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RESEARCH ARTICLE

A STUDY TO ASSESS THE EFFECTIVENESS OF TRANSITIONAL CARE NURSING PACKAGE ON HEALTH RELATED QUALITY OF LIFE AMONG CLIENTS WITH CORONARY ARTERY DISEASE.

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Abstract

Background: Coronary artery disease (CAD) is connected with poor patient health status and deterioration of health-related quality of life. The magnitude of the impact of coronary artery disease on an individual's quality of life is due to the demanding long term changes in lifestyle coupled with the huge economic burden of treatment and rehabilitation. Health related quality of life (HRQOL) as a multidimensional construct demonstrates functional dimensions, patient's subjective understanding of his bio psychosocial health status and productivity affairs.

Aim: To assess the effectiveness of transitional care nursing package on health related quality of life of clients with coronary artery disease.

Materials and Methods: A quasi experimental pre-test, post-test design was used. A Sample of 290 coronary artery disease clients (study group-146, control group -144) were selected by non probability convenience sampling technique. SF-36 Health Survey Tool was used to assess the HRQOL.

Results: In pre-test assessment of HRQOL, 4.1% of them having low level, 87.7% were having moderate level, 8.2% of them were having high level & none of them having very high level of HRQOL. After administration of transitional care nursing package to study group the HRQOL was improved to high level for majority 76.7% of respondents and 6.8% had achieved very high level of HRQOL and none of them had low level of HRQOL. The mean and standard deviation in the pre and post test level of HRQOL among CAD clients was 351.12, SD 38.45 and 506.84; SD 48.65 respectively with the mean difference level of 155.71. Hence the transitional care nursing package was effective in improving the level of HRQOL at $p < 0.001$ level.

Conclusion: Comprehensive transitional care nursing programs helps to enhance care during transitions between settings that can reduce not only hospital readmissions but also helps to improve health related quality of life (HRQOL) by adapting positive health behaviors after discharge from acute care settings.

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Introduction:-

Coronary artery disease is the leading cause of death in developed and developing countries accounting for over 40% of CVD deaths and 15% of all deaths in the world (WHO, 2017). India is experiencing epidemiologic transition with sharp increase in coronary artery disease which is alarmingly high leading to the most common cause of premature mortality in 2016. There is a growing burden of coronary risk factors owing to rapid urbanization and changes in lifestyle, including diabetes mellitus (DM), hypertension, dyslipidemia, smoking, alcohol consumption, dietary patterns, central obesity, physical inactivity and psychological factors. These risk factors attribute 90% of CAD in population.

In addition to mortality, CAD is also responsible for morbidity and loss of quality of life (QOL). CAD has significant physical, emotional, and social impact for patients; so, evaluating their QOL is necessary for assessing the success of treatment and it may be used for modifying or improving the treatment given, or for providing treatment alternatives. Recovering from a cardiac event is a complex procedure that presents psychological and physical needs that continue after discharge from hospital. As the patient becomes anxious, scared, and depressed it has a significant impact on patient quality of life (QOL). These emotional complications can limit the patient's activities of daily living, work performance, and relationships. The transition from hospital to home or other care settings can be a challenging and confusing journey for patients and their families that is fought with challenges. Preventing avoidable readmission has the potential to profoundly improve both QOL for patients and the financial wellbeing of health care system.

Thus, an improvement in health-related quality of life (HRQOL) is considered to be important as a primary outcome and in the determination of therapeutic benefits of CAD patients by adapting positive health behavior. The nurse-led transitional care programme is helpful for coronary artery disease patients to supporting their effective transfer from hospital to community after a cardiac event by enhancing patients' knowledge of their illness and awareness of behavioral changes to prevent a new event or readmission to hospital thereby improve quality of life. **Masoumeh Akbari, Sevilay Senol Celik (2020)** study aimed to investigate the effects of discharge training and post discharge counseling on QOL after CABG sample of 100 patients who underwent CABG surgery. Six weeks after hospital discharge, the mean score of QOL in the intervention group was significantly greater than the control group (93.19 ± 4.45 vs. 47.00 ± 13.43 ; $P < 0.001$). A study showed that discharge training was effective in alleviating post discharge problems and improving patient outcomes such as health related knowledge and self-care ability.

