Effect of Pamphlet on Knowledge Regarding Selected Anticoagulation Therapy among Cardiac Patients in Selected Hospitals in Metropolitan City

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Abstract

Introduction: Anticoagulant drugs are widely used in hospital and community settings. Anticoagulant drugs have an important role in the treatment and prevention of blood clots. Anticoagulants, which are considered "high alert medications," can often lead to adverse drug events in the inpatient and outpatient health-care setting if not managed appropriately. Many of anticoagulation-associated adverse effects result from medication errors, suggesting they are preventable. To avoid these issues, all healthcare workers who prescribe anticoagulants need to educate the patient and the family.

Aims: This study aimed to examine the effect of pamphlet on knowledge regarding selected anticoagulation therapy among cardiac patients.

Materials and Methods: A descriptive evaluative research approach with one group pre-test and post-test research design was used for the study. The study was conducted at Mumbai district. The sample comprised of 50 cardiac patient who fulfilled the inclusion criteria for the sample selection. Sample was selected using non-probability convenient sampling technique. Data were analyzed using descriptive and inferential statistics. In that Paired t-test to assess the effect of pamphlet on knowledge regarding selected anticoagulation therapy among cardiac patients.

Results: The result of this study showed that the pre-test the mean of the knowledge obtained by the cardiac patients was 12.600 and in post-test it increased to 21.260. It is evidence by the calculated t-value 18.877 is greater than tabulated value 2.010 at 0.05 level of significance.

Conclusion: Pamphlet was effective measure to improve knowledge regarding selected anticoagulation therapy among cardiac patients.

Keywords: Effect, anticoagulation therapy, cardiac patients, pamphlet

INTRODUCTION

"Use heart to beat cardiovascular disease" – World heart day theme (2020)

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Cardiovascular diseases (CVD) are the number one cause of death globally: More people die annually from CVDs than from any other cause. An estimated 17.9 million people died from CVDs in 2016, representing 31% of all global deaths. Of these deaths, 85% are due to heart attack and stroke. Over three quarters of CVD deaths take place in low- and middle-income countries. Out of the 17 million premature deaths (under the age of 70) due to non-communicable diseases in 2015, 82% are in low- and middle-income countries, and 37% are caused by CVDs. People with cardiovascular disease or who are at high cardiovascular risk (due to the presence of one or more risk factors such as hypertension, diabetes, hyperlipidemia, or already established disease) need early

detection and management using counseling and medicines, as appropriate.[1]

Anticoagulant drugs are widely used in hospital and community settings. Anticoagulation is the first-line treatment for venous thromboembolism and anticoagulant drugs have an important role in the treatment and prevention of blood clots. Anticoagulants, which are considered "high alert medications," can often lead to adverse drug events in the inpatient and outpatient health-care setting if not managed appropriately. High alert medications refer to drugs that have an increased risk of causing significant harm when used in error.[2] However, maintaining the equilibrium between clotting and bleeding can be challenging and anticoagulants have been identified as a class of drug associated with preventable patient harm. Many of anticoagulation-associated adverse effects result from medication errors, suggesting that they are preventable.[3] Therefore, national patient safety goals for the Joint Commission emphasize decreasing the possibility of patient harm due to anticoagulants (including apixaban, dabigatran, edoxaban, rivaxoraban, and warfarin) are recommend accurate and accessible patient education.[4]

Success and safety of oral anticoagulation therapy (OACs) are both dependent on patient education, good adherence to treatment, and communication between patients and the teams responsible for their clinical care. Thoughtful evaluation of patients' knowledge, satisfaction, and concerns in anticoagulation clinics helps to understand areas of improvement.[5]

Education plays a pivotal part in nursing care. Thus, the researcher stresses here the importance of educating patients through pamphlet to enhance their knowledge regarding selected anticoagulation therapy among cardiac patients in selected hospitals. This study aimed to examine the effect of pamphlet on knowledge regarding selected anticoagulation therapy among cardiac patients.

MATERIALS AND METHODS

Research approach
The research method adopted for the present study is descriptive approach.

Research design
In the present study, the investigator selected a non-experimental descriptive method to assess knowledge among cardiac patients

Variables
Dependent variables
Dependent variable of the study is knowledge of cardiac patients about selected anticoagulation therapy.

Independent variables
The independent variable is pamphlet which is intended to improve the knowledge of cardiac patients regarding anticoagulation therapy.

Population
In this study, population consisted of all cardiac patients with anticoagulation therapy.

Target population
In this study, target population consists of cardiac patients who are on anticoagulation therapy in metropolitan city.

Accessible population
In this study, the accessible population consists of 50 cardiac patients on anticoagulation therapy in a metropolitan city available during study.

Sampling technique
The sampling technique used in this research study is convenient sampling technique.

Sample size
In this study, the study samples consisted of the 50 cardiac patients who are on anticoagulation therapy.

Criteria for sample selection
Inclusion criteria
The following criteria were included in the study:
- Patients attending OPD or admitted in the selected hospitals
- Cardiac patients
- Patients must have been on anticoagulation therapy
- Patients who can read English, Hindi, and Marathi
- Patients who are present at the time of data collection
- Patients who are willing to participate in this study.

