

Effectiveness of Structured Teaching Program (STP) on Knowledge regarding Dialysis Disequilibrium Syndrome (DDS) among the Staff Nurses in KFKC, KSMC

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Abstract: ***Aim:** To evaluate the effectiveness of structured teaching program (STP) on knowledge regarding Dialysis Disequilibrium syndrome (DDS) among the staff nurses and to find the association between pre-test knowledge scores and selected demographic variables. **Materials and methods:** To achieve the study's goals, we choose the quantitative approach. The research design used in this study is a quasi-experimental pre-test-a posttest design. 89 Subjects were selected using a convenient sampling technique. The fascinating knowledge was assessed by a pre-test, after which they received a structured teaching program on DDS. The post-test was performed over 2 weeks in the same tool after administration during the pretest. The structured teaching program covered Anatomy and physiology, definition, causes. Signs and symptoms, Clinical features and differential diagnosis, management and its prevention of DDS. The subjects of the study, nurses, were described in terms of percentages based on their demographics. Their understanding of the dialysis imbalance syndrome (DDS) was assessed in terms of percentages. The effectiveness of the structured educational program was interpreted by the matched student 't' test. The relationship between prior knowledge and demographic variables was evaluated and interpreted by χ^2 (chi square). The above statistical procedures were performed with the help of the statistical package IBMSPSS Statistics-20. The P-values less than or equal to 0.05 ($P \leq 0.05$) We're treated as statistically significant. **Results:** The effectiveness of structured teaching programme on the improved knowledge. At pretest, the mean knowledge was 15.7 ± 4.3 and at posttest it was improved as 25.4 ± 3.4 The mean improvement of knowledge 9.7 ± 4.9 was statistically very highly significant ($P < 0.001$). The conclusion Excellent knowledge score was seen among the staff nurses after the structured teaching programme which indicates that implementation of training programs are considered valid tools to improve knowledge and practice among staff nurses.*

Keywords: Structured Teaching Program, STP, Dialysis Dysequilibrium Syndrome, DDS

1. Introduction

Dialysis Disequilibrium syndrome is a clinical condition that occurs in patients with end-stage renal disease who receive hemodialysis. The syndrome has been described since about 1962 and symptoms can include headache, nausea, vomiting, impaired vision, muscle twitching, disorientation, high blood pressure, tremors and seizures. Other newly described symptoms include muscle cramps, anorexia, restlessness and dizziness. Although the dialysis Disequilibrium syndrome has been reported in all age groups, it is more frequent in younger patients, particularly in children. While the dialysis Disequilibrium syndrome has been reported in all age groups, it is more common in younger patients, particularly in children. This may be accompanied by disorientation and tremors. Seizures and heart arrhythmias have been reported in older literature, but are rare nowadays. Symptoms are usually self-contained, but healing may take several days. In some cases, seizures can cause coma. Dialysis Disequilibrium syndrome (DDS) is characterized by a variety of neurological symptoms that affect hemodialysis patients, particularly when they begin dialysis [2, 3]. However, it is also observed in patients who have missed a number of consecutive dialysis treatments. DDS has rarely been described in patients receiving Continuous renal replacement therapy. (CRRT) [4, 5].

2. Objectives

- 1) To assess the level of Knowledge Regarding Dialysis Disequilibrium Syndrome (DDS) among nursing staff before and after giving Structured Teaching Program
- 2) To compare the level of knowledge Regarding Dialysis Disequilibrium Syndrome (DDS) among nursing staff before and After giving Structured Teaching Program
- 3) To find out the association between the pretest level of knowledge regarding Dialysis Disequilibrium Syndrome (DDS) with their selected demographic data

3. Materials and Methods

A quasi experimental study was conducted from November 4 to August 8 2021 among 89 staff nurses on the knowledge about DDS and the effectiveness of STP in improving their knowledge. Due to pandemic situation study duration was extended. The inclusion criteria of the study were staff nurses who were working hemodialysis unit in king Fahad kidney center, KSMC, Riyadh. Exclusion criteria of the study was staff nurses who are not working in hemodialysis unit. The staff nurses were selected through convenient sampling techniques was used. Pre experimental one group pretest posttest design and an evaluator approach was used. Data collection instruments used was baseline demographic data, structured knowledge questionnaire.

The tool consisted of two aspects:

Section 1: It is comprised of demographic data consisted of 7 items pertaining to age in years, professional qualification, present designation, years of experience and programmes attended regarding dialysis and its complications, number of programmes attended this year, area of work.

Section 2: Structured knowledge questionnaire regarding concept of dialysis, anatomy and physiology of Kidney, definition, causes, risk factors, pathophysiology, clinical features, differential diagnosis, treatment, prevention and nurses responsibility in preventing DDS.

