ESKISEHIR OSMANGAZI UNIVERSITY
HEALTH SCIENCES INSTITUTE
DEPARTMENT OF NURSING

EVOLUATION OF NURSES' SKILL TRAINING ON THE INTRAMUSCULAR INJECTION WITH Z TECHNIQUE IN VENTROGLUTEAL REGION

COUNSELOR

ASSOC. DR. NAZIKE DURUK

nduruk20@gmail.com

MASTER STUDENT

ARZU GUVEN

arzuuguvenn48@gmail.com

ESKISEHIR, 08 August 2022

MATERIALS AND METHODS

Ethics Committee Approval of the Study

Research, Turkey Research, students working in a Health, Practice and Hospital in Turkey and the Hospital Health, Practice and Research, which the researches are connected to, 23.01.2019 31568761-804.01-E.9833 registered registered (Annex-1). Initiative and registered at 05.03.2019 25403353-050.99- to the practice of the research practice for clinical trials without ethics2 examination of the trial. (Annex-2). Informed consent was obtained from all women who agreed to participate in the study (Annex-3).

Type of Research

This study was planned as a randomized study in a pre-test post-test design.

Location and Features of the Research

The research is scheduled for April 2019 - August 2019. The hospital consists of a total of 3 buildings with the main building with 10-storey clinics, the oncology building and the heart structure. The hospital has 1010 beds of beds. The research was conducted in outpatient clinics, operating rooms, pediatrics and emergency inpatient services. Information about the inpatient services of the study is given in (Annex-4). A total of 745 employees are employed at the hospital. Number of employees in the services included in the study.

Population and Sample of the Research

His research consisted of 419 courses in the wards (4) of a Health, Practice and Research Hospital in Turkey. The sample of the study consisted of the students who read19 educated trainings and the nurses who agreed to participate. For sample calculation, reference was taken for studies similar to our research. In Şanlıalp-Zeyrek and Kuzu-Kurban's (2017) selection study, the correct answer given to the information about Z Technique and VG region was determined by the training (10.4±2.17), post-training (14.7±1.48)) and follow-up (14.2±1,) total mean scores did not differ significantly. The sample selection in our research is based on this study, with the selection of the students who accepted to participate with the

sample selection in the survey, and the P 11 (Power Analysis Sampling Software) selection program. Chi-square (x^2) analysis was used to review the data in the guidelines with 1 freedom and the operation size would be 0.3. In the analysis, the tip rate will be 0.80% and 5 percent. Persons volunteering to help and participate in the sample were similarly selected prior to selecting the preliminary characteristics of their experiment and control group: doctor divided into groups by planned sampling: group: 31, Bachelor: Bachelor and bachelor: 17). One of her women is a form of education by lottery method (Önliğlık High School: 25, Undergraduate and Doctorate: 5) It is for random experiment and control purposes. The study was planned to be conducted with 100 nurses, including 50 women in a group. However, today, 3 students (2 of whom are military, 1 due to birth), 2 people in the control group (due to appointment and background) and 2 people did not participate in the research team, 47 control group 48 total 95 women.

Research Criteria

-The nurses working in the inpatient services of the hospital where the research was conducted were included in the research.

Exclusion criteria from the study

Nurses who did not agree to participate in the study and who wanted to quit while the research was continuing were excluded.

Research termination criteria

The study was terminated when the required sample size was reached.

Data Collection Tools

The data of the study were collected using the nurse identification form (Annex 5), the Ventrogluteal Region Z Technique and the Intramuscular Injection Application Procedure Steps Observation Form (Appendix-6) and the Student Satisfaction and Self-Confidence in Learning Scale (Annex-7).

Nurse introduction form (Annex-5)

Six of the nurses' socio-demographic characteristics (gender, age, educational status, total working time in the profession, service and status), injection practice (frequency of intramuscular injection, participation in the in-service training program for intramuscular

injections and participated in in-service training) consists of a total of nine questions, three of which are about time.

