identified by this study are: hypertension (38%), smoking (17.1%), high cholesterol (25.1%), and diabetes (24.4%) and lack of exercise (53.7%) [10].

Thus, the results of this study complemented previous findings that the impact of Self-Instructional Module to stroke prevention was significant as explicit on the assessment scores on knowledge on stroke and stroke prevention in the post-test. This in turn indicates that the awareness and risk regarding prevention of stroke and hypertension control should be emphasized in order to reduce the anxiety in hypertensive patients for want of knowing more of stroke and reduces the pressure of risk to stroke by gaining confidence in adopting appropriate stroke prevention practices.

Conclusion

The outcome of this research led the investigator to conclude that the subjects were having some knowledge regarding prevention of stroke before providing Self Instructional Module as assessed using the Structured Questionnaire that only improved the knowledge after intervention. This in turn is expected to improve the attitude of patients to be more precarious to stroke occurrence and change attitudes to stroke prevention and adopt stroke prevention practices.

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