

**Lorestan University of Medical Sciences
Faculty of Khorramabad Nursing & Midwifery**

A Thesis

Presented for the
Degree of Master of Sciences
In Medical-Surgical Nursing

Title

**Assessment of Chemotherapy Standards-Oriented Training
by Smart-phone Application on Knowledge, Attitude and
Practices of Oncology Nurses**

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Abstract

Background and Aim: Nurses as the people who play the main role in caring for patients, especially nurses in the chemotherapy department who are constantly exposed to high-risk drugs and their side effects, should pay more attention to occupational safety. E-learning, on the other hand, is growing rapidly as an alternative way of providing nursing education. Therefore, this study was conducted to determine the effect of teaching chemotherapy safety standards using a smartphone application on the knowledge, attitude and practice of oncology nurses.

Materials and Methods: This study was designed as a quasi-experimental study of a pