STAFFNURSES KNOWLEDGE ON PTCA: AN EVALUATIVE STUDY

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Abstract: Percutaneous Transluminal Coronary Angioplasty (PTCA) is an increasingly important revascularization strategy in coronary heart disease management and can be an emergent, planned or rescue procedure. Nurses play a critical role in delivering care in both independent and collaborative contexts of PTCA. Nurses are on the front lines in and out of the cardiac catheterization laboratory, providing care for patients with cardiovascular disease, which kills humans every year than cancer. An evaluatory approach with pre-experimental one group pre-test post-test design was used for this study. The study was carried out in KS Hegde Charitable Hospital, Derlakatte, Mangalore. The sample comprised of 30 staff nurses who met the inclusion criteria. The data was analyzed using descriptive and inferential statistics. The mean difference between post-test and pre-test knowledge score was very highly significant. There was significant association of pre-test knowledge score with selected demographic variables such as age (χ²1=4.83) and gender (χ²2=4.67) at 0.05 level of significance. On the contrary the chi square values of religion (χ²3=1.28), educational qualification (χ²4=0.71), years of experience (χ²5=1.43), area of experience (χ²6=1.53) and attendance in in-service educational programmes on PTCA(χ²7= 0.26) were not significant at 0.05 level of significance. The study showed that majority of the staff nurses had inadequate knowledge on pre and post procedural nursing care of PTCA; however the knowledge has significantly improved after the administration of self instructional module.

Key words: Effectiveness; Self Instructional Module; Pre and post procedural nursing care of Percutaneous Transluminal Coronary Angioplasty; Staff Nurses.

1. INTRODUCTION

PTCA is less invasive, less expensive and therefore an attractive alternative to open heart surgery. Angioplasty also is used as an emergency procedure during a heart attack. The risk of the complications following the PTCA procedure is fairly low. Overall the mortality rate following the procedure is less than 1%. According to American heart association in 2009 13,14,000 angioplasties were done in the united states. Of these 13,13,000 were percutaneous coronary interventions.8,55,000 men and 4,59,000 women had angioplasties. According to British heart foundation there are over one million men and 8,40,000 women living in the UK who have or have had angina. There was a total of 80,331 Percutaneous coronary intervention were performed in the calendar year 2008. This represents a rate of 1,308 Percutaneous coronary intervention per million population. One fifth of the deaths in India are from coronary artery disease. By the year 2020, it will account for one third of all deaths. Coronary heart disease will be the leading cause of morbidity and mortality even in developing countries by the year 2015. In 2003 approximately 50,000 angioplasties were done in India. According to 2009 statistics approximately 1,50,000 angioplasties were done in India.

A qualitative study was conducted in USA among 45 patients who had undergone Percutaneous Transluminal Coronary Angioplasty to describe the angioplasty experience from the patient’s unique perspective. Focus group interviews were used as the qualitative method for data collection. Data were analysed by using a constant comparative method. The results of the study revealed that patients expressed their anger over the unmet needs for comfort or support, feeling dehumanized and frustration with lack of control in decision making. Researcher concluded that patients had bitter dissatisfaction regarding several aspects of nursing care due to the lack of knowledge of staff nurses regarding PTCA. A quasi experimental study was conducted in Australia among 130 patients to evaluate whether a pre-procedural education program can improve knowledge and coronary risk factors approximately four months after having percutaneous transluminal coronary angioplasty. The sample is divided into experimental and comparison group. Knowledge and physical activity levels (p = 0.01) improved for both groups from pre-procedural phase of PTCA to the follow-up. Further, the experimental group showed favourable change in total cholesterol level (p = 0.01) at follow-up. Researcher concludes that importance of pre-procedural education program is an integral part of pre-procedural nursing care of PTCA.
A descriptive survey was conducted in Australia among 234 patients who had undergone coronary artery angioplasty to measure self reported responses to questions exploring patient’s risk factor reduction and understanding of their condition. The results of the survey were that sixty four percent of patients believed that their condition had been cured and had adopted no lifestyle modification. Researcher concluded that there is a major need for better health education and follow up care for patients after coronary artery angioplasty.

An experimental study was conducted in Mumbai among 2082 AMI patients to examine the effect of intravenous beta-blockers administered before primary percutaneous coronary intervention (PCI) on survival and myocardial recovery after acute myocardial infarction (AMI). A total of 1136 patients received beta-blockers before PCI, whereas 946 did not. The 30-day mortality was significantly lower in the group received intravenous beta-blockers than other. The multivariate analysis of the data shows that pre-procedural beta-blocker use was an independent predictor of lower 30-day mortality among patients without previous beta-blocker therapy (p = 0.02). The improvement in left ventricular ejection fraction from baseline to seven months was also greater after intravenous beta-blockers (p = 0.01). Researcher concluded that nurses should have adequate knowledge regarding pre-procedural intravenous beta-blockade as myocardial recovery is enhanced and 30-day mortality is reduced in patients undergoing therapy.

A descriptive survey was conducted in USA among 2050 patients to evaluate the current practice patterns of nursing for patients undergoing Percutaneous Transluminal Coronary Angioplasty. An eight-page questionnaire was completed by 70 hospitals participating in the study. Eighty-three percent of the hospitals use care plans for standardization of care. Ninety-one percent of the hospitals reported continuing to treat the patient with bed rest for an additional 6 hours after the sheath is removed. Comprehensive nursing standards of care based on well-designed clinical trials for patients after angioplasty are not available. Researcher concludes that to improve the nursing standards of care the nurse’s knowledge regarding PTCA must be improved.

