



EFFECTS OF EDUCATIONAL INTERVENTION ON RISK REDUCTION AND IDENTIFICATION OF EARLY SIGN OF STROKE

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Abstract:

Background: The burden of stroke is increasing in India; stroke is now the fourth leading cause of death and the fifth leading cause of disability. Previous research suggests that the incidence of stroke in India ranges between 105 and 152/100,000 people per year. However, there is a paucity of available data and a lack of uniform methods across published studies.

Results: In both groups, 34% of the hypertensive patients' age was more than 60 years. In both groups, 54% of them were females and 46% of them were males. 37% had studied up to 10th standard or below. Educational intervention improved the medication adherence of the study group more than the control group. Educational intervention was effective in improving knowledge regarding risk reduction and identification of early signs of stroke $p < 0.001$. Average knowledge gain in the study.

Conclusion: Further high-quality evidence is needed across India to guide stroke policy and inform the development and organization of stroke services. Future researchers should consider the World Health Organization's Stepwise approach to the Surveillance framework, including longitudinal data collection, the inclusion of census population data, and a combination of hospital registry and comprehensive community ascertainment strategies to ensure complete stroke identification.

Keywords –Educational intervention, knowledge, risk reduction, early signs of stroke

INTRODUCTION

Stroke is a significant global health problem and a major cause of mortality and morbidity in developed countries and increasingly in low-middle-income countries (LMICs). Seventy percent of strokes occur in LMICs, and the subsequent disease burden is greater than that of high-income countries. Life expectancy in India has recently increased to over 60 years of age, leading to an increase in age-related, non-communicable diseases including stroke; making stroke India's fourth leading cause of death and the fifth leading cause of disability.

To address the rising burden of stroke in India, reliable data on stroke incidence, prevalence, and outcome is needed to inform healthcare policies and the organization of stroke services and to track the impact of any changes in care. In 2016, the Global Burden of Disease project estimated the number of incident cases of stroke in India to be 1,175,778. In a recent systematic review, consisting mainly of cross-sectional studies, the incidence of stroke in India was estimated to be between 105 and 152/100,000 people per year. However, there is a paucity of available data and a lack of uniform methods in published research. The aim of this systematic review was to identify high-quality prospective stroke epidemiology studies in India, to determine the crude and age-adjusted incidence and prevalence of stroke (providing sex-disaggregated data where possible), and one-month case fatality.

NEED OF THE STUDY

Stroke incidence is increasing every year between 180 and 300 per 100,000 people. The incidence increases vertically with age and unhealthy lifestyle. About 20% of patients with an acute stroke will die within a month, and 50% of those who survive will be left with physical disabilities. Non-modifiable risk factors of stroke are age, gender, heredity, and previous vascular events and modifiable risk factors are high blood pressure, heart disease, hyperlipidemia, smoking, excess alcohol consumption, polycythemia, oral contraceptives, and social deprivation. Stroke is the fourth leading cause of death in the United States and is a major cause of adult disability. About 800,000 people in the United States suffer from strokes each year. Every four minutes, one patient dies in America from a stroke on average. Stroke is a medical emergency and needs immediate treatment which is important for PREVENTING DEATH AND DISABILITY FROM STROKES.

RESEARCH METHODOLOGY

Research methodology is a way of obtaining, organizing, and analyzing data. It involves planning for the development and preparation of tools and the validation and evaluation of tools and techniques. Research methodology describes subjects, sampling technique, study design, data collection plan, and data analysis plan.

3.1 Population and Sample

The sample for the present study consists of an accessible population i.e., hypertensive patients attending OPD of selected hospitals and fulfilling the sampling criteria. It is the systematic process of selecting a small portion or subset of the population to represent the entire population. Probability sampling techniques are based on the law of probability, where every element of the population has

an equal and independent chance of being selected for research purposes. The sample size is the number of observations in a sample. The sample size is an important feature of any research study. The sample size of the study consists of 300 hypertensive patients from the selected setting in which 150 samples were considered for the study group and 150 samples were considered for the control group. They were attending the outpatient department of hospitals in Kanpur

3.2 Data and Sources of Data

For this study, primary data has been collected from the staff nurses who are working in hospitals via a structured questionnaire tool.

DESCRIPTION OF TOOL: The structured Interview Technique was used for data collection which includes the following phases opening phase, transition phase, and closing phase.

The following steps were adopted in the development of the tool:

- Review of literature
- Personal consultation and discussion with the experts
- Preparation of the tool
- Content validity of the tool
- Reliability testing of the tool

The present study aimed to assess the effect of educational intervention, on knowledge regarding risk reduction, and identification of early signs of stroke among hypertensive patients. The investigator prepared a structured questionnaire on knowledge regarding risk reduction and identification of early signs of stroke, risk score, and self-reporting checklist.

The tool consists of five sections:

Section I includes demographic information which consists of 10 items—age, gender, education, occupation, monthly income, religion, marital status, duration of disease, suffering from other disease, and taking medication.

Section II includes baseline data items, which are pulse, BP, height, weight (BMI), waist circumference, hip circumference (waist/hip ratio), BSL, and cholesterol.

Section III consists of an assessment of risk which includes blood pressure, Atrial Fibrillation, smoking, cholesterol, diabetes, exercise, Diet/BMI, and stroke in the family where each factor present in the patient was given 1 point. The risk score is divided into three categories—high risks (1-3), caution (4-6), and low risk (7- Section IV includes the lifestyle checklist which consists of habits like smoking, chewing tobacco, drinking alcohol, exercise, fruits, vegetables, vegetarian/non-vegetarian diet, and consumption of table salt. Scoring was given based on poor lifestyle (0-2), average lifestyle (3-4), and good lifestyle (5-7). Section V includes 33 close-ended questions on the meaning, causes, risk factors, risk reduction, signs, and treatment of stroke. Scoring for the questionnaire was

0-16 for poor knowledge, 17-33 for average knowledge, and 34-50 for good knowledge. Educational intervention includes health teaching: meaning of stroke, types of stroke, causes and risk factors of stroke, signs of stroke, and management of stroke and risk reduction through modification of lifestyle.

2. Research Method:

Research methodology is a way of obtaining, organizing, and analyzing data. It involves planning for the development and preparation of tools and the validation and evaluation of tools and techniques. Research methodology describes subjects, sampling technique, study design, data collection plan, and data analysis plan. This chapter deals with the methodology adopted to assess the effect of educational intervention on knowledge regarding risk reduction and identification of early signs of stroke among hypertensive patients.

RESEARCH APPROACH:

A research approach or method is a way of dealing with the research topic that gives direction to the investigator to formulate a framework for data collection and data analysis. The research approach depends upon the topic of research. A quantitative approach is used for the purpose of finding out the effect of intervention and testing the relationship between variables. The research approach adopted for the present study was a quantitative research approach as the study aimed to assess the effect of educational intervention on knowledge regarding risk reduction and identification of early signs of stroke among hypertensive patients.

RESEARCH DESIGN

Research design is a blueprint or master plan which includes methods and procedures for conducting a research study. It involves the description of the research setting of the study, sample size, sampling technique, tools and methods of data collection, and analysis to answer specific research questions or test the research hypothesis. In the present study, the investigator selected a quasi-experimental pretest-posttest control group design to assess the effect of educational intervention on knowledge regarding risk reduction and identification of early signs of stroke among hypertensive patients. Schematic presentation of research design

RESEARCH STUDY SETTING:

Setting refers to the area where the study is conducted. It is the physical location and condition in which data collection takes place in a study. The selection of an appropriate setting for conducting a study is crucial for its successful completion. The present study was conducted in a hospital in Kanpur. The rationale for selecting this setting was easy transport, familiarity with the setting, administrative approval, and cooperation and availability of subjects.

VARIABLES:

Variables are characteristics, events, or responses that represent the elements of the research question in a detectable and measurable way. In quantitative research, the concepts that are of interest are translated into measurable characteristics called variables.

INDEPENDENT VARIABLE:

Independent variable is one that is applied to the experimental situation to measure its effects. In the present study, the independent variable was the educational intervention regarding risk reduction and identification of early signs of stroke.

DEPENDENT VARIABLE:

A dependent variable is the outcome of interest. In the present study, the dependent variable was the knowledge regarding risk reduction and identification of early signs of stroke.

POPULATION:

It includes a target and accessible population. The population for the present study consists of hypertensive patients.

TARGET POPULATION:

It is the entire group of people or objects meeting a set of criteria established by the researcher, for which he wishes to generalize the study findings. The target population for the present study consists of hypertensive patients attending OPD of selected hospitals.

ACCESSIBLE POPULATION:

The accessible population for the present study consists of hypertensive patients attending OPD of selected hospitals in Kanpur and fulfilling sampling criteria.

SAMPLE:

The sample for the present study consists of an accessible population i.e., hypertensive patients attending OPD of selected hospitals and fulfilling the sampling criteria.

SAMPLING TECHNIQUE:

It is the systematic process of selecting a small portion or subset of the population to represent the entire population. Probability sampling techniques are based on the law of probability, where every element of the population has an equal and independent chance of being selected for research purposes. The probability simple random technique is used to select participants who are accessible to the researcher and who meet the criteria of the study by lottery method and are allotted to the control and study groups.

SAMPLE SIZE:

The sample size is the number of observations in a sample. The sample size is an important feature of any research study. Sample size of the study consists of 300 hypertensive patients from the selected setting in which 150 samples were considered for the study group and 150 samples were considered for the control group. They were attending the outpatient department of hospitals in Kanpur

SAMPLING CRITERIA:

The following criteria are set to select samples.

INCLUSION CRITERIA:

1. Hypertensive patients attending the outpatient department of the hospital.
2. Hypertensive patients who understand Hindi and English language.
3. Hypertensive patients who are willing to participate in the study.

EXCLUSION CRITERIA:

1. Hypertensive patients who are mentally unstable.
2. Hypertensive patients were not present at the time of data collection.
3. Hypertensive patients suffering from stroke.

3. Literature review:**1. ROL on Incidence and Prevalence of hypertension and stroke:**

A systematic review and meta-analysis were conducted to identify the Prevalence and incidence of stroke, white matter hyperintensities, and silent brain infarcts in patients with chronic heart failure. Results revealed that in total, 41 articles involving 870,002 patients were retrieved from 15,267 records. Among patients with HF, the pooled proportion of IS was 4.06% (95% CI: 2.94–5.59), and that of WMHs and SBIs was higher at 15.67% (95% CI: 4.11–44.63) and 23.45% (95% CI: 14.53–35.58), respectively. Subgroup analysis of HFpEF and HFrfEF revealed a pooled prevalence of 2.97% (95% CI: 2.01–4.39) and 3.69% (95% CI: 2.34–5.77), respectively. Subgroup analysis of WMH Fazekas scores 1, 2, and 3 revealed a decreasing trend from 60.57% (95% CI: 35.13–81.33) to 11.57% (95% CI: 10.40–12.85) to 3.07% (95% CI: 0.95–9.47). The relative risk and hazard ratio of patients with HF-developing IS were 2.29 (95% CI: 1.43–3.68) and 1.63 (95% CI: 1.22–2.18), respectively.

4. Result and discussion:**MAJOR FINDINGS OF THE STUDY**

The findings of the study were arranged and analyzed under the following sections.

- Section I: This section deals with the description of samples (hypertensive patients) based on their personal characteristics.
- In the control group, 34% of the hypertensive patients' age was more than 60 years. In the study group, 34.7% of the hypertensive patients were over 60 years of age. In the control group, 52% of them were females and 48% of them were males. In the study group, 56% of them were females and 44% of them were males.
- In the control group, 36.7% of them had an education below the 10th standard, whereas in the study group, 37.3% of them had an education below the 10th standard.
- In the control group 67.3% of them had income between Rs. 5000–15000 and in the study group, 64% of them had income between Rs. 5000–15000.
- In the control group, 28% of them had businesses and 28% of them were in service. In the study group, 50.7% of them were homemakers.
- In the control group, 76.7% of them were married, while in the study group, 81.3% of them were married.
- In the control group, 88% of them were Hindus and in the study group, 85.3% of them were Hindus.
- In the control group, 48% of them had hypertension for more than three years. In the study group, 57.3% of them had hypertension for less than one year.

- In the study group, 50% of them did not have any disease and 43.3% of them had diabetes mellitus. In the control group, 48.7% of them did not have any disease and 50% of them had diabetes mellitus.
- In the control group, pre-test 60%, post-test 1 73.3%, and post-test 2, 60.1% of them adhered to the medication for hypertension. In the study group, pre-test 73.3%, post-test 99.3%, and post-test 2, 100% adhered to the medication for hypertension.

5. RECOMMENDATIONS:

Keeping in view the findings of the present study, the following recommendations are drawn for further practice and research:

1. The study can be conducted to assess the effect of educational intervention on the knowledge, attitude, and practice of high-risk patients for stroke.
2. A comparative study can be conducted to assess the effect of different educational interventions on knowledge and practice.
3. A similar study may be conducted with a different sampling technique and larger sample size.
4. A similar study may be conducted with a different research design.
5. A similar study can be carried out using different study settings.
6. Independent Nurse practitioner for NCD
7. Tele Nursing pilot project

LIMITATIONS OF THE STUDY

1. This study was limited to the hospitals of the selected geographical area.
2. The study was limited to patients with low socioeconomic status.
3. The study was limited to educational status from illiterate to primary education of patients.
4. The study was limited to the self-reported lifestyle of patients.

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