Objectives:-

1. To assess the level of HRQOL among coronary artery disease clients.
2. To evaluate the effectiveness of Transitional Care Nursing Package on HRQOL among coronary artery disease clients.
3. To associate the effectiveness of Transitional Care Nursing Package on HRQOL of coronary artery disease clients with their selected demographic variables.

Materials and Methods:-

Quantitative evaluative approach was used. A quasi-experimental design was chosen for this study. Sample of 290 coronary artery disease clients (study group-146, control group -144) were selected by using non probability convenience sampling technique.

Data collection procedure:-

After obtaining the formal permission from the head of the institution the investigator introduced self to the samples and explained the purpose of the study. Written informed consent was obtained and demographic variables was assessed followed by pre-test level of HRQOL was assessed by SF- 36 Health survey questionnaire. Transitional care nursing package was administered to study group and the samples were encouraged to follow the recommended instructions on regular basis and to maintain the diary of events. Post test was conducted at the end of 4 weeks, 12 weeks & 24 weeks. Reinforcement of transitional care nursing package and individual need based guidance was given as required after each post test. Similarly the pre test and post test data was collected from the samples in the control group except the administration of transitional care nursing package. The researcher maintained confidentiality throughout the study. The data collection was completed from all samples & data was prepared and analyzed.

Results And Discussion:-

Description of sample characteristics:

Table 1 shows that the description of demographic variables in study and control group. In both the group majority of the clients 71.9% in study group & 65.3% in control group were in the age group 51 to 60 years. In the study group 74% were male, 32.9% had elementary school education and 80.8% were married whereas in control group 65.3% were male 38.9% had elementary school education and 79.2% were married. In both the groups majority of them belongs to Hindu religion and living in nuclear family.

In the aspect of family history of hypertension 29.5% in study group and 28.5% in control group had family history of hypertension with the degree of relationship as paternal. For diabetes mellitus 20.5% in study group and 16.7% had family history of diabetes mellitus with the degree of relationship as maternal. Only 13.7% in study group and 11.8% in control group had family history of coronary artery disease with the degree of relationship as paternal.

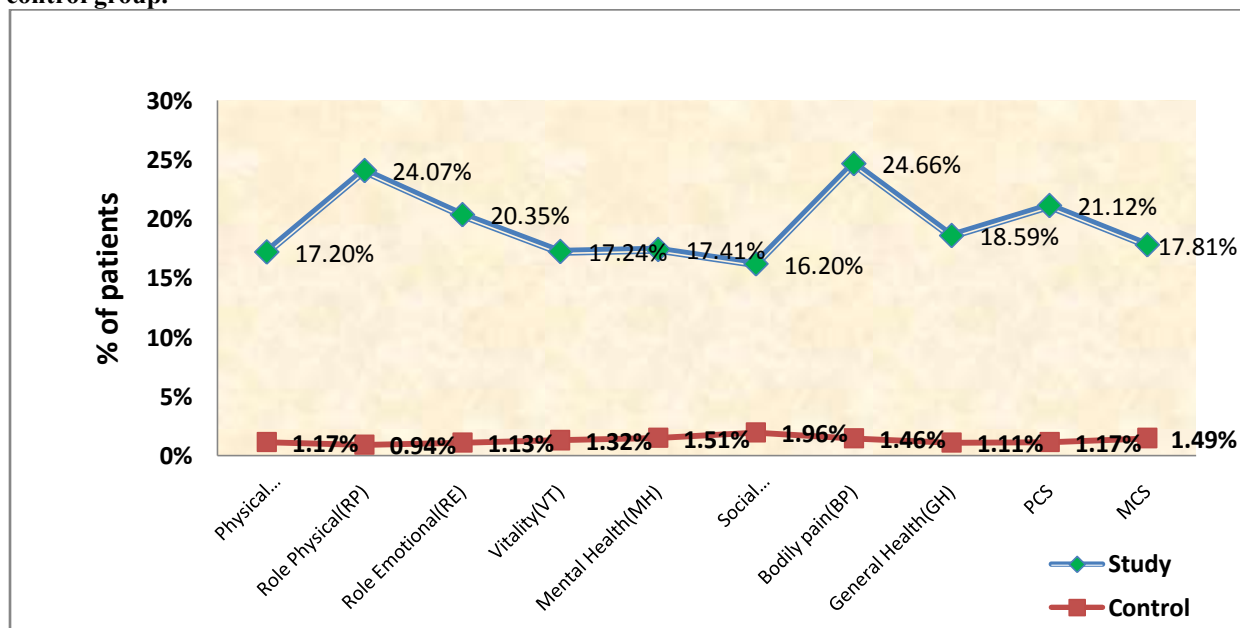
With regard to history of diabetes mellitus 43.2% in study group and 45.8% in control group had history of diabetes mellitus with chronicity as more than 10 years in both groups. In view of hypertension majority of them 88.4% in study group and 91% in control group had significant history of hypertension with 7 to 10 years as chronicity of disease.

Assessment of Pre-test post &-test level of HRQOL among study and control group

Table 2 shows the percentage difference in the level of HRQOL in pretest, post test 1, post test 2 and post test 3 among study and control groups. In pre-test, majority of respondents 128 (87.7%) in both groups were having moderate level of HRQOL followed by 6 (4.1%) in study group and 7 (4.9%) in control group had low level of HRQOL and none of them had very high level of HRQOL in both groups. But after administration of transitional care nursing package to study group the HRQOL has improved to high level (24%), moderate level (73.9%) in post test 1 followed by 60.3% had high level and 2.7% had very high level of HRQOL and none of them had low level of HRQOL in post test 2. But in post test 3 majority of them 76.7% had high level followed by 6.8% had very high level of HRQOL and none of them had low level of HRQOL.

In control group majority 87.5% had moderate level, 3.5% had low level and 9% had high level of HRQOL in post test 1 whereas in post test 2, 88.9% had moderate and 11.1% had high level of HRQOL. In post test 3 majority 86.8% were remained as same as in pre test having moderate level and 13.2% had high level but none of them had low and very high level of HRQOL.

Comparison of overall Mean and Standard Deviation in all domains of HRQOL within study group and control group.



The above figure shows the comparison of mean and standard deviation of pre test and post test scores related to level of HRQOL among study and control groups. Results proved that there was a significant difference found between the pre test and post test level of HRQOL among study group at $p < 0.001$. There was no significant difference found within control group.

Effectiveness of Transitional care nursing package on HRQOL gain score within the study group and control group.

Table 3 revealed the findings of the study that the pretest mean score of the study group was 351.12 and that of control group was 348.51 and it showed that before implementing transitional care package both of the group were having equal level of HRQOL. The post test mean score of experimental group was 506.84 and that of control group was 359.12 with the mean difference among the study group was 155.71 but in control group it was about 10.61. Hence the transitional care nursing package was effective in promoting the level of HRQOL.

Association between HRQOL of clients with coronary artery disease and demographic variables among study group.

Table 4 describes the association between the level of HRQOL and demographic variables among study group. There was a significant association found with the selected demographic variables such as age, gender, education, family history of diabetes mellitus, history of diabetes mellitus at $p < 0.05$ level and income at $p < 0.01$ level.

Table 1:- Frequency and Percentage distribution of demographic variables of clients with coronary artery disease among study and control group. N= 290