Data collection Process: Formal return permission was obtained from concerned authorities before data collection. The subjects were assembled by a small group due to pandemic with following Covid 19 precautionary method. The purpose of the study was explained to the and confidentiality was assured. The informed written consent was taken from all the staff nurses by explaining the purpose of the study. The pretest was conducted on a total of 89 respondents by administering the structured questionnaire regarding DDS. The STP was administered immediately after the pretest which lasted for 30 minutes. The technique of teaching included lecture and discussion with the help of AV aids, like video, white board and power point (LCD). The post test was conducted after two weeks of administration of STP with the same questionnaire.

4. Results

Analysis showed that the majority staff nurses 64% had BSc, 33.7% had Diploma, 2.2% had MSc nursing Degree and were working in HD 89.9 % with the clinical experience of 0-2 years 6.7%, 2-5 years 27 %, 5 – 10 years 19.1 % and 10 years and more 47.2 %.

Table 2: Effectiveness of structured teaching programmes

Variable	Pre test		Post test		Improvement		“t”	df	Significant
	Mean	SD	Mean	SD	Mean	SD			
Knowledge	15.7	4.3	25.4	3.4	9.7	4.9	18.803	88	P<0.001

The table-2 states the effectiveness of structured teaching program on the improvement knowledge. At pretest, the mean knowledge was 15.7±4.3 and at posttest it was improved as 25.4±3.4. The mean improvement of knowledge 9.7±4.9 was statistically very highly significant (P<0.001).

Association was calculated using Chi square at P<0.05 Level of significance. Findings of the present study showed that there was no significant exceptareas of work HD. It was statistically significant associated with Good & Excellent pretest knowledge (P=0.018). Other demographic variables such as age $\chi^2 = 0.271$ (P=0.603), Professional Qualification $\chi^2 = 0.987$ (P=0.321), experience $\chi^2 = 0.160$ (P=0.689), Designation $\chi^2 = 0.097$, p=0.755, program attended $\chi^2 = 0.016$, P= 0.898 were revealed that there was no statistically significant association between educations with pretest knowledge.

Table 1: Assessment of pre and posttest knowledge

Type of Knowledge	Score	Pre test		Post test	
		Frequency	%	Frequency	%
Poor	1-10	12	13.5	0	0.0
Average	11-15	26	29.2	0	0.0
Good	16-24	51	57.3	33	37.1
Excellent	25-30	0	0.0	56	62.9
Total		89	100.0	89	100.0

The table-1 assessed the pre and posttest knowledge. At pretest, the poor, average and good knowledge were 13.5%, 29.2%, and 57.3% respectively. At posttest, the improved was as good and excellent knowledge were 37.1% and 62.9%.

Pre and posttest means

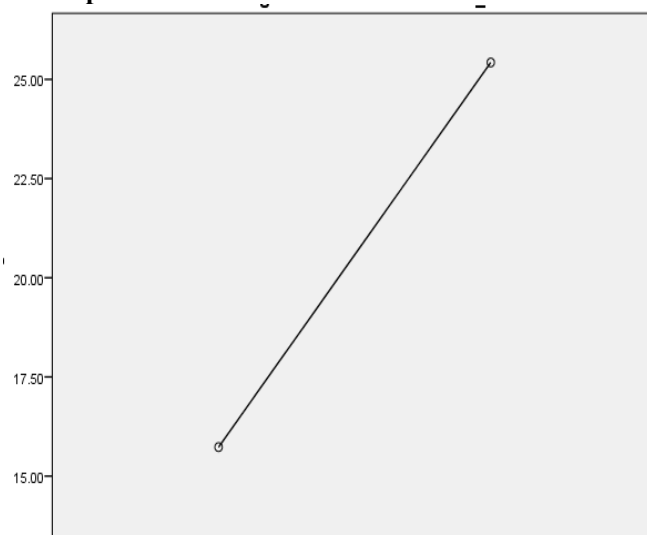


Figure 1: Improvement of knowledge pre through posttests
Period pretest post test

5. Discussion

At the King Fahad Kidney Center, KSMC approximately 80 to 90 patients receive dialysis each month, whereas 8 to 10 new patients receive dialysis. Many studies cite dialysis imbalance syndrome, which is the patient's secondary effect during the first episode of the dialysis Disequilibrium syndrome (1, 2, 3). Nurses working in a hemodialysis unit should have sufficient knowledge of DDS, as there were few studies on DDS, the researcher identified the need to assess the bedside nurses' knowledge and educate them about DDS. As it can be forewarned if health professionals have sufficient knowledge and therefore intended to conduct a study.

6. Conclusion

Results from this study have shown that nurses need to update their knowledge of SDD. Following the administration of STP, a high level of knowledge was

observed among staff nurses. This indicates that implementing training programs is considered valid for improving the knowledge and practice of nurses thus the study shows that STP constitute an effective pedagogical strategy.

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