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Research Article

Assessment of knowledge regarding coronary angioplasty (PTCA) in selected hospitals of Navi-Mumbai

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Abstract

Percutaneous Transluminal Coronary Angioplasty (PTCA) is the most common procedure done for the treatment of coronary artery disease. It is a minimally invasive technique in which some plaques in the arteries of the heart are flattened against the arterial walls, resulting in improved circulation to the heart muscle. The procedure involves threading a catheter through the vessel to the atherosclerotic plaque, inflating and deflating a small balloon at the tip of the catheter several times, and then removing the catheter. The leading cause of morbidity and mortality in India is Coronary artery disease. Intra coronary stent placements have emerged as alternative treatment choice to coronary artery surgery in the management of coronary artery disease. A very few studies were conducted on this aspects. Especially many Indian studies have not been carried on this aspect. The findings showed that in post test 10% of the patients had excellent level of knowledge, 58% of them had very good, 30 % of the patients had good knowledge, 02% of the patients had average knowledge score. Thus, it was concluded that self instructional module (SIM) on post PTCA home care among patients was found to be effective. It can be concluded that the self instructional module (SIM) helped the patients to improve their knowledge about post PTCA home care. Also analysis revealed a very high association between knowledge score with age, gender, education, occupation and income.

Keyword: Percutaneous Transluminal Coronary Angioplasty, Indian studies, Coronary artery disease, prevent complications, maximum restoration health,

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1. Introduction

Percutaneous Transluminal Coronary Angioplasty (PTCA) is the most common procedure done for the treatment of coronary artery disease. It is a technique in the treatment of atherosclerotic coronary heart disease and angina pectoris in which some plaques in the arteries of the heart are flattened against the arterial walls, resulting in improve circulation. The procedure involves threading a catheter through the vessel to the atherosclerotic plaque, inflating and deflating a small balloon at the tip of the catheter several times, and then removing the catheter. The procedure is performed under radiographic or ultrasonic visualization. When it is successful, the plaques remain compressed and the symptoms of heart disease, including the pain of angina, are decreased. The alternative to this treatment is coronary bypass surgery, which is more expensive and dangerous and requires longer hospitalization and rehabilitation an invasive procedure and operation is a means of medical treatment to remove the pathological parts of the body and cure the abnormalities of some body organs. No matter how major or minor a procedure and operation is, it tends to cause a high degree of anxiety to every patient. Although some of the patients know in advance that they are going to be treated by an operation, they cannot help feeling worried, anxious and nervous and about the upcoming surgical treatment [1]. A descriptive study was done in University hospital Turkey in 60 samples to find out patient's perspective of treatment benefit of PTCA. Findings reveal that 96.7% had wrong interpretation of complete recovery from disease before and after the PTCA [2]. Another study was conducted in University of Ottawa Heart Institute to identify the perceived learning needs of balloon angioplasty patients among 251 samples. Samples completed PTCA Learning needs inventory (PTCALNI) and items for knowledge of results of angioplasty, symptom management and life style modification scored highest [3]. Education program for cardiac patients are essential part of quality health care today. Hence the effectiveness of the therapeutic health regimen, to be beneficial, requires that the patient must be informed about their own health and motive to share responsibility in maintaining good health [4]. According to Oxford

Learner's dictionary, PTCA is a surgical operation for enlarging the narrowed lumen of a coronary artery by inflating and withdrawing through the stenotic region a balloon on the tip of an angiographic catheter [5].
Percutaneous Transluminal Coronary Angioplasty (PTCA) is a minimally invasive procedure to open up blocked coronary arteries, allowing blood to circulate unobstructed to the heart muscle.

The data was collected from 50 subjects from Navi Mumbai. The present study was taken up to assess the effectiveness of Self Instructional Module (SIM) on knowledge regarding home care of the patient who have under gone Percutaneous Transulominal Coronary Angioplasty (PTCA) in selected hospitals of Navi Mumbai. A structured questionnaire to collect knowledge was used for data collection. The analysis was done with the help of inferential and descriptive statistics.