Observation form of the procedure steps of intramuscular injection with the Z technique from the ventrogluteal region (Annex-6)

It is a 20-item form consisting of intramuscular injection application steps from the ventroluteal region with the Z technique. This form is in line with the literature (Yapucu Güneş, Zaybak, Biçici, & Çevik, 2009; Gülseven-Karabacak, 2010; Kaya & Palloş, 2014; Gülnar & Özveren, 2016; Dikmen & Akın-Korhan, 2016; Şanlıalp-Zeyrek & Kuzu-Kurban, 2017; Göçmen-Baykara, Çalışkan, Öztürk and Karadağ, 2019) were prepared by researchers. Opinions of four experts were taken for the validity and reliability of the questions in the form (Eşer İ, Şanlıalp-Zeyrek A, Kuzu-Kurban N, Çelik N). In line with the suggestions, the observation form was given its final form.

Student satisfaction and self-confidence in learning scale (ÖMÖKGÖ) (Annex-7)

The Turkish validity and reliability study was conducted by Karaçay and Kaya (2017) and it consists of two sub-dimensions as "Satisfaction in Learning" and "Self-Confidence in Learning" and a total of 13 items (Karaçay and Kaya, 2017). There are five sub-items in the satisfaction in learning sub-dimension and eight sub-items in the self-confidence in learning sub-dimension. The 13th item in the scale was revised by the researchers (Karaçay, P. Kaya, H. 2017). The answer options are 1=Strongly Disagree, 2=Disagree, 3=Neither Agree or Disagree, 4=Agree, 5=Strongly Agree. The score obtained is obtained from the sum of the items of the scale. The highest total score that can be obtained from the scale is 65 and the lowest is 13. The Cronbach Alpha value of the scale is 0.85 for "Satisfaction in Learning", 0.77 for "Self-Confidence in Learning", and 0.89 for the total scale. The sum of the sub-dimensions of the scale does not give the total score. Scale scores; It is obtained by dividing the sum of the sub-dimensions by the number of items. The high score that can be obtained from the total of the scale indicates high satisfaction and self-confidence (Ünver et al., 2017). In this study, the internal consistency coefficient of the scale was 0.914, the internal consistency coefficient of student satisfaction was 0.826, and the internal consistency coefficient of the self-confidence in learning sub-dimension was 0.880. Since the reliability coefficients of the Student Satisfaction and Self-Confidence in Learning Scale (SMCDS) and its sub-dimensions vary between 0.826 and 0.914, the scale was found to be reliable.

Data Collection

The nurses in the services of Health, Practice and Research Hospital included in the research were reached and informed about the research. Nurses who met the sampling criteria of the study and agreed to participate in the study were informed verbally and in writing by the researcher.

The nurses were randomized according to their educational status and divided into groups. For each training, the place, day and time of the training were announced to the nurses who accepted the research, and the nurses who would come to the training were determined in advance as the experimental and control groups. Groups of minimum 3 and maximum 12 nurses were invited to each training. The trainings continued until the number determined for the experimental and control groups was reached. All trainings were conducted by the same researcher in order to minimize personal error in trainings. Since the single-blind method was used while collecting the data, the nurses in the experimental and control groups did not know which group they belonged to. In the pre-test, the trainings were carried out in two stages, Training I and Training II. A post-test was carried out after at least two and at most four weeks (Gülnar & Özveren, 2016; Eroğlu & Çevik, 2019).

Training I: Nurses in the experimental and control groups were interviewed in advance on the day and time they were available. Nurses who were available on the same day and time were grouped into small groups of 3-12 people. Theoretical training was given to the nurses in both groups, with a 10-minute power-point presentation prepared in line with the literature on intramuscular injection, in the training hall of Health, Practice and Research Hospital, which was predetermined and permission was obtained by the researcher. The content of the presentation includes information about evidence-based applications such as intramuscular injection from the VG region, determining the VG region, Z technique, and airlock technique (Annex-8).

Training II: The experimental group was given skill training on applying intramuscular injection with the Z technique from the VG region on the simulator, in line with the intramuscular injection application steps, by using a low-fidelity intramuscular injection simulator immediately after the theoretical training with a powerpoint presentation. Afterwards, all nurses were asked to make intramuscular injections on the simulator, accompanied by the researcher. In order for this practice to be fully understood and turned

into a skill, the nurses in the experimental group were allowed to repeat the practice under the supervision of the researcher until they did all the steps correctly.