Demographic variables		Group				Chi square test
		Study (n=146)		Control(n=144)		
		n	%	n	%	
Age	31 -40 years	3	2.1	2	1.4	$\chi^2=2.33$ P=0.52 DF=3 NS
	41 -50 years	18	12.3	20	13.9	
	51 -60 years	105	71.9	94	65.3	
	> 60 years	20	13.7	28	19.4	
Gender	Male	108	74.0	105	72.9	$\chi^2=0.04$ P=0.83 DF=1 NS
	Female	38	26.0	39	27.1	
Education	Illiterate	13	8.9	19	13.2	$\chi^2=4.27$ P=0.37 DF=4 NS
	Elementary	48	32.9	56	38.9	
	High school	48	32.9	41	28.5	
	Higher Secondary	31	21.2	21	14.6	
	Graduate	6	4.1	7	4.9	
Occupation	Semi Professional	3	2.1	2	1.4	$\chi^2=5.06$ P=0.41 DF=5 NS
	Clerical, shop owner	20	13.7	13	9.0	
	Skilled worker	30	20.5	36	25.0	
	Semi skilled worker	47	32.2	36	25.0	
	Unskilled worker	14	9.6	15	10.4	
	Unemployment/ House wife	32	21.9	42	29.2	
Income	Rs.11362 – 15187	55	37.7	42	29.2	$\chi^2=6.13$ P=0.18 DF=4 NS
	Rs.7594 – 11361	50	34.2	49	34.0	
	Rs.4556 – 7593	9	6.2	5	3.4	
	Rs.1521 – 4555	6	4.1	8	5.6	
	< Rs.1520	26	17.8	40	27.8	
Marital status	Married	118	80.8	114	79.2	$\chi^2=0.12$ P=0.72 DF=1 NS
	Widow/Widower	28	19.2	30	20.8	
Religion	Hindu	81	55.5	80	55.6	$\chi^2=1.44$ P=0.49 DF=2 NS
	Muslims	18	12.3	12	8.3	
	Christian	47	32.2	52	36.1	

Type of family	Nuclear family	99	67.8	86	59.8	$\chi^2=2.11$ P=0.35 DF=2 NS
	Joint family	39	26.7	47	32.6	
	Extended family	8	5.5	11	7.6	
Demographic variables		Group				Chi square test
		Study(n=146)		Control(n=144)		
		n	%	n	%	
Family history of hypertension	Yes	43	29.5	41	28.5	$\chi^2=0.03$ P=0.85 DF=1 NS
	No	103	70.5	103	71.5	
If yes, Degree of relationship	Paternal	25	58.1	18	43.9	$\chi^2=3.01$ P=0.22 DF=2 NS
	Maternal	4	9.3	9	22.0	
	Siblings	14	32.6	14	34.1	
History of diabetes mellitus	Yes	30	20.5	24	16.7	$\chi^2=0.72$ P=0.39 DF=1 NS
	No	116	79.5	120	83.3	
If yes, Degree of relationship	Paternal	9	30.0	9	37.5	$\chi^2=3.59$ P=0.16 DF=2 NS
	Maternal	16	53.3	7	29.2	
	Siblings	5	16.7	8	33.3	
Family history of Coronary Artery Disease	Yes	20	13.7	17	11.8	$\chi^2=0.23$ P=0.63 DF=1 NS
	No	126	86.3	127	88.2	
If yes	Paternal	10	50.0	10	58.8	$\chi^2=0.45$ P=0.80 DF=2 NS
	Maternal	2	10.0	2	11.8	
	Siblings	8	40.0	5	29.4	
History of diabetes mellitus	Yes	63	43.2	66	45.8	$\chi^2=0.21$ P=0.64 DF=1 NS
	No	83	56.8	78	54.2	
if yes, chronicity of disease	< 3 years	3	4.8	4	6.1	$\chi^2=1.00$ P=0.84 DF=3 NS
	3- 6 years	18	28.6	14	21.2	
	7- 10 years	15	23.8	18	27.3	
	>10 years	27	42.9	30	45.5	
History of hypertension	Yes	129	88.4	131	91.0	$\chi^2=0.53$ P=0.46 DF=1 NS
	No	17	11.6	13	9.0	
if yes, chronicity of disease	<3 years	18	14.0	23	17.5	$\chi^2=3.25$ P=0.52 DF=4 NS
	3 - 6 years	39	30.2	36	27.5	
	7- 10 years	48	37.2	52	39.7	
	> 10 years	24	18.6	20	15.3	

Table 2:- Percentage significant difference between pretest, post test 1, post test 2 and post test 3
HRQOL gain score among study group and control group.