Figure I.1:- CONCEPTUAL FRAMEWORK

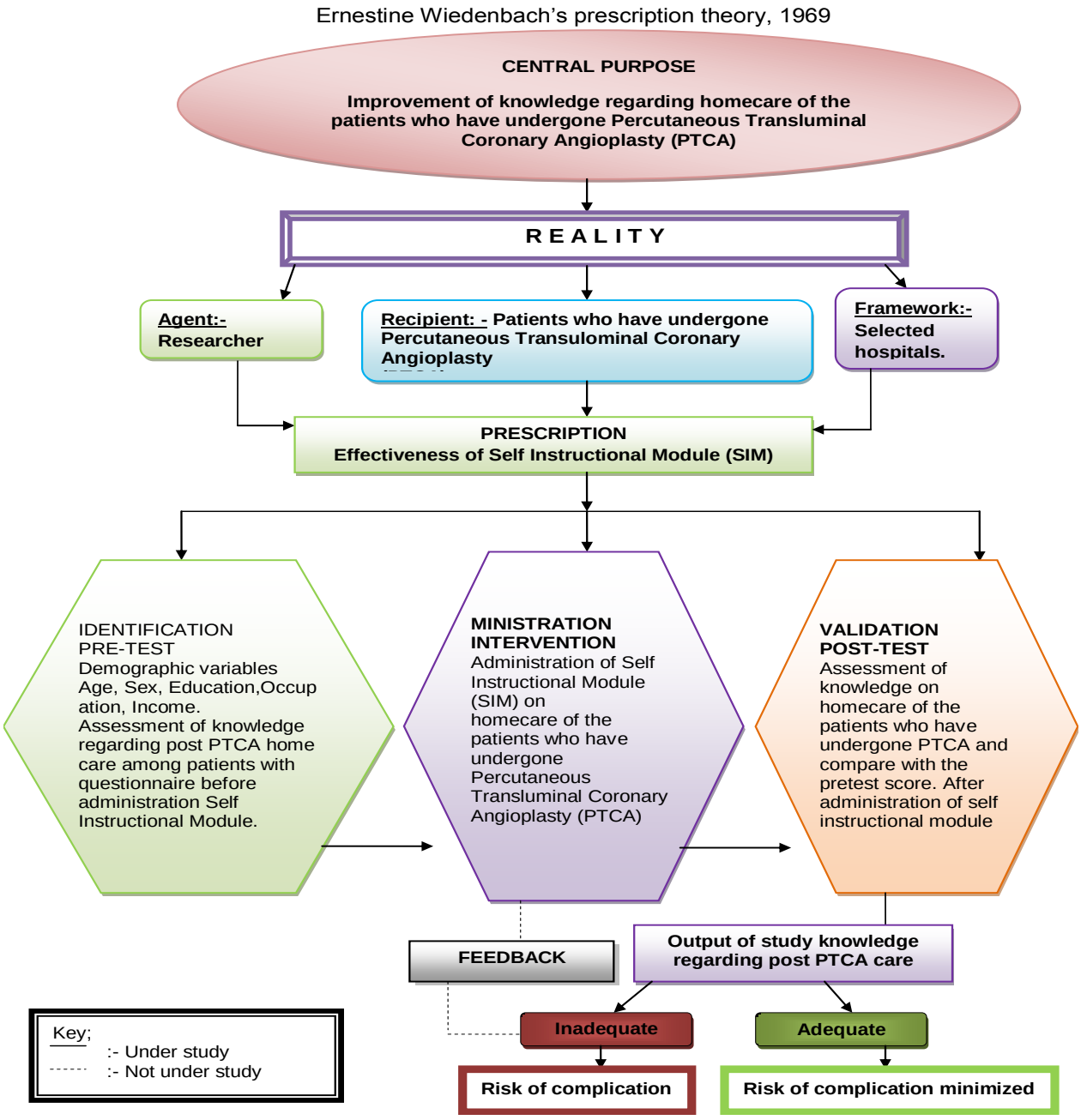


Fig1. Percutaneous Transluminal Coronary Angioplasty (PTCA) and knowledge regarding home-care of the patients

This study deals with the distribution of patients in the selected hospitals of Navi Mumbai in relation to knowledge regarding post PTCA home care according to their demographic variables. A convenient sample of 50 subjects was drawn from the study population, who were under vent for Percutaneous Transluminal Coronary Angioplasty (PTCA) in selected hospitals of Navi Mumbai. The data obtained to describe the sample characteristics including Age, Gender, Education, Occupation, and Income are presented in frequency and its percentage.