Data analysis
The collected data were coded, tabulated, and analyzed using descriptive statistics (mean, percentage, and standard deviation). The researcher planned to analyze the data in the following manner.
- The demographic data will be analyzed in terms of frequency and percentage and will be presented in the forms of tables and graphs
- Knowledge and practices will be analyzed using frequency and percentage and will be presented in the forms of tables and graphs
- One-way analysis of variance (ANOVA) will be used to assess correlation of knowledge with selected demographic variables

Data management and analysis procedure
- Data analysis to be done using descriptive and inferential statistics
- Consolidation and organization of data
- Frequency and percentage for the analysis of demographic characteristics of the respondent
- Mean and standard deviation for pre- and post-test scores in knowledge regarding selected anticoagulation therapy among cardiac patients
- The "t" test for observation of significant level of difference in pre- and post-test score on knowledge regarding selected anticoagulation therapy

- The ANOVA test to find out the association of knowledge score with selected demographic variables.

RESULTS

The data were entered into master sheet for tabulation and statistical processing, the obtained data were analyzed, organized, and presented under the following headings:
- Section I: Description on demographic variable of cardiac patients under the study
- Section II: Description of pre- and post-test knowledge score
- Section III: Description on the effectiveness of pamphlet on knowledge regarding selected anticoagulation therapy among cardiac patients
- Section IV: Description on the association of pre-test knowledge score of cardiac patients on anticoagulation therapy with their selected demographic variables

Section I: Description of demographic variable of cardiac patients under the study

Table 1 reveals the Table 1 depicts distribution of sample in relation to their age, gender, and education. Maximum sample 21 (42%) were from the age group of above 55. About 17 (34%) sample were from the age group of 46–55 years. About 10 (20%) were from the age group 36–45 years. Moreover, only 2 samples (4%) were from the age group of 25–35 years of age. Samples according to their demographic data gender, maximum sample 28 (56%) were male patients. Moreover, 22 (44%) cardiac patients were females. Other genders were zero. Sample according to their demographic data education, maximum 32 (64%) samples had completed their education up to primary. About 9 (18%) samples completed secondary, 6 (12%) were graduate and about 3 (6%) samples were illiterate. Sample according to their demographic data, anticoagulation therapy started since; maximum 23 (46%) samples were started anticoagulation therapy since 1–5 years. About 11 (22%) were started since <1 year, 9 (18%) were started since <5 years. Moreover, 7 (14%) started anticoagulation since <1 month. Sample according to their demographic data attended any health education program on anticoagulation therapy. The data specify that maximum 50 (100%) are not attended any health education program on anticoagulation therapy. Sample according to their professional status, maximum 27 (54%) samples were working, 20 (40%) were retired, and 3 (6%) were unemployed.

Section II: Description of pre- and post-test knowledge score

Table 2 explains pre- and post-assessment of knowledge levels regarding anticoagulation therapy among cardiac patients of selected hospital before and after administration of pamphlet. Pre-test explains that majority 28 (56%) had good knowledge. About 12 (24%) had average knowledge and about 10 (20%) had very good knowledge. After administration of pamphlet, the knowledge in post-test explains that majority 33 (66%)

had excellent knowledge and about 17 (34%) had very good knowledge.

Section III: Description on the effectiveness of pamphlet on knowledge regarding selected anticoagulation therapy among cardiac patients

Table 3 deals with the analysis of the pre-test and post-test knowledge regarding anticoagulation therapy among cardiac patients of selected hospital in metropolitan city.

Before calculating the "t" value null hypothesis ($H0_a$) and alternate hypothesis (H_{1a}) was stated. The two tailed "t" value for 0.05 level of significance was 2.010 for degree of freedom (df) = 49.

Table 1: Percentage wise distribution of cardiac patients on anticoagulation therapy according to demographic characteristics $n=50$

Demographic data	Frequency (f)	Percentage
Age in years		
25–35 years	2	4
36–45	10	20
46–55	17	34
Above 55	21	42
Gender		
Male	28	56
Female	22	44
Others	0	0
Education		
Illiterate	3	6
Primary	32	64
Secondary	9	18
Graduation	6	12
Anticoagulation therapy started since;		
<1 month	7	14
<1 year	11	22
1–5 year	23	46
>5 year	9	18
Attended any health education program on anticoagulation therapy		
Yes	0	0
No	50	100
Professional status		
Working	27	54
Retired	20	40
Unemployed	3	6

Table 2: Pre- and post-test knowledge score $n=50$

Overall knowledge levels	Range	Pre-test		Post-test	
		F	%	f	%
Poor knowledge	0–5	0	0	0	0
Average knowledge	6–10	12	24	0	0
Good knowledge	11–15	28	56	0	0
Very good knowledge	16–20	10	20	17	34
Excellent	21–25	0	0	33	66
Total		50	100	50	100

Table 3: Comparison of pre- and post-test knowledge score

Knowledge comparison	Mean	SD	MD	*t*-value	Table '*t*' value	P-value
Pre-test	12.6	2.777	8.66	18.877	2.01	<0.0001
Post-test	21.26	1.676				

The calculated "*t*" value was found to be 18.877 for knowledge. As the calculated "*t*" value is greater than the table "*t*" value 2.00 at 0.05 level of significance with the degree of freedom being 49, so the null hypothesis (H_{0a}) is rejected and H_{1a} is accepted. This shows that there is a statistically significant difference in the mean of pre- and post-test knowledge of the sample at 0.05 significant levels.

