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Research article

Self-instructional module influences attitude and practices for stroke prevention in hypertensive patients

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Abstract

Stroke is one of the prime medical reasons for high global mortality and morbidity rates for which the major predisposing factor is hypertension. 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 that in turn will instill attitude favoring stroke prevention thereby will encourage stroke prevention practices. Therefore, in this study the impact of the developed Self Instructional Module on: a) the attitude of hypertensive patients to stroke prevention; and b) the practice of hypertensive patients to stroke prevention for the selected demographic variables was evaluated using questionnaire technique. We adopted a conceptual framework to develop the Self Instructional Module on prevention of stroke and evaluated the improvement in performance on pre- and post-assessments for attitude and practice amongst hypertensive patients to stroke and stroke prevention based on the scores obtained by the individual participants. The resultant data was analyzed by Wilcox-Signed Rank test and Kruskal-Wallis test that revealed post-test had significant improvement in scores for attitude and practice for stroke prevention among hypertensive patients in comparison to pre-test. Hence, this research concluded that the use of Self Instructional Module is effective in improving the attitude and practice for stroke prevention in hypertensive subjects.

Keywords: Self-instructional module, patients, attitude and practices, hypertensive

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1. Introduction

High blood pressure or hypertension is a condition that afflicts almost [1] more than a billion people worldwide resulting as the leading triggers to increased mortality and morbidity rates. Thus, hypertension is best referred as “Silent Killer’ for the nature of the diseased condition being benign and asymptomatic until complications like stroke, myocardial infarction, renal dysfunction, visual problem, etc. arise [2]. Of these, stroke is well known for sudden death and serious disabilities if survived with hypertension being the prime predisposing unnoticed cause.

Even though stroke having the repute for sudden onset and attack in hypertensive patients [3, 4], recent research advances have changed perception on stroke as a preventable and treatable disease. Evidences from scientific communities proved that primary and secondary stroke prevention strategies gained better recognition in high risk patients for timely preventive interventions soon after the onset of stroke symptoms. This has led to better understanding of the care processes needed and that are available emphasizing the lacuna for developing innovative intervention strategies to stroke prevention and rehabilitation [3].

Recent researches like the study by Esposti LD *et al*. (2011) [6] to evaluate an antihypertensive therapy (AHT) showed that death in hypertensive patients due to stroke or acute myocardial infarction significantly lowered to excellent adherence to AHT; thus, this indicates the need to

monitor and improve adherence in clinical practice [7]. In another similar study where knowledge on stroke recurrence patients with previous attack was assessed using a questionnaire showed that hypertension, hyperlipidemia and smoking were identified as main risk factors for recurrence by 90 % of the patients and they seemed to have good knowledge on these risk factors; but they emphasized the need for better teaching strategies to deliver knowledge on these topics to stroke patients [8].

In the present study the investigator developed a Self-Instructional Module to to impart knowledge on stroke prevention, which was followed by assessments to score attitude to and practices for stroke prevention, before and after the use of this module. This two-way assessment evaluated the efficiency of the module in inculcating stroke prevention strategy. Hence, the aim of this study was to provide hypertensive patients with information on hypertension with stroke as a resultant complication, risk factors and preventive measures for stroke through the Self-Instructional module and assess the implications thereof. The investigator expected the outcome of post-test scores to improve statistically significant on attitude and practices to stroke prevention post the exposure and study using the Self Instructional Module (SIM) among hypertensive patients.

Materials and methods

The main objective of this study was to improve the knowledge of hypertensive patients on stroke for developing an attitude to adopt and prevailing stroke prevention strategies as is a major complication resulting from uncontrolled increase in the blood pressure using the developed Self-Instructional Module. The module was expected to bring a change in attitude regarding preventive aspects of hypertension to stroke misconceptions and recurrence; improve the stroke prevention practices in hypertensive patients to the existent practices; and provide scientific and research based knowledge support for providing improved preventive care to stroke patients.

The research was conducted among outpatients of selected corporation hospital on gaining appropriate ethical clearance and permission from Medical Director before the commencement of this study. Consent from individual patients willing to participate was documented. The assessment was recorded for the study period of one month, 1st of November to 30th of November, 2014.

Selection of Patient Samples:

The patient population comprised of adult hypertensive patients visiting the medicine outpatient department and is selected if they fulfil the following exclusion and inclusion criteria. Thus, 60 patients consented to participate in this study were eligible.

The inclusion criteria were: 1. Age: ≥ 18 years of age; 2. Hypertensive patients for the past 5 years; 3. OPD patients; 4. Signed consent form; 5. Languages known: English /Marathi /Hindi; 6. Both gender were included. The exclusion criteria were: 1.Illiterate; 2. Patients with co-morbidities.

Development of self instructional module

The Self Instructional Module was a learning material developed with labelled diagrams and relevant reading resources elucidating on stroke prevention. The information provided was recent and simple to understand for hypertensive patients. The various topics on stroke included in the Self-Instructional Module were:

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

Tools for assessment

The tools used in this research for assessment were: 1. Attitude of hypertensive patients regarding stroke and its prevention - 10 statements were made to assess the attitude of hypertensive patients regarding prevention of stroke; and 2. Checklist to assess the self-reported practice regarding prevention of stroke – 10 questions was asked to assess the practice/measures by hypertensive patients for prevention of stroke.

The time taken to fill the data by the subjects was approximately 20-25 minutes. The Self - Instructional Module was introduced to the patients with a briefing after the pre-test.3-4 subjects were assessed daily for a period of one month. The post-test was conducted after 7 days of pre-test at the hospital or at their home. The scores of the individuals analysed for significant difference between the mean pre-test and post test scores before and after administration of the Self Instructional Module. All analyses were carried on Microsoft Excel (version 2010). Statistical tests used were frequency, percentage and 'Z' test for significant difference of the mean scores of the individuals.