Table 1 Percentage wise distribution of patients according to selected demographic characteristics.

n=50

Demographic variables	Frequency (n)	(%)
Age (years)		
25 – 35years	02	4%
36-45Years	08	16%
46-55 years.	15	30%
56-65years	13	26%
66-75years	12	24%
76 and above	00	00%
Gender		
Male	36	72%
Female	14	28%
Educational qualification		
Post graduate	01	2%
Graduate	10	20%
Post high school/ diploma	09	18%
High school certificate	06	12%
Middle school certificate	11	22%
Primary school certificate	10	20%
Occupation		
Labour	10	20%
Service	11	22%
Business	09	18%
Executive	00	00%
House wife	04	08%
Retired	07	14%
Unemployed	09	18%
Income per month (RS/-)		
Less than 1600	18	36%
1601 – 4809	12	24%
4810 – 8009	12	24%
8010 – 12019	04	08%
12020 – 16019	02	04%
16020 – 32049	01	02%
Above 32050	01	02%

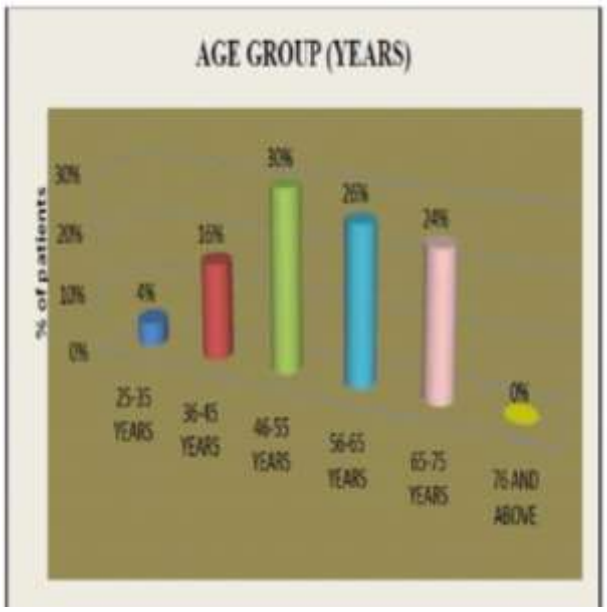


Figure 2 Cylindrical diagram showing distribution of patients according to their age (in years)

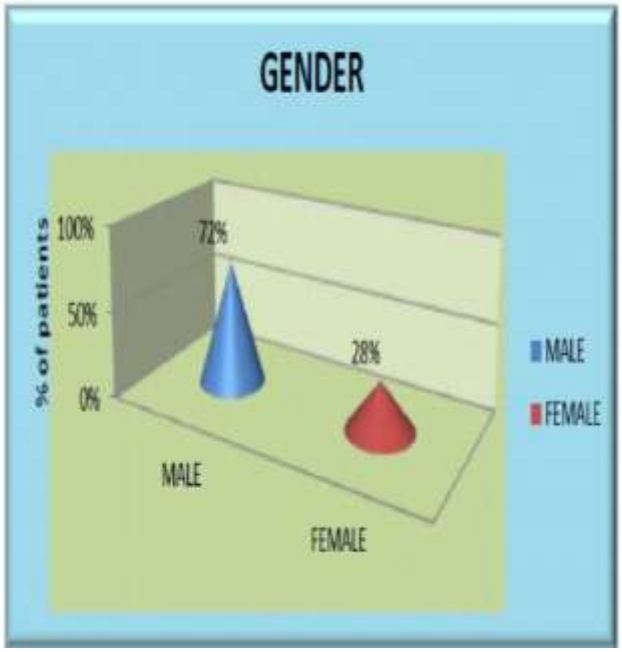


Figure 3 Conical diagram showing distribution of patients according to their gender.

