ORIGINAL ARTICLE

Effectiveness of an Interventional Program on Patient's Performance About Self-Care After Craniotomy Surgery

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ABSTRACT

Background: Craniotomy is a terrifying ordeal for patients and their families. The postoperative period is a patient's weakest and most vulnerable time. Despite teaching moments about postoperative directions, patients' concerns about daily living activities prior to and after discharge are the most common. Aim: To evaluate the effectiveness of an interventional program on patient's performance about self-care after craniotomy surgery. To find out the association between the effectiveness an interventional program on patient's performance about self-care after craniotomy surgery and demographic data of patients. Subjects and methods: A pre-experimental design (one group pre-test/ post-test design) is applied has been done to obtain the study goals. Forty-four patients had craniotomy surgery selecting by non-probability sample (convenience) sampling. Their age ranged from (20-60 and more) years old, fully conscious after operation. One group that gives interventional program. Using a valid and reliable questionnaire, data was collected. Results: the study shows there is a statistical significance deference between pre and post-test for study at $p < 0.05$ which mean effectiveness of interventional program و this indicates to good improvement in total knowledge and practices of the patients about self-care performance after application of interventional program. Conclusion: At the post test, there was a high significant improvement in patients` knowledge and practices about self-care performance after application of the interventional program, this demonstrates the smoothness of the program that was designed for this purpose, as well as the ease with which it was accepted by all of the patients who took part. There is a statistical significant difference between demographics variables (age, gender, marital status, educational qualification and occupation) and effectiveness of interventional program among the two period (pre and post-test) for patient's knowledge and practices. Recommendation: Conducting specialized courses for medical and health staff concerned with the implementation of self-care programs after neurosurgery in neurosurgery wards.

Keywords: Interventional Program, Self-Care Performance, Craniotomy Surgery.

INTRODUCTION

A craniotomy is a surgical technique in which a piece of the skull's bone is removed to expose the brain. Specialized equipment is used to remove the bone flap, which is a piece of bone. The bone flap is briefly removed after brain surgery and subsequently reinstated[1].The human brain is a complex network that is highly flexible[2]Because brain surgery is a complicated procedure, the recovery period is lengthy, patients' activities are restricted for a period of time, they are confined to their beds, and the danger of complications is significant. As a result, the amount of care required in the post-surgical period increases[3].Therefore, the patient gives information on what to expect following intracranial surgery[4]. Disease management and patient self-care is becoming more important in patient-centered treatment as a behavioral component. Illness self-management and self-efficacy are combined in self-care, with self-management referring to the patient's abilities and actions that affect disease symptoms and self-efficacy referring to the patient's motivation and perceived capacity to engage in self-management techniques. Self-administering an optional (add-on) treatment taps into a patient's inherent incentive and, as a result, increases compliance, by engaging habit-forming mechanisms, can achieve long-term behavioral improvements[5]. Patients' self-care performance relates to health-seeking actions such as taking medications, exercising, quitting smoking, and eating a balanced diet[6].Poor and inadequate self-care is one of the leading causes of patient mortality and poor quality of life. As a result, observing care habits with the goal of improving the quality of life of persons with chronic conditions is critical, and patients can influence their comfort and performance ability by learning to care for themselves [7].

Aim of the study: To evaluate the effectiveness of an interventional program on patient's performance about self-care after craniotomy surgery.

To find out the association between the effectiveness an interventional program on patient's performance about self-care after craniotomy surgery and demographic data of patients.

METHODOLOGY

Research design: A pre-experimental design (one group pre-test/ post-test design) is applied has been done to obtain the study goals.

Setting: This study was conducted in neurosurgery hospitals in Baghdad city (Neurosurgery Teaching Hospital, Dr-Saad Al-Witry Neuroscience Hospital and Ghazi al Hariri Surgical Specialties Hospital).

Subjects: Forty-four patients of both gender had craniotomy surgery were included in this study. Their age ranged from (20-60and above) years old, fully conscious after operation in neurosurgery wards. One group that gives interventional program. The number of males was 23, while the number of females 21. The data collection from study sample beginning from (28th September, 2021) to (20th March, 2022). Those patients were followed up before discharge in the neurosurgery wards, Two week after discharge in the neurosurgery outpatient clinic. Their ages ranged from 20 to 60 years and above.

Tools: A valid and reliable questionnaire used to data collection.

MATERIAL AND METHODS:

The study protocol was approved by the post graduate and ethical research committees, faculty of nursing and Baghdad University.

An official letter from Baghdad University, Faculty of Nursing was submitted to the Rusafa Health Directorate and Medical City Directorate.

To make the instrument more valid, it contains validity used through (12) experts in different fields to investigate the content of the questionnaire for adequacy, clarity, and relevancy.

Reliability testing for the study tools was estimated using the Cronbach's Alpha test of the study tools. Results indicated that had Cronbach's Alpha coefficient of: 0.89 and reliability coefficients for checklist practices parameters was Inter Examiner 0.87, Intra Examiner 0.90.