In order to facilitate the participation of nurses, the trainings were held in the training hall of the hospital, with verbal permission from the Chief Physician of Health, Practice and Research Hospital. For the use of the low-fidelity intramuscular injection simulator used in the trainings, Faculty of Health Sciences Nursing Department Head was contacted and verbal permission was obtained. The training room for the presentation and the materials required for the intramuscular injection application (simulator, gloves, injector, needle tip, medicine, cotton, alcohol, kidney tub, piercing-cutting waste box) were prepared by the researchers before the training.

Pre-application

Before the implementation phase of the study, a preliminary application was carried out with 10 nurses working in the adult inpatient clinics of Health, Application and Research Hospital and Kütahya Yoncalı Physical Therapy and Rehabilitation Hospital. These nurses were not included in the research sample. Since it was seen that the items were understandable after the pre-application, no changes were made in the items.

Study procedure for the experimental group

After the nurses who attended the training were informed about the research, they were asked to read and sign the informed consent form. Afterwards, the nurses answered the questions in the questionnaire. Then, each nurse was asked to make an intramuscular injection from the VG region using the Z technique on a low-fidelity intramuscular injection simulator. Meanwhile, the nurses were observed by the researcher according to the "Intramuscular Injection Application Procedure Steps Observation Form with the Ventrogluteal Region Z Technique" (Annex 6), and this form was filled by the researcher (Pre-test). After all the nurses who came to the training that day were observed one by one, a 10-minute powerpoint presentation was given by the researcher to all the nurses who came to the training at the same time regarding the steps of applying intramuscular injection from the VG region with the Z technique (Training I) (Annex-8). Immediately afterwards, an injection application was made on the simulator by the researcher with the demonstration method according to the "Procedure Steps of Intramuscular Injection with the Z Technique from the Ventrogluteal Region". This process was first ensured by the nurses, and then each nurse who came to the training that day was provided to inject on the simulator one by one in accordance with the "Intramuscular

Injection Procedure Steps with the Z Technique from the Ventrogluteal Region" (Training II). Until each nurse does all the steps correctly under the supervision of the researcher.

Evaluation of Data

The data obtained in the research were analyzed using the SPSS (Statistical Package for Social Sciences) for Windows 25.0 program. For the information collected from the experimental and control groups, the frequency, percentage values, mean and standard deviation, which are descriptive statistics, were interpreted. Chi-square analysis was used to measure whether the introductory features showed similar distribution in the experimental and control groups. Q-Q Plot plot was used to determine the conformity to the normal distribution (Chan, 2003:280-285). In addition, the normal distribution of the data used depends on the skewness and kurtosis values being between ±3 (Shao, 2002). In this study, it was observed that the Student Satisfaction and Self Confidence in Learning scales had a normal distribution.

Independent sample t-test was used to test whether the scores obtained from two unrelated samples differed significantly from each other, and the McNemar test was used for the variation of two dependent groups in different time periods. The reliability coefficient of the scale of student satisfaction and self-confidence in learning was calculated as 0.914. In cases where the error rate was $p < 0.05$ in all tests, the difference between the groups was considered statistically significant. Comments were made in the light of the tables created by the analysis of the data.

Budget of the Research

No fee was paid to the participants in the study, and the participants did not bear any financial burden. For the intramuscular injection simulator and other expenses used in the research, the Scientific Research Projects Commission was applied to and the project with the code 201942A115 was created. However, since the purchase could not be made during the pandemic, the intramuscular injection simulator was provided by the Vocational Skills Laboratory of the Faculty of Health Sciences of university, and the supply of consumables was covered by the researcher.

Limitations of the Research

This study was conducted only with nurses working in inpatient services at Health, Practice and Research Hospital. Therefore, the results of the study can only be generalized to this study group.

Considering the forgetfulness of the training given, the post-test was applied after at least two and at most four weeks.

A single follow-up was made.

No observation was made while applying to the real patient. Observations were made only while practicing in the simulator.

Evaluator was not blinded (no double blind method was used).

Due to the intensive work of the nurses in the emergency room, this service was excluded by the Health Care Services Manager.