Implementation of a Post-stroke Depression Screening Protocol

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Introduction

- Strokes affect more than 795,000 people annually in the United States and are the leading cause of long-term disability in the U.S. costing 46 billion dollars in health care and missed days of work. It is the second leading cause of death worldwide.
- Post-stroke depression (PSD) is a common complication affecting approximately 33% of patients and is associated with increased morbidity and mortality.
- PSD has been linked to limited participation in rehabilitation as well as a decrease in physical and social activity. Further, PSD leads to a reduction in quality-of-life scores and an increase in inpatient length of stay accompanied by greater healthcare costs.

Purpose/Aims

- This Project aimed to improve the process of identifying post-stroke depression in the outpatient setting
- This project implemented a protocol using the Center for Epidemiologic Studies Depression Scale (CES-D) to screen for depression
- The tool was used at the patient's first primary care clinic visit after diagnosis of stroke
- Positive outcomes may lead to improved practices for similar clinics

Review of Literature

- An in-depth review of the literature was conducted using PubMed, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), and the OVID-Cochrane Database of Systematic Reviews.
- Ultimately, five studies were selected for review and synthesis. Only level I or II evidence was selected.
- Prior research has focused on different aspects of post-stroke morbidity and mortality. While there were many studies evaluating depression and treatment, few studies have compared depression screening efforts before and after a standardized tool and protocol were implemented.

Methods

Project Design:
- Quasi-experimental design, with pre-test and post-test groups as well as a retrospective chart review of a convenience sample
- Post-stroke patient charts were reviewed from 16 weeks prior to implementation of the screening protocol and 16-weeks after

Setting:
- Family Practice and Internal Medicine primary care clinics at Greater Regional Health in Southwestern rural Iowa

Participants:
- Patients 18 years of age and older who have been diagnosed with a stroke and complete their first post-hospitalization follow-up visit at one of Greater Regional Health clinics

Sampling:
- Convenience sample of 45 patients willing to participate who followed up 16 weeks prior to and 16 weeks after implementation of the protocol.

Intervention:
- Education on the purpose and use of the Center for Epidemiologic Studies Depression Scale (CES-D) was provided to the clinic nurses and providers
- Nurses were asked to provide the CES-D to each participant at the beginning of the follow-up visit
- Providers were educated on scoring, the significance of each score, and when treatment should occur

Data Collection:
- **Phase One:** Retrospective chart review to collect data for the pre-test group from the 16-weeks prior to implementation of the protocol
- **Phase Two:** Data collected from consenting participants in the 16-weeks after the project began
- **Phase Three:** Demographic data were collected and analyzed to determine any obvious differences between the pre- and post-test groups

Data Analysis

Research Questions:
- What impact on the number of depression screenings completed will the use of a standardized screening tool have on post-stroke patients, compared to not using one?
- What effect will the use of a standardized depression screening tool, compared to not using one, have on identifying post-stroke depression?
- What effect will the use of a standardized depression screening tool, compared to not using one, have on treating post-stroke depression with antidepressants, counseling, or both?
  - Fisher's Exact test used for evaluations

Primary variables:
- Was a depression screening completed
- Detection of depression
- Was treatment provided

Secondary factors:
- Age
- Gender & Race

Statistical Analysis:
- Sample size calculated through G*Power data analysis software, Minimum sample needed was 40
- 45 participants were obtained (n = 45)

Results

Results indicated a significant increase in the completion of depression screenings with a prevalence of 82.61%, compared to 31.82% in the pre-test group (p=0.001). There were also significantly higher positive depression screens 13.04%, compared to 9.09% in the pre-test group (p=0.003). 100% of patients with depression identified were treated.

Table 1

Number of Post-Stroke Depression Screening Evaluations Completed (N=45)

	Pre-Intervention Group		Post-Intervention Group		p-value *
	n	%	n	%	
Depression Screening					0.001
Yes	7	31.82%	19	82.61%	
No	15	68.18%	4	17.39%	

Table 2

Number of patients with positive depression screenings (N = 45)

	Pre-Intervention Group		Post-Intervention Group		p-value *
	n	%	n	%	
Depression Detection					0.003
Positive	2	9.09%	3	13.04%	
Negative	5	22.73%	16	69.57%	

* Fisher's Exact Test (Exact Significant 2-Sided)

Implications/Conclusion

- This project has shown that a significant increase in the identification of PSD can occur with the use of a standardized screening tool, and that screening completion increased with implementation of the standardized protocol.
- These findings suggest that providers should integrate a standardized depression screening at all follow-up visits after a stroke to better identify and treat post-stroke depression.
- Though there were limitations to this study including a small convenience sample, the information obtained indicates future nursing research should be conducted.
- This study only assessed PSD at the patient's first follow-up visit. Ideally, future nursing research will include longitudinal studies to see when depression symptoms are most likely to occur.
- Promptly identifying PSD will lead to improved treatment practices.

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