N=290

Assessment	Level of HRQOL	Group				Chi square test
		Study (n=146)		Control(n=144)		
		N	%	N	%	
Pre test	Low	6	4.1%	7	4.9%	$\chi^2=0.49$ p=0.78 NS
	Moderate	128	87.7%	128	88.9%	
	High	12	8.2%	9	6.3%	
	Very High	0	0.0%	0	0.0%	
Post test 1	Low	3	2.1%	5	3.5%	$\chi^2=11.95$ p=0.05* S
	Moderate	108	73.9%	126	87.5%	
	High	35	24.0%	13	9.0%	
	Very High	0	0.0%	0	0.0%	
Post test 2	Low	0	0.0%	0	0.0%	$\chi^2=92.74$ p=0.001*** S
	Moderate	54	37.0%	128	88.9%	
	High	88	60.3%	16	11.1%	
	Very High	4	2.7%	0	0.0%	

Post test 3	Low	0	0.0%	0	0.0%	$\chi^2=144.48$ $p=0.001^{***}$ S
	Moderate	24	16.4%	125	86.8%	
	High	112	76.7%	19	13.2%	
	Very High	10	6.8%	0	0.0%	

Table 3:- Effectiveness of Transitional care nursing package on HRQOL gain score within the study group and control group. N=290.

Group		Maximum score	Mean± SD	% of mean score	mean difference with 95%CI	% of difference with 95%CI
Study	Pre test	800	351.12± 38.45	43.89%	155.71 (147.31 -164.12)	19.46% (18.41% -20.51%)
	Post test 3	800	506.84±48.65	63.35%		
Control	Pre test	800	348.51±33.93	43.56%	10.61 (7.25 -13.96)	1.32% (0.91% -1.75%)
	Post test 3	800	359.12±30.00	44.89%		

Table 4:- Association between HRQOL of clients with coronary artery disease and demographic variables among study group. n=146.

Demographic variables		n	HRQOL gain score						Oneway ANOVA F-test/ t-test
			Baseline		6 th month		Gain score= 6 th month- Baseline		
			Mean	SD	Mean	SD	Mean	SD	
Age	31 -40 years	3	294.33	27.50	425.00	31.10	130.67	34.00	F=2.68 P=0.05* S
	41 -50 years	18	362.39	41.11	497.00	41.65	134.61	50.87	
	51 -60 years	105	350.26	37.99	492.90	48.43	142.64	42.25	
	> 60 years	20	354.05	33.92	523.85	48.09	169.80	46.09	
Gender	Male	108	345.38	34.99	508.13	49.31	162.75	52.38	t=2.03 P=0.04* S
	Female	38	367.45	43.39	510.55	46.49	143.11	48.13	
Education	Illiterate	13	355.23	38.07	487.67	54.83	132.44	46.67	F=2.39 P=0.05* S
	Elementary	48	354.31	39.39	491.92	48.29	137.62	48.73	
	High school	48	342.56	37.79	489.22	48.86	146.66	52.61	
	Higher Secondary	31	357.61	38.56	526.41	51.19	168.81	55.78	
	Graduate	6	351.67	36.95	522.07	27.22	170.40	35.66	
Occupation	Semi Professional	3	359.33	65.32	494.00	10.58	134.67	56.13	F=0.52 P=0.76 NS
	Clerical, shop owner	20	360.50	32.82	515.50	50.04	155.00	52.31	
	Skilled worker	30	343.23	41.12	496.10	52.72	152.87	59.55	
	Semi skilled worker	47	347.72	33.93	512.53	49.67	164.81	50.43	
	Unskilled worker	14	332.21	46.27	481.21	40.06	149.00	41.72	
	Unemployment/ House wife	32	365.16	35.87	515.56	44.67	150.41	49.28	
Income	Rs.11362 - 15187	55	342.68	39.98	503.38	50.84	160.70	54.33	F=3.91 P=0.01**S
	Rs.7594 - 11361	50	351.58	31.64	509.38	46.27	157.81	51.21	
	Rs.4556 - 7593	9	350.38	35.71	496.71	47.19	146.33	48.14	
	Rs.1521 - 4555	6	352.67	46.63	490.33	50.39	137.67	43.11	
	< Rs.1520	26	380.67	51.17	499.00	35.57	118.33	20.61	
Marital status	Married	118	349.24	37.86	502.83	48.52	153.59	48.62	F=1.02 P=0.30 NS
	Widow/Widower	28	359.07	40.62	523.75	46.29	164.68	61.97	
Religion	Hindu	81	349.46	41.14	511.56	47.57	162.10	51.16	F=1.40 P=0.24 NS
	Muslims	18	347.50	22.20	495.28	48.76	147.78	48.05	
	Christian	47	355.38	38.81	503.15	50.41	147.77	52.54	

