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How Teaching Interventions of Antiplatelet Medications Affect Patient Outcomes

Renee Roth
Pittsburg State University

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Renee Roth, BSN

Pittsburg State University, Irene Ransom Bradley School of Nursing

Abstract

With the elderly population expanding in the United States, primary care providers are having to place more emphasis on managing multiple disease etiologies and medication modalities in the outpatient clinic setting. Patients and providers struggle to overcome educational communication barriers that facilitate proper medication adherence and monitoring. The specific aim of this study was to evaluate whether antiplatelet education increases the patient's knowledge of medication understanding and possible adverse outcomes. Evaluation of antiplatelet knowledge was conducted in a rural health clinic in Columbus, Kansas. The study utilized an individual pre-test post-test design to patients receiving self-management and monitoring education in a Southeast Kansas rural primary care clinic. A paired t-test was run on a sample of 22 education participants to determine whether there was a statistically significant difference between pre-test and post-test scores of knowledge and confidence before and after educational intervention. The educational intervention video presented between the pretest and posttest surveys increased antiplatelet therapy knowledge in participants of this study. Educational interventions for medication teaching in different patient populations should be examined further, this study provides data that supports institution and nationwide implementations of patient teaching on anticoagulant and antiplatelet medications.

Purpose

Management and proper understanding of anticoagulant/antiplatelet medications and their use in the outpatient clinical setting is an under-addressed problem that has become costly for the healthcare system. There is substantial evidence to support adverse effects of improper monitoring and use of anticoagulants and antiplatelet medications; however, few studies address improved outcomes based on proper education and patient monitoring, especially related to gastrointestinal issues. By implementing an educational process in primary care offices, patients and health care providers can more diligently work as a team to understand and check their medication adverse effects. The purpose of an educational program such as this will improve patient outcomes, decrease healthcare spending on emergent and urgent endoscopic procedures and increase pharmacology knowledge in patients.

Methodology

Project Design:

For this project, a quantitative multiple choice study design was used to analyze patient knowledge of their aspirin medication treatment plans. A retrospective chart audit was done to identify patients who qualified for the study based on their current medications and health history. Data was collected and recorded using a multiple-choice scoring system
on a quantitative level.

Sample:

Participants were selected from the chart auditing system available at a family practice clinic located in Columbus, Kansas. Sample participants' information was reviewed within the rural clinic's charting system. Participants at a minimum must have been regularly seen at the Columbus office, are current on their yearly visits, overall compliant with their treatment plan and prescribed the antiplatelet therapy of aspirin. For the purpose of this study and limitation of resources, convenience sampling was utilized and the population of participants on selected antiplatelet therapy of aspirin in Columbus, Kansas will be used. The goal was to have a sample size of 20-30 participants.

Inclusion & Exclusion Criteria:

Participants must be between 21-85 years old, have a current prescription from their primary care provider for antiplatelet treatment, and have either a chronic or acute condition that requires the previously specified treatment.
Individuals who are non-English speaking, have developmental delays, are pregnant, are younger than 21 years old, are older than 85 years old, or are unable to independently manage their own healthcare and medications will be excluded from the research study.

Instruments:

The study focused on the antiplatelet therapy of aspirin. The chosen method of data collection yielded information by comparing the difference in pre-test and post-test scores after receiving pre-recorded computerized education using quantifiable multiple-choice answers. The questionnaires was used to assess the patients' pre-educational understanding of their medication and symptom monitoring as well as assess whether the patient understands why they are on these prescribed medications. The questionnaire shall contain 15 questions regarding the previous content that the participants will select the most appropriate of the multiple-choice answers that they believe is the correct answer. After the pre-test questionnaire is completed, participants will be instructed to read through linked online educational information that will discuss different educational highlights on antiplatelet medications. Once the pre-recorded PowerPoint has been viewed, participants will complete an identical multiple choice scored post-test questionnaire.

The following are the questions used in the study along with their corresponding correct answers, if applicable.

For each of the following questions, please select the best answer choice. Only one answer is permitted per question.

1. Which of the following is an antiplatelet medication?
Aspirin

2. How often should you take your antiplatelet medication?
Daily

3. In which situation should you tell your doctor that you are taking an anticoagulant?
During every visit

4. You would like to take an over-the-counter medicine, but you do not know if this medicine affects the way your antiplatelet works. With whom do you speak about this with?
Health professionals

5. What should you always carry with you when you are taking an antiplatelet?
Medical Alert bracelet

6. Which of the following is a common side effect of antiplatelet medications?
Bruises easily

7. In which situation should you contact your doctor right away?
If you have blood in your stool or vomit.

8. Which of the following over the counter medications should not be taken with an antiplatelet?
Pain Relief/NSAIDs: Ibuprofen/Aleve

9. Imagine you have forgotten to take the last dose of your medication. What are you going to do?
If I forget to take a dose, I should take it immediately, then continue as normal the following day. However, if it is almost time for the next dose, skip the missed dose and continue as normal.

10. When is it okay to take a double dose of your antiplatelet medication?
Never

11. What does your antiplatelet medication help to prevent you from?
Blood clots

12. In which situation should you call 911 or go to the emergency room immediately?
swelling of your mouth, lips, or tongue

13. Which of the following activities can affect anticoagulants in a negative way?
Smoking ½ pack of cigarettes daily

14. Imagine you are going to have a scheduled surgical procedure. When do you stop taking your antiplatelet medication?
Talk to your primary care provider first before you stop taking your antiplatelet therapy to get their recommendation on treatment.

15. Which of the following medications treats stomach ulcers and can help avoid unintentional side effects while taking antiplatelet medication?
Prilosec

16. How old are you?

17. What is your gender?

Results

After answering the fifteen research questions, additional statistical analyses were performed to support the statistical evidence. A paired samples test was performed to compare the pre and post-test questionnaire results comparing patient knowledge levels of antiplatelet therapy use before and after educational intervention. A paired test was used to determine if the confidence levels were elevated after educational interventions about antiplatelet therapy uses, risks, and adverse reactions were presented to participants in the study. A repeated-measures t-test found this difference between the pre-test and post-test results to be t=2.43, p=0.026, meaning that the findings were statistically significant.

Paired Samples Statistics

Table 17. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Post-test	14.3684	19	0.89508	0.20535
	Pre-test	13.000	19	2.38048	0.54612

Paired Samples Test

Table 18. Paired Samples Test

					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean			
Pair 1	Posttest - Pretest	1.36842	2.45426	0.56305	2.430	18	0.026

There was a statistical difference between the pre and post-test (t=2.43, p=0.026). The respondents did better on the post-test. The difference between the two means is 1.36.

Conclusion

Results from data analysis after evaluating the pre-test and post-test survey results revealed positive findings in the study that were relevant to the purpose of the research project. Analysis of the data demonstrated that the participants' antiplatelet therapy knowledge levels were significantly higher upon completion of the educational session. This suggests that the educational intervention video presented between the pretest and posttest surveys may affect antiplatelet therapy knowledge level.