II. MATERIALS AND METHODS

An evaluative research approach was used and the research design adopted for the study was pre experimental one group pre test post test design. After obtaining ethical committee approval and formal permission from the concerned authority, the data were collected from 50 staff nurses working in KS Hegde charitable hospital, Derlakatte, Mangalore as samples using convenience sampling technique after obtaining the written informed consent for participation in the research study. The reliability of the tool was established by Spearman Brown prophecy formula. The reliability was found to be 0.734. The data were collected by structured knowledge questionnaire which was prepared and used after obtaining content validity. Tool had two sections section A to assess demographic variables. Section B 30 items related to PTCA.

III. RESULTS

Section I: Demographic Data

Majority (79%) of the staff nurses were in the age group of 21 to 30 years. Nearly 76% of the staff nurses participated in the study were females and 56% of them had diploma in general nursing and midwifery as educational qualification. Nearly 50% of them were Christian, and 45% of them had clinical experience less than one year.

Section II: Pre-test and post-test knowledge scores regarding the pre and post procedural nursing care of PTCA

<table>
<thead>
<tr>
<th>Area</th>
<th>Maximum Score</th>
<th>Respondents Knowledge</th>
<th>Paired t test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Mean %</td>
<td>SD</td>
</tr>
<tr>
<td>Pre-test (X)</td>
<td>30</td>
<td>13.28</td>
<td>44.27</td>
</tr>
<tr>
<td>Post – test (Y)</td>
<td>30</td>
<td>23.58</td>
<td>78.6</td>
</tr>
<tr>
<td>Effectiveness (Y-X)</td>
<td>10.3</td>
<td>34.33</td>
<td>2.53</td>
</tr>
</tbody>
</table>

*p* table value = 2.0 at p < 0.05, df=49

The knowledge scores of staff nurses regarding the pre and post procedural nursing care of PTCA had revealed that, post-test mean knowledge score was found higher 23.58(78.6%) and SD of 2.52 when compared with pre-test mean knowledge score which was 13.28(44.27%) with SD of 2.48. The mean effectiveness score was 10.3 (34.33%) with SD of 2.53. The results of the study indicates the effectiveness of self instructional module in improving knowledge of the staff nurses.

Section III: Association of the pre-test knowledge scores with the selected demographic variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>&gt;M</th>
<th>&lt;M</th>
<th>Chi-square</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Age in years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) 21 – 30</td>
<td>15</td>
<td>24</td>
<td>4.83</td>
<td>Significant</td>
</tr>
<tr>
<td>b) 31 – 40</td>
<td>8</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) 41 and above</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Male</td>
<td>2</td>
<td>10</td>
<td>4.67</td>
<td>Significant</td>
</tr>
<tr>
<td>b) Female</td>
<td>22</td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

M= Median (13) Table value = 3.84, df=1 Table value = 5.99, df=2 p < 0.05
Calculated chi square values of two demographic variables age and gender were significant at 0.05 level of significance. On the contrary the chi square values of religion, educational qualification, years of experience, area of experience and attendance in any in-service educational programmes on nursing care of PTCA were not significant. Hence the null hypothesis is rejected and the research hypothesis is accepted for the demographic variables age and gender; the null hypothesis is accepted and the research hypothesis is rejected for the demographic variables religion, educational qualification, years of experience, area of experience and attendance in any in-service educational programmes on nursing care of PTCA. Thus it is concluded that there was significant association of pre test knowledge score of staff nurses on pre and post procedural nursing care of PTCA and their age and gender.

IV DISCUSSION

The findings of this study reveals that in the pre test, majority 72% of the sample obtained scores ranging between 13 and 18 and none of the staff nurses scored above the score 18. Assessment of the level of knowledge of the staff nurses after the administration of Self Instructional Module shows that majority of the respondents 62% had good knowledge score and 36% had very good knowledge score on pre and post procedural nursing care of PTCA. It shows that Self Instructional Module on pre and post procedural nursing care was very effective in improving the knowledge level of staff nurses. The findings are supported by a study conducted in Chandigarh to evaluate the effectiveness of self instructional module on nursing management of patients having chest tube drainage India. Pre test and post test knowledge scores were compared and the findings were analysed statistically. The post test knowledge scores were significantly higher than the pre test knowledge scores which indicates that the self instructional module on nursing management of patients having chest tube drainage was highly effective in enhancing the knowledge level of staff nurses.

V. CONCLUSIONS

The following conclusions were drawn on the basis of the findings of the study:

1. In the pre test, the distribution of staff nurses according to their level of knowledge showed that 2% had very poor knowledge, 28% had poor knowledge and 70% had average knowledge on pre and post procedural nursing care of PTCA.

2. Mean percentage of the knowledge score in the pre test was 44.27% with mean and SD of 13.28±2.48, which had increased after administration of self instructional module with mean percentage of knowledge score in the post test by 78.6% with mean and SD of 23.58±2.52. The self instructional module tested in the study was found to be effective (t= 28.61, p < 0.05) in improving the knowledge on pre and post procedural nursing care of PTCA among staff nurses. This shows that self instructional module is an effective teaching method for providing information.

3. Association of demographic variables with pre test scores was computed using chi- square test. Analysis showed that, there is association between the pre test knowledge scores with selected demographic variables.

VI. REFERENCES


VII. ACKNOWLEDGEMENT

Our special thanks to all the participants who enthusiastically participated in the study for being very co-operative and also adding light to our studies with their heartfelt expression.

Conflict of Interest

The authors declare that they have no competing interest.