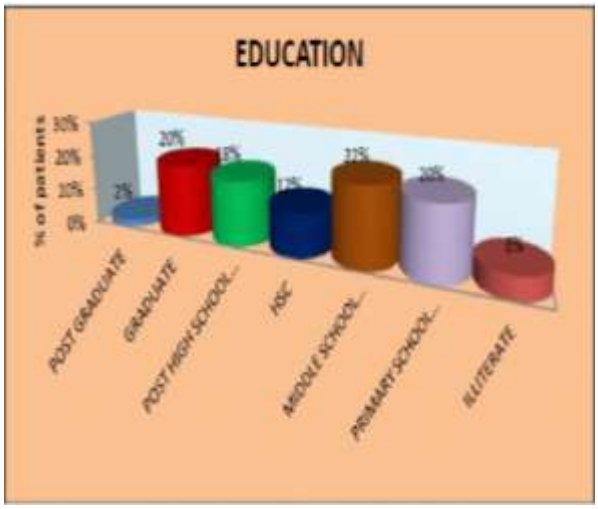


Figure 4 Cylindrical diagram showing distribution of patients according to their education.

Figure 5 Cylindrical diagram showing distribution of patients according to their occupation

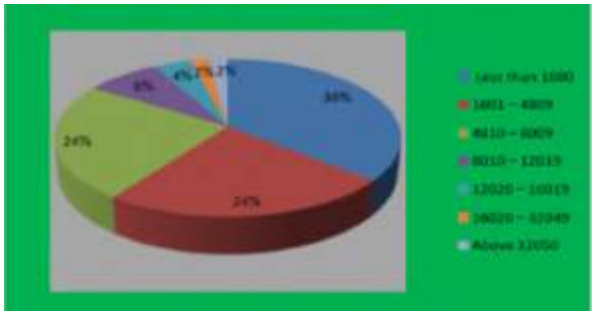


Figure 6 Pie diagram showing distribution of patients according to their income per month

Assessment of existing level of knowledge regarding post PTCA home care among patients before administration of self instructional module (SIM)

The assessment of existing knowledge regarding post PTCA home care among patients before administration of SIM in the selected hospitals. The level of knowledge grouped as Average, Good, Very good and Excellent

Table 2 Existing level of knowledge regarding post PTCA home care among patients before administration of SIM.

n=50

Level of knowledge score	%	Pre test			
		Frequency (n)	%	Mean	SD
Poor	0-5	02	04	9.56	2.63
Average	6-10	28	56		
Good	11-15	20	40		
Very good	16-20	00	00		
Excellent	21-25	00	00		

The above table show that in pre test 30 (60%) of the patients were having poor and average knowledge regarding post PTCA home care, 20 (40%) good and none of have very good and excellent level of knowledge score. The minimum score in pre test was 03 and the maximum score was 15, the mean score for the pre test was 9.56 and the standard deviation are 2.63.

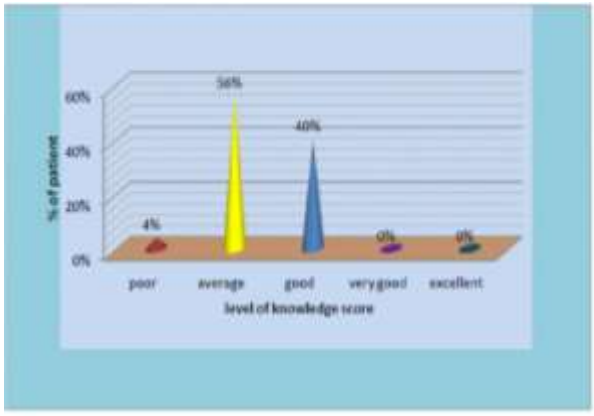


Figure 7 Conical diagram showing assessment of existing level of Knowledge regarding post PTCA home care among patients in the selected hospitals of Navi Mumbai.

Assessment of post test knowledge score regarding post PTCA Home care among patients after administration of SIM

The assessment of post test Knowledge regarding post PTCA home care among patients in the selected hospitals. The post test was given after seven (7) days of providing SIM.