Type of family	Nuclear family	99	349.82	36.67	505.81	49.19	155.99	50.90	F=0.68 P=0.50 NS
	Joint family	39	351.90	42.38	511.03	49.20	159.13	55.32	
	Extended family	8	363.50	43.06	499.25	42.93	135.75	36.19	
Family history of hypertension	Yes	43	351.58	45.18	510.07	52.48	158.49	62.86	F=0.41 P=0.67 NS
	No	103	350.93	35.51	505.50	47.17	154.56	46.08	
If yes, Degree of relationship	Paternal	25	339.40	36.76	511.04	58.61	171.64	61.47	F=2.09 P=0.14 NS
	Maternal	4	404.00	37.82	511.75	34.37	107.75	37.59	
	Siblings	14	358.36	50.89	507.86	47.69	149.50	65.22	
Family History of diabetes mellitus	Yes	30	356.00	42.10	494.70	40.40	138.70	39.02	t=2.05 P=0.04* S
	No	116	349.86	37.54	509.98	50.25	160.12	53.40	
If yes, Degree of relationship	Paternal	9	365.56	34.86	503.56	38.67	138.00	40.84	F=2.00 P=0.06 NS
	Maternal	16	359.88	44.79	490.56	42.06	130.69	33.93	
	Siblings	5	326.40	39.21	492.00	44.22	165.60	47.15	
Family history of Coronary Artery Disease	Yes	20	344.90	42.68	506.30	54.68	161.40	68.15	F=0.53 P=0.59 NS
	No	126	352.11	37.83	506.93	47.87	154.82	48.50	
If yes	Paternal	10	334.00	41.08	515.90	60.57	181.90	73.22	F=0.90 P=0.42 NS
	Maternal	2	347.50	6.36	494.00	28.28	146.50	34.65	
	Siblings	8	357.88	49.03	497.38	54.94	139.50	65.81	
History of diabetes mellitus	Yes	63	358.94	34.54	504.07	41.07	145.13	44.42	t=2.03 P=0.05* S
	No	83	345.19	40.37	507.64	53.73	162.45	56.23	
if yes, chronicity of disease	Less than 3 years	3	353.33	25.42	561.33	15.63	208.00	35.37	F=1.95 P=0.13 NS
	3- 6 years	18	364.72	35.96	507.89	40.07	143.17	46.34	
	7- 10 years	27	356.44	33.81	510.30	37.28	153.85	40.77	
	More than 10 years	15	357.60	37.88	506.20	48.19	148.60	45.55	
History of hypertension	Yes	129	352.49	37.46	508.17	48.27	155.68	52.07	t=0.02 P=0.98 NS
	No	17	340.76	45.24	496.76	51.87	156.00	47.42	
if yes, chronicity of disease	Less than 3 years	18	353.22	47.05	499.78	47.89	146.56	41.57	F=1.52 P=0.20 NS
	3- 6 years	32	354.70	35.16	517.33	46.23	162.64	52.79	
	7- 10 years	37	356.46	36.56	508.49	46.98	152.03	55.76	
	More than 10 years	42	340.45	36.98	507.19	52.53	166.74	51.77	

Conclusion:-

The study findings demonstrates that the transition care nursing package was very effective in improving the HRQOL for CAD clients before getting discharge from the hospital. The pretest and post test level of HRQOL were compared by paired t test which showed highly significant at $p < 0.001$ level and the gained score was 19.46% in study group whereas in control group there was no significant difference between pre test and post test level. Nurses play a vital role in treatment as they are close to the patients and their families during all the process of hospitalization.

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