A pilot study was conducted on 10 adult craniotomy patients.

Ethical considerations: The recruited patients' written consents to participate in the study were acquired, and privacy and

confidentiality were respected. The right of participants to withdraw at any moment during the study was recognized and respected.

Statistical Analysis: The "SPSS" software version 22 was used to analyze the data. The dependability of the developed tool was assessed using Cronbach's alpha reliability test. Descriptive Data Analysis: Tables (Frequencies, Percentages, and mean of scores) and Statistical figure (Bar Charts). Inferential Data Analysis: T-test (paired sample t-test) to determine the mean difference between the patient' responses (knowledge and practices) at two levels of measurements (pre-test and post-test), Analysis of variance (ANOVA) to determine the association between the patient' (knowledge and practices) with demographic characteristics and T-test (independent sample t-test) to determine the mean difference between the patient' (knowledge and practices) according to their gender

RESULTS

Table 1: Distribution of craniotomy patients according to the demographical characteristics

Demographic data	Rating and intervals	Frequency	Percent
Age / years	20-29	8	18.2
	30 – 39	8	18.2
	40 – 49	8	18.2
	50 -59	9	20.5
	60 and above	11	25
Gender	Male	23	52.3
	Female	21	47.7
Marital Status	Single	4	9.1
	Married	32	72.7
	Widow/Widower	7	15.9

	Divorced	1	2.3
	Single	4	9.1
Occupation	Employee	9	20.5
	Retired	2	4.5
	Unemployed	21	47.7
	Freelance work	12	27.3
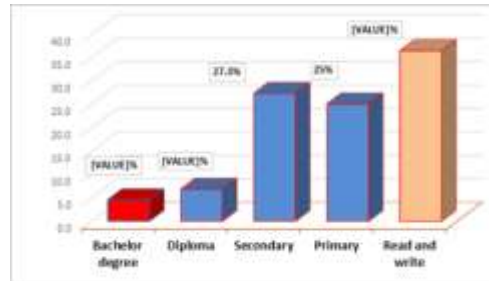
Figure 1: Distribution of craniotomy patients according to the educational level

Table 2: Mean Difference (Paired Sample T-Test) Between the Overall Evaluation of Patients' Knowledge at the Pre-Test and Post-Test Measurements

Periods	Mean	N	Std. Deviation	t-value	d.f.	p-value
Pre-test	1.0549	44	0.0688	59.713	43	0.000 HS
Post-test	1.8750	44	0.0654			

Table 3: Analysis of Variance (ANOVA) of the Overall Patients' Knowledge according to Demographic Data

Studied Variables	Rating and Intervals	N	Mean	Std. Deviation	F	p-value
Age / years	20-29	8	1.8906	0.05866	0.160	0.95 NS
	30 – 39	8	1.8646	0.08259		
	40 – 49	8	1.8750	0.04980		
	50 -59	9	1.8750	0.08590		
	60 and above	11	1.8712	0.05730		
Marital Status	Single	4	1.8854	0.06250	0.613	0.61 NS
	Married	32	1.8672	0.06813		
	Widow/Widower	7	1.8988	0.05822		
	Divorced	1	1.9167	0.00		
Educational qualification	read and write	16	1.9063	.06719	2.54	0.05 S
	Primary	11	1.8788	.07325		
	Secondary	12	1.8542	.04530		
	Diploma	3	1.8194	.02406		
	Bachelor degree	2	1.8125	.02946		
Occupation	Employee	9	1.8472	.04658	1.78	0.16 NS
	Retired	2	1.9583	.05893		
	Unemployed	21	1.8810	.06883		
	Freelance work	12	1.8715	.06518		

Table 4: Analysis of Variance (ANOVA) of the Overall Patients' Practices according to Demographic Data

| Studied Variables	Rating and Intervals	N	Mean	Std. Deviation	F	p-value
Age / years	20-29	8	2.843	0.145	0.635	0.641 NS
	30 – 39	8	2.796	0.162		
	40 – 49	8	2.796	0.093		
	50 -59	9	2.805	0.126		
	60 and above	11	2.875	0.136		
Marital Status	Single	4	2.843	0.18750	1.325	0.280 NS
	Married	32	2.804	0.126		
	Widow/Widower	7	2.910	0.118		
	Divorced	1	2.8750	0.00		
Educational qualification	Read and write	16	2.8984	0.130	2.705	0.044 S
	Primary	11	2.8182	0.141		
	Secondary	12	2.7813	0.094		
	Diploma	3	2.7500	0.125		
	Bachelor degree	2	2.6875	0.088		
Occupation	Employee	9	2.7500	0.062	3.0201111	0.041 S
	Retired	2	3.0000	0.00		
	Unemployed	21	2.8571	0.126		
	Freelance work	12	2.8021	0.155		
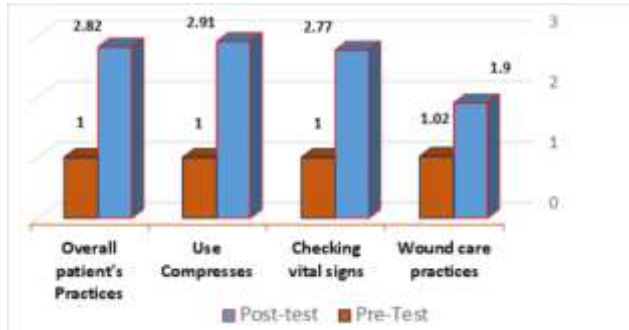
Figure 2: Summary Statistics of the Overall Patients' Practices at Pre and Post Application of the Interventional Program