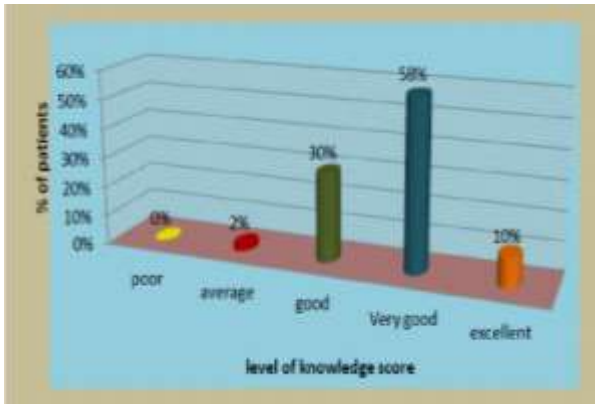
Table 3 Post test knowledge score regarding post PTCA home care among patients.

n=50

Level of knowledge score	Percentage Score	Post test			
		Frequency (n)	%	Mean	SD
Poor	0-5	00	00	16.70	3.00
Average	6-10	01	02		
Good	11-15	15	30		
Very good	16-20	29	58		
Excellent	21-25	05	10		

The above table shows that in post test 01(02%) of the patient were having average knowledge, 15 (30%) had good knowledge, 29(58%) very good and 05(10%) of them had excellent level of knowledge score and none of have poor knowledge. The minimum score in post test was 10 and the maximum score was 25, the mean score for the post test was 16.70 and the standard deviation is 3.00.

Figure 8 Cylindrical diagram showing assessment of post test knowledge Score regarding post PTCA home care among patients in the selected hospitals of Navi Mumbai.



Evaluation of effectiveness of Self Instructional Module (SIM) on knowledge regarding post PTCA home care among patients

The effectiveness of Self Instructional Module (SIM) on knowledge regarding post PTCA home care was assessed among patients The hypothesis was tested statistically with distribution of pre test and post test mean and standard deviation. The level of knowledge during the pre test and post test are compared to prove the effectiveness of self Instructional Module (SIM). The significance of difference at 5% level of significance was tested with't' test and tabulated 't' value is compared with calculated 't' value. Also the calculated 'p' value is compared with acceptable 'p' value i.e.0.05.

Pre test and post test knowledge score

Table 4 Pre and post test knowledge score before and after administration of SIM.

n=50

Level of knowledge score	Percentage Score	Pre Test			Post test		
		Frequency	%	Mean Score	Frequency	%	Mean Score
Poor	0-5	00	04%	9.56	00	00%	16.70
Average	6-10	01	56%		01	02%	
Good	11-15	15	40%		15	30%	
Very good	16-20	29	00%		29	58%	
Excellent	21-25	05	00%		05	10%	

The above table show that in pre test 02 (4%) of the patients were having poor knowledge, 28 (56%) had average, 20 (40%) good and none of have very good and excellent level of knowledge score. The minimum score in pre test was 03 and the maximum score was 15, the mean score for the pre test are 9.56 and the standard deviation was 2.63. Whereas in post test

01(02%) of the patient were having average knowledge, 15 (30%) had good knowledge, 29 (58%) very good and 05(10%) of the them had excellent level of knowledge score and none of have poor knowledge. The minimum score in post test was 10 and the maximum score was 25, the mean score for the post test was 16.70 and the standard deviation was 3.00.

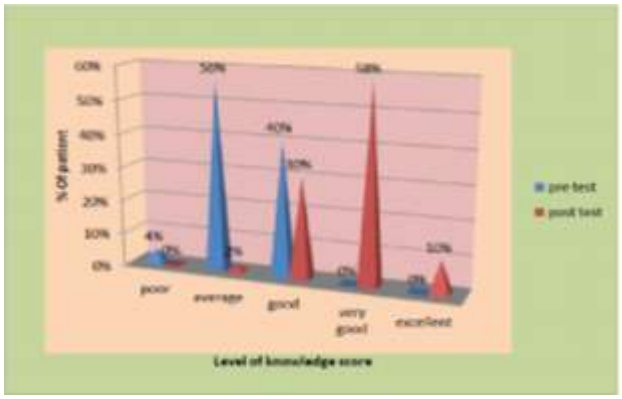


Figure 9 Conical diagram showing pre test and post test knowledge score before and after administration of SIM.

Effectiveness of self instructional module regarding post PTCA home care among patients in the selected Hospitals of Navi Mumbai

The effectiveness of Self Instructional Module (SIM) among patients in selected hospitals of Navi Mumbai. The hypothesis is tested statistically with distribution of pre test and post test mean and standard deviation. The level of knowledge during the pre test and post test are compared to prove the effectiveness of self instructional module. Significance of difference at 05% level of significance is tested with't' test and tabulated 't' value is compared with calculated 't' value. Also the calculated 'p' value is compared with acceptable 'p' value i.e.o.5.

Table 5 Effectiveness of Self Instructional Module (SIM) in knowledge score regarding post PTCA home care among patients in the selected hospitals of NaviMumbai.

n =50

Test	Mean	Standard deviation	Calculated t- value	Degree of freedom	P-value	Significant
Pre Test	9.56	2.63	-18.0345	49	0.000	S,P<0.05
Post Test	16.70	3.00				

The table shows that in the pre-test the mean of the knowledge obtained by the patients was 9.56 and in the post test it increased to 16.70. it is evidenced by the calculated value -18.0345 is greater than tabulated value -9.48 at 5% level of significance . Hence the research hypothesis H1 is accepted.

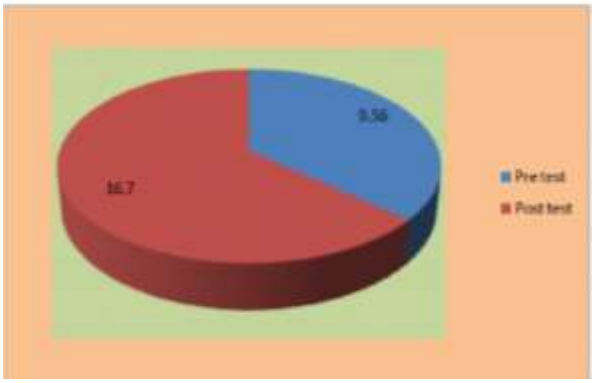


Figure 10 Effectiveness of Self Instructional Module (SIM) among patients in the selected hospitals of Navi Mumbai.

Association of Knowledge score in relation to demographic variables

Table 6 Association of pre test knowledge score regarding post PTCA home care in relation to age.

n =50

Age group	Number of cases	Mean pre test knowledge score	SD	Chi squire value	P-value
25-35 years	2	12.0	1.4	8.979	0.344
36-45 years	8	10.3	2.4		
46-55 years	15	9.3	2.1		
56-65 years	13	9.2	3.0		
65-75 years	12	9.3	3.2		
76 and above	0	0.00	0.00		

This table shows the pre test score association of knowledge score with the age in year of patients. The chi square values are 8.979. Also the calculated 'p' =0.344 which was much more than the acceptable level of significance i.e 'p'=0.05. Hence it is interpreted that there is no significance in the knowledge score of pre test with age in year of patients.

Table 7: Association of post test knowledge score regarding post PTCA home care in relation to age.

Age group	No of cases	Mean pre test knowledge score	SD	Chi squire value	P-value
25-35 years	2	18.5	2.1	11.6	0.020
36-45 years	8	18.3	3.6		
46-55 years	15	16.5	3.5		
56-65 years	13	16.7	2.2		
65-75 years	12	15.6	2.6		
76 and above	0	0.00	0.0 0		

This table shows the post test score association of knowledge score with the age in year of patients. The chi square values are 11.6. Also the calculated 'p' =0.020 which was much less than the acceptable level of significance i.e 'p'= 0.05 .Hence it is interpreted that there is statistical significance in the knowledge score of post test with age in year of patients.

Table 8 Association of pre test knowledge score regarding post PTCA home care in relation to sex.

n =50

Sex	No. of cases	Mean knowledge score	SD	Chi squire value	P-value
Male	36	9.5	2.66	1.353	0.508
Female	14	9.6	2.65		

This table shows the association of pre test knowledge score with gender of patients. The chi squire value is 1.353. Also the calculated 'p'=0.508 which was much higher than the acceptable level of significance i.e 'p'=0.05. Hence it is interpreted that gender of patient is not associated with their pre test knowledge score.

