

# The Effect of Simulated Peritoneal Dialysis Practice on Psychomotor Skills and Self-Efficacy of Students

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# Background

**Applying the proper technique for connections in Peritoneal Dialysis (PD) is crucial to preventing potential infectious complications.**

# Aim

**The aim of this experimental study is to determine the effects of simulated peritoneal dialysis on psychomotor skills and self-efficacy of students.**

# Method -1-

## Research Type

Experimental Study

## Universe and Sample

### Universe

third-year students (N=40) in a nursing department

### Participation criteria for inclusion:

- \*succeed internal and surgical disease classes
- \*being volunteered

### Sample

Total of 28 students

## Data Collection Tools

1. Peritoneal Dialysis Application Skill Assessment Checklist (PDASAC)

2. General Self-Efficacy Scale (GSES)

# Method -2-

## Data Collection Tools

### 1. Peritoneal Dialysis Application Skill Assessment Checklist (PDASAC)

\*total of 20 items

\* each item is scored as;

- *sufficient (3 points),*

- *partially sufficient (2 points),*

- *needs improvement (1 point)*

The highest score=60 points,

Lowest score= 20

**NOTE=** This list was given to all students in the experimental and control group immediately after the theoretical training and before the application as a PD practice guide.

# Method -3-

## Data Collection Tools

### **2.General Self-Efficacy Scale (GSES)**

The General Self-Efficacy Scale (GSES) was developed by Jerusalem and Schawazzer (1992) in 1979.

Yeşilbalkan, Karadakovan & Ünal (2005) applied the PD to the Turkish population by performing validity and reliability studies.

There are 10 items in the Turkish form and each one is scored ranging from 1 to 4. The lowest score obtained from the scale is 10 and the highest is 40. The self-efficacy score increases as the scale score increases.

This scale was applied to all students in the experimental and control group before and after the simulated PD application.

## Method -4-

**Process of the  
research**

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graph TD; A[Process of the research] --> B[First Stage]; A --> C[Second stage]
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**First  
Stage**

***Second  
stage***

## Method -6-

### Process of the research First Stage (Theoretical Training)

All students who participated in the study (**experiment and control**) were provided with theoretical training supported by pictures about the PD by the power point method in the classroom environment.

#### **Theoretical training consisted of**

- \*the purpose of PD,
- \*patient selection criteria for PD,
- \*the insertion method of PD catheter,
- \*characteristics of PD application room,
- \*application technique,
- \*the materials used in PD application,
- \*steps of PD application,
- \*the points to be considered before, during and after PD application and
- \*disposal of PD refuses

#### **Learning objectives for theoretical education include:** Student;

*Can prepare materials for PD application completely,*

*can start and terminate the PD application with the correct technique,*

*can destroy the refuse with the correct technique.*

## Method -5-

### Process of the research First Stage

The self-efficacy scale was applied to both groups and the list of PD application steps prepared by the researchers was given to participants at the end of the training.

**Control Groups**

**Experimental Groups**

The experimental and control groups were kept in two different classes so that they would not interact with each other.

## Method -7-

### Process of the research

#### Second Stage (Application)

##### **In the experimental group;**

The PD application steps were shown to all the students on the PD simulator in the simulation lab at the same time.

##### **During the training,**

##### **assistive messages such as**



- \*"Do not touch the tip of the catheter",
- \*"Make sure your fingers stay on the line"
- \* "Be careful where you put your finger"

##### **!!!warning messages such as !!!**

\*"Such an error could cause peritonitis" were given on the PD simulator

## Method -8-Process of the research- In the experimental group;

### First

- All the students were taken into the experimental group's waiting room by the researchers

### Second

- The scenario of the PD patient who came to the emergency service with metabolic problems was prepared in accordance with the goals set by the Nursing Association for Clinical Simulation and Learning Board.
- Each student in the waiting room was called up individually and given a briefing about PD patient and then asked to apply the steps on the PD simulator.

### Third

- During the application, PDASAC form was filled in by two observers and psychomotor skill scores were given and the average scores of the two observers were taken.
- Analysis sessions were held for the students to evaluate their performance after the application.

### Fourth

- **In these sessions; students were asked to analyze how they found themselves during PD practice, with questions such as**
- *"How did you feel with this case?"*,
- *"What do you think you did well?"*,
- *"What could you do better if you encounter with such a case again?"*

The students who completed the application in the room in a separate part of the simulation laboratory were asked to complete the self-efficacy scale.

## Method -9-Process of the research- Second Stage (Application)

### Control Group

The Students;

- 1. watched a video about the PD application** in the class they were waiting.
- 2. During PD the application,** PDASAC form was filled in by observer and psychomotor skill scores were given and the average scores of the two observers were taken.
- 3. Complete the self-efficacy scale**

# Method -10-

## Ethical Considerations

- Ethics approval for this research was obtained from Amasya University, Scientific Ethics Committee in a written manner.
- Additionally, verbal permission was given by the students who participated in the study and the patients that underwent physical examination in accordance with the principle of willingness.

## Data Analysis

- Data were entered in the SPSS 21.0 package program and number, percentage distribution, independent and paired t test were calculated.
- Statistical significance was set at the level of  $p < 0.05$ .

# Results-1-

**Table 1. Comparison of the total average scores of psychomotor skills and self-efficacy levels of experimental and control group (n=28)**

		Group								
		n	Mean	Median	Min	Max	SD	t	p*	
<b>PD application psychomotor skill total score</b>	<b>Control</b>	14	41,14	41,00	26,00	52,00	7,78	-5,3	<b>0,0001</b>	
	<b>Experimental</b>	14	54,57	55,50	45,00	60,00	5,32			
<b>Total self-efficacy score before the PD application</b>	<b>Control</b>	14	30,43	30,00	19,00	38,00	4,57	0,103	0,919	
	<b>Experimental</b>	14	30,21	30,50	18,00	43,00	6,34			
<b>Total self-efficacy score after the PD application</b>	<b>Control</b>	14	32,57	34,50	18,00	40,00	6,94	0,335	0,741	
	<b>Experimental</b>	14	31,79	33,00	14,00	37,00	5,39			

\* T test on independent groups

# Results-2-

**Table 2. Comparison of the total average self-efficacy scores of the students in the experimental group before and after PD application (n=28)**

Expremental Group								
	n	Mean	Median	Min	Max	SD	t	p**
<b>Total self-efficacy score before the PD application</b>	14	30,21	30,50	18,00	43,00	6,34		
<b>Total self-efficacy score after the PD application</b>	14	31,79	33,00	14,00	37,00	5,39	-0,841	0,416

\*\* t test on paired group

# CONCLUSION

The demonstration of the PD application with the simulation technique is effective in the development of psychomotor skills.

Supporting narration with video and pictures alone is not enough.

The PD application technique should be taught to all students in the nursing undergraduate curriculum by simulation, not only to dialysis nurses.

That is because all nurses have the responsibility to provide education.

In the future studies, it is suggested to use the simulation training method by screening other topics in PD education content.

# IMPLICATIONS FOR CLINICAL PRACTICE

No matter which clinic nurses work in, there is always the possibility to meet and give care to a PD patient.

If PD can be applied with the right technique, infectious complications that can occur during application can be avoided.

Simulation PD training methods can be widely used in the certification program of PD nurses.

# Amasya/Turkey



**THANK YOU...**