Section IV: Description of the association of pre-test knowledge score of cardiac patients on anticoagulation therapy with their selected demographic variable

Table 4 displays association of pre-test knowledge regarding anticoagulation therapy with demographic variables, that is, age, education and professional status of cardiac patients in selected hospital. ANOVA test is used to find out if any association exists between knowledge and practice with selected demographic variables of the samples. Based on the F test for unpaired sample, the calculated "*F*" value of knowledge score for age is 21.225, calculated "*F*" value for professional status is 5.869, for education is 51.759. The calculated "*F*" value for education of cardiac patients is more than their respective "*F*" table value at 0.05 levels. From above table signifies that there is association of age, education, and professional status of cardiac patients with knowledge within the group. We can state that there is statistically significant difference between the groups of demographic variables, that is, age, education, and professional status of cardiac with respect to knowledge test mean score. Hence, null hypothesis (H_{0b}) is rejected and alternate hypothesis (H_{1b}) is accepted for age of cardiac patients. This indicates that anticoagulation therapy knowledge is dependent on age of cardiac patients.

DISCUSSION

Anticoagulant drugs are widely used in hospital and community settings. There is an increasing trend in the number of patients who are receiving the anticoagulants for various CVD worldwide.[5]

The published articles related to patient education pertaining to anticoagulation are varied. Prioritizing patient education, institutionalizing the educational composition, and delivering the content are paramount. Oral anticoagulation is the second-most frequent cause of adverse drug events presented in emergency department all over the world. Risk of the major bleed is 8% per year.[6]

To avoid these issues, all healthcare workers who prescribe anticoagulants need to educate the patient and the family. The inter-professional team can include specialist physicians, primary care providers, hospitalists, nurse practitioners, specialty care nurses, and pharmacists. Anticoagulation and cardiac nurse specialists are involved in patient monitoring, patient and family education, and feedback to the team.

Patients should be educated in detail about the nature of drugs, drug benefits, dosage, complications, diet, relevance of Vitamin K, and the test required to optimize the dosage. Studies have confirmed that repeated education enhances the knowledge of the patient to deal with anticoagulation therapy.[7]

Education has been found to reduce complication rates and promotes the quality of life. Precise repeated education is useful in controlling target PT/INR values and reducing the adverse events.[8] Education about OACs has associated with immense satisfaction of treatment received with the lowered incidence of complications among patients.[9]

The higher the patient's literacy, the better is the awareness about OAC and conformity with prescriptions. Our studies found similar findings, but a repeated class enhances the knowledge even in poorly educated patients.[10] Illiteracy and poverty are the major obstacles for elaborate education and are the reason for the high rate of complications.[11,12] Educating patients in their own language is found to be more beneficial, so language of the patient should be the form of education regardless of the method of education. It has a prodigious impact and is found to enhance the compliance to treatment.[13] Good communication between doctor and patient, communication in patient language, and study design made as per patient literacy, and repeated communication establish a significant rate of benefits.[13-16]

In my study, there was a difference in knowledge score according to the level of age, gender, education, and

Table 4: Association of pre-test knowledge score of cardiac patients on anticoagulation therapy with their selected demographic variable

S. No.	Demographic variable of cardiac patients	*n*	Mean	Degree of freedom (df)	*F*-value	Table *F*-value	*P*-value
1	Age			49	21.225	4.04	0.05
	25–35 years	2	18				
	36–45 years	10	15.8				
	46–55 years	17	12.058				
	More than 55 years	21	11				
2	Education			49	51.759	4.04	0.05
	Illiterate	3	8.333				
	Primary	32	12.625				
	Secondary	9	15.444				
	Graduation	6	17				
3	Professional status			49	5.869	4.04	0.0053
	Working	27	13.555				
	Retired	20	11.1				
	Unemployed	3	14				

professional status. Illiterate patients had the lowest scores than the graduates, but the improvement in drug adherence was significant across patients of all educational groups, proving the efficacy of pamphlet on anticoagulation therapy. In our study, it has been evidently proven that cardiac patients' knowledge level improved after pamphlet administration.

Conclusion

It is obligatory to educate the patients who are on anticoagulation therapy. Patients must be educated on knowledge about disease, drug, PT/INR monitoring test, adverse reaction of drugs, the pattern of diet, and complications. Education should be in patient's language, graded as per the level of literacy. Repeated face to face discussion is desirable which benefit the most. Patient education increases drug compliance and reduces complication rates. Usage of social media application might enhance the results of educating patients on anticoagulation therapy.

This research also helps the researcher to understand the importance of providing knowledge regarding anticoagulation therapy.

Conflicts Of Interest

All authors declare that they have no conflicts of interest.

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