Table 9: Association of post test knowledge score regarding post PTCA home care in relation to gender

n =50

Gender	Number of cases	Mean knowledge score	SD	Chi squire value	P-value
Male	36	9.5	2.66	1.172	0.760
Female	14	9.6	2.65		

The table shows that association of post test knowledge score with gender of patients. The chi squire value is 1.172. Also the calculated 'p'=0.760 which was much higher than the acceptable level of significance i.e 'p'=0.05. Hence it is interpreted that gender of patient is not associated with their post test knowledge score.

Table 10 Association of pre test knowledge score regarding post PTCA home care in relation to education.

n =50

Education	No. of cases	Mean knowledge score	SD	Chi squire values	P-value
Post graduate	01	7.0	00	13.883	0.308
Graduate	10	7.6	2.91		
Post high school Diploma	09	9.7	2.50		
HSC	06	10.3	2.42		
Middle school certificate	11	9.7	2.28		
Primary school certificate	10	11.1	2.42		
Illiterate	03	9.3	1.53		

The table shows the pre test score association of knowledge score with the education of patients. The chi square values are 13.883. Also the calculated 'p' =0.308 which was much more than the acceptable level of significance i.e 'p'=0.05. Hence it is interpreted that education of patients is not associated with their knowledge score in pre test.

Table 11: Association of post test knowledge score regarding post PTCA home care in relation to education.

n =50

Education	No. of cases	Mean knowledge score	SD	Chi squire values	P-value
Post graduate	01	15.0	00	23.9	0.021
Graduate	10	15.3	3.43		
Post high school Diploma	09	16.9	2.85		
HSC	06	19.3	2.58		
Middle school certificate	11	16.7	3.93		
Primary school certificate	10	16.8	1.23		
Illiterate	03	15.7	0.58		

The table shows the post test score association of knowledge score with the age in year of patients. The chi square values are 23.9. Also the calculated 'p' = 0.021 which was much less than the acceptable level of significance i.e. 'p'= 0.05 .Hence it is interpreted that education of patients is statistically associated with their knowledge score in post test.

Table 12: Association of pre test knowledge score regarding post PTCA home care in relation to occupation.

n =50

Occupation	No. of cases	Mean knowledge score	SD	Chi squire values	P-value
Labour	10	9.4	3.2	8.202	0.609
Service	11	9.9	2.5		
Business	09	10.1	2.4		
Executive	00	00	00		
House Wife	04	8.8	3.8		
Retired	07	10.1	2.7		
Unemployed	09	8.7	2.0		

The table shows that pre test score association of knowledge score with the occupation of patients. The chi square values are 8.202. Also the calculated 'p' =0.609 which was much more than the acceptable level of significance i.e 'p'=0.05. Hence it is interpreted that occupation of patients is not associated with their knowledge score in pre test.

Table 13: Association of post test knowledge score regarding post PTCA home care in relation to occupation.

n =50

Occupation	No. of cases	Mean knowledge score	SD	Chi squire values	P-value
Labour	10	15.7	2.9	24.0	0.008
Service	11	16.6	3.4		
Business	09	18.4	3.4		
Executive	00	00	00		
House Wife	04	17.8	2.6		
Retired	07	16.9	2.5		
Unemployed	09	15.6	2.4		

The table shows the post test score association of knowledge score with the age in year of patients. The chi square values are 24.0. Also the calculated 'p' =0.008 which was much less than the acceptable level of significance i.e 'p'= 0.05 .Hence it is interpreted that occupation of patients is statistically associated with their knowledge score in post test.

Table 14: Association of pre test knowledge score regarding post PTCA home care in relation to income.

n =50

Income	No. of cases	Mean knowledge score	SD	Chi squire values	P-value
less than 1600	18	8.4	2.12	14.792	0.253
1601 - 4809	12	8.9	2.84		
4810 -8009	12	10.8	2.52		
8010 -12019	04	12.3	1.26		
12020-16019	02	8.5	3.54		
16020-32049	01	11.0	00		
Above 32050	01	12.0	00		

The table shows the pre test score association of knowledge score with the income of patients. The chi square values are 14.772. Also the calculated 'p' =0.253 which was much more than the acceptable level of significance i.e 'p'=0.05. Hence it is interpreted that income of patients is not associated with their knowledge score in pre test.