Results

In order to find the relationship, the data was tabulated, analysed and interpreted using statistical methods.

Attitude on stroke prevention:

The assessment scores on the attitude to stroke prevention among hypertensive patients were tabulated (Table 1).

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

N = 60

SN	Range of scores	Grades	Pre test		Post test	
			f	%	*f*	%
1	40-50	Most Favourable	0	0.00	60	100
2	30-40	Unfavourable	58	96.67	0	0
3	20-30	Favourable	2	3.33	0	0
4	10-20	Most unfavourable	0	0.00	60	100

Table 1 showed the mean attitude score to stroke prevention among hypertensive patients: most of the subjects 96.67 % (58) had favourable attitude and 3.33 % (2) had unfavourable attitude as evaluated from the pre-test; and after intervention in the post-test, all the subjects, 100% (60), developed most favourable attitude. Thus, the attitude of the hypertensive subjects improved on providing the Self Instructional Module.

Groups	Mean	SD	Median (IQR)	Z value	P value
Pre test	34.60	2.23	35 (33-36)	-6.749	0.000**
Post test	46.60	1.52	47 (45-48)		

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

Furthermore, as evident from Table-2, this was concluded that the assessment scores on attitude to stroke prevention are statistically significant, after providing the Self-Instructional Module.

Stroke Prevention Practices:

Table-3 and Table-4 are the evaluated scores on the practices to stroke prevention among hypertensive patients.

Table 3: Distribution of subjects according to their practice to stroke prevention among hypertensive patients N = 60

SN	Range of scores	Grades	Pre test		Post test	
			f	%	*f*	%
1	8-10	Good Practice	51	85	60	100
2	4-7	Satisfactory Practice	09	15	0	0
3	0-03	Poor Practice	0	0	0	0

Table-3 showed the mean assessment scores for stroke prevention practices among hypertensive patients before and after intervention of Self Instructional Module. As depicted most of the subjects 85 % (51) had good practices and 15 % (9) had satisfactory practices in the pre-test; and after intervention all the subjects, 100% (60), developed good practices in the post-test. Thus, this

significant improvement in practices as observed from the collected data in hypertensive patients to stroke prevention was proved statistically significant as well as in Table-4.

Table 4: Descriptive statistics of the pre-test and post-test practice scores to stroke prevention in hypertensive patients N = 60

Groups	Mean	SD	Median (IQR)	Z value	p value
Pre test	8.80	1.10	9 (8-10)	5.823	0.0**
Post test	9.92	0.28	10 (10-10)		

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

Discussion

As the number of stroke attacks increases day-by-day owing to stressful work lifestyle, there is a need to educate the hypertensive patients to stroke prevention practices for bringing down morbidity and mortality rates due to stroke. Thus, the present study evaluated the implications of using the Self-Instructional Module to impact on the attitude and practices to stroke prevention in hypertensive patients at the selected hospital. Therefore, the study was designed to use the selected patients to pre-test and post-test assessments with intervention or treatment through Self-Instructional Module. The data collected using a structured questionnaire from 60 willing hypertensive patients - once before and after providing the Self Instructional Module to impart information for knowledge – was used to assess the attitude and practices to stroke prevention among hypertensive patients at the selected hospital. The analyses of the findings was performed using descriptive and inferential statistical methods. The results were obvious to affirm that the Self-Instructional Module had a statistically significant impact in the improvement of knowledge on stroke to hypertensive patients that had implication to the attitude and practices to stroke prevention among these observed patients.

Thus a literature review also revealed similar findings by other researchers in stroke patients. In a study by Veghari G et al. (2012) the impact of literacy on the prevalence, awareness, treatment and control of hypertension in Iran subjects aged between 15-65 years a multidimensional questionnaire and blood pressure level was measured. The results showed that the control of hypertension was significantly greater in graduated group than in illiterate group (32.4 % vs. 68.8 %; p = 0.001), thereby indicating illiteracy as a risk factor to stroke. However, the investigator concluded that age-old practices of using awareness programs will encourage reduce ccomplications related to hypertension positively [9].

Similarly, in another study by Beena T, M Navaneetha and Malathi (2001) the risk status of stroke among adults and the effectiveness of an awareness program on primary prevention of stroke using a self administered stroke questionnaire was used. This was complemented with other measurements like blood pressure, height, and weight measurements. The results showed that people were often unable to identify their health condition as risk factor of stroke and so the author concluded that the risk perception to stroke could be created awareness using mass education on primary prevention of stroke [10]. Furthermore, the major risk factor to stroke that was recognised in this study were: hypertension (38%), smoking (17.1%), high cholesterol (25.1%), and diabetes (24.4%) and lack of exercise (53.7%).

In toto, the results of this study affirmed on previous findings that the Self-Instructional Module to stroke prevention had an impact on improving the knowledge of patients to a statistically significant level that in turn had its implications on the, attitude to and practice for stroke prevention. This, in turn implies that awareness to rish and prevention of stroke and hypertension control could be imparted through these techniques to reduce the burden of stroke in India.

Conclusion

In the end, the study revealed that the intervention seemed to change the attitude of subjects to 'most favourable' even if they had 'unfavourable' attitude to stroke prevention. Nevertheless, the Self Instructional Module allowed the patients who had only satisfactory

practices to good stroke prevention practices. On the whole, as expected the results showed that the Self Instructional Module had significantly improved the knowledge, attitude and practice of hypertensive patients regarding prevention of stroke.

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