Table (1) indicate that 11 ((25%) of craniotomy patients within age group of (60 and above). Concerning to the gender, the male more than female in the sample 23 (52.3%). Regarding to marital status, the greater parts is 32 married for (72.7%) over all sample. Concerning of the occupation, an unemployed is the greater number of sample 21 (47.7%).

Figure (1) indicates of (36.4%) educational level of craniotomy patients from read and write level.

Table (2) displays the overall evaluation of patients' knowledge at the pre- and post-test, which shows that patients lack knowledge about self-care performance after craniotomy at the pre-test and have high knowledge about self-care performance at the post-test.

Table (3) displays analysis of variance of the overall patients' knowledge according to demographic data, which shows that all demographic variables non-significant in overall patients' knowledge about self-care performance except educational qualification is significant.

Figure (2) represents summary statistics of patients' practices at pre interventional program and post. Which shows that patients never applied the practices of self-care performance in the pre-test and their always applied in the post-test

Table (4) displays variance according to demographic data which shows educational qualification and occupation are statistically significant when analysis of variance of the overall patients' practices according to demographic data.

DISCUSSION

Ongoing interventional programs are necessary for consistent promotion of self-care performance, controlling symptoms and prevention of complications. The findings of the current study revealed that the highest age group was (60 and above) with a twenty-five percentage from overall study sample, whereas, more than half the sample is men 52.3%, married patient was the greater ratio of sample 72.7%. An unemployed patient was the greater number of sample 21 (47.7%). The read and write level is the most among the groups, which is 36.4% of the total sample. In this regard, the findings of a research stated in its results that in both the control (60.0%) and research (56.7%) groups, more than half of the patients were men[8]. More than half of the patients in the control (63.3%) and research (56.7%) groups were between the ages of (35-50) years. Regarding marital status of patients, the majority of patients were married, with (63.3%) in the control group and (86.7%) in the research group. Regarding education, secondary school education was held by (20.0%) of the control group and (26.7%) of the study group, and illiteracy was held by (56.7%) of the control group and (46.7%) of the research group. In terms of occupation, manual labor accounted for (46.7%) of patients in the control group and (36.7%) in the research group.

The mean difference between the pre- and post-test shows that highly significant difference between pre- and post-test toward patients' knowledge about self-care performance after craniotomy

surgery. this indicates the effectiveness of the intervention program on patients' knowledge about self-care performance after craniotomy surgery. This effectiveness of the program is due to the great desire of patients to learn and inform their medical condition to reach a full recovery after craniotomy surgery.

The analysis of variance, the results show that there is no significant variance in the results according to demographic variables except in the educational qualification there appears significant variance in the results. The researcher attributes the absence of significant variance in the patients' knowledge according to demographic variables due to the seriousness of the craniotomy surgery and the patients fear from it that creates in all patients a desire an overwhelming desire to learn and this desire is determined by the educational qualification if the element that has significant variance is due to the fact that the percentage of patients' response to the program is governed by the educational qualification of the patients. In this regard, study done in 2009 reported that craniotomy caregivers did not have a complete understanding of craniotomy care[9]. A substantial significant link between knowledge score and chosen demographic characteristics such as age, education, and employment was discovered, according to the findings.

The average difference for patients' practices in the pre and post-test, it appears highly significant difference at pre and post measurements regarding patients' practices. and this indicates the effectiveness of the intervention program on the performance of self-care for patients after craniotomy surgery. The researcher attributes this to the interaction of patients and their passion to apply the practices of self-care to reduce complications after surgery.

The analysis of variance for overall patient practices according to demographic data. It appears that there is no statistical significance between the effectiveness of the intervention program on the patient's performance of self-care, age and marital status, and there is statistical significance between the practices of patients after applying the program, educational qualification and occupation. This result agrees with the researchers Khurshid and Othman where they proved there was a statistically significant link between practice levels, occupation, and educational level. In regard to age, however, a statistically non-significant connection was discovered between practices[10]

CONCLUSION

Based on the results of this study, it can be stated that the majority of patients had favorable outcomes following the interventional program's implementation

Recommendation: The study recommended conducting specialized courses for medical and health staff concerned with the implementation of self-care programs after neurosurgery in neurosurgery wards. Making awareness brochures and educational videos in the wards, urging and encouraging patients to increase their knowledge about performing self-care after neurosurgery, especially craniotomy.

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