Table 15: Association of post test knowledge score regarding post PTCA home care in relation to income.

Income	No. of cases	Mean knowledge score	SD	Chi squire values	P-value
less than 1600	18	15.7	2.65	24.381	0.143
1601-4809	12	16.5	3.03		
4810-8009	12	17.8	3.16		
8010-12019	04	18.0	2.16		
12020 - 16019	02	14.0	1.41		
16020 – 32049	01	17.0	00		
above 32050	01	23.0	00		

The table shows the post test score association of knowledge score with the income of patients. The chi square values are 24.38. Also the calculated 'p' =0.143

which was much more than the acceptable level of significance i.e 'p'= 0.05 .Hence it is interpreted that occupation of patients is not associated with their knowledge score in post test.

Discussion

The study was undertaken with the main purpose of assessing the level of knowledge of patients regarding post PTCA home care with the help of Self Instructional Module, the findings of the study were discussed based objectives and hypothesis. Distribution of responds in relation to age revealed that 4% of simple were of age group of 25-35 years, 16% were of age group of 36-45 years, 30% were of age group of 46- 55years, and 26% were of age group of 56-65 years, 24% were of age group of 65-75 years. The chi square values are 11.6. Also the calculated 'p' =0.020 which was much less than the acceptable level of significance i.e 'p'= 0.05 .Hence it is interpreted that age in year of patients is statistically associated with their knowledge score. Distribution of respondents in relation to education of patients revealed that, 2% of sample had education of post graduate, 20% of sample had graduate, 18%pf sample had post high school diploma, 12 % of had HSC, 22% of sample has middle school education, 20% of sample had primary school education, 6% sample is a illiterate. The chi square values are 23.9. Also the calculated 'p' = 0.021 which was much less than the acceptable level of significance i.e 'p'= 0.05, hence it is interpreted that age in year of patients is statistically associated with their knowledge score. Distribution of respondents in relation to occupation of patients revealed that, 20% of samples had occupation as labour, 22% of sample had service, 18% of sample had business, 8% of sample had house wife, 14% of sample had retired and 18% of sample had unemployed. The chi square values are 24.0. Also the calculated 'p' =0.008 which was much less than the acceptable level of significance i.e 'p'= 0.05 hence it is interpreted that age in year of patients is statistically associated with their knowledge score. In this study, the findings revealed that, the overall calculated t-value was - 18.0345, mean and standard deviation and mean difference values are compared and patient's paired't' test is applied at 5% level of significance. The tabulated value for n=50-1 i.e: 49 degree of freedom was -9.48. the calculated 't; value are much higher than the tabulated value are much higher than the tabulated value at 5% level of significance for all over and area wise knowledge score of patients which is statistically acceptable level of significance. Hence it is statistically interpreted that the SIM on overall area wise knowledge score regarding home care measures among patients was effective. The post introduction of SIM phase there was difference in the knowledge score of the patients. The study find 0 - 49% = inadequate knowledge, 50-74 % = moderately adequate knowledge, 75 -100% = adequate knowledge, that means SIM was effective in improving the knowledge of the patients.

Conclusion

The patients had very less knowledge regarding post PTCA home care. There was a significant increase in the knowledge of patients after the introduction of self instructional module (SIM). To find the effectiveness of self instructional module (SIM) paired't' test was applied and post test score was significantly higher at 0.05 level than that of pre test score. The findings shows that in post test 10% of the patients had excellent level of knowledge, 58% of them had very good, 30 % of the patients had good knowledge, 02% of the patients had average knowledge score. Thus it was concluded that self instructional module (SIM) on post PTCA home care among patients was found to be effective. Hence, based on the above cited findings, it was concluded undoubtedly that the written prepared material by the investigator in the form of self instructional module (SIM) helped the patients to improve their knowledge about post PTCA home care. Also analysis revealed that there is very high association between knowledge score with age, gender, education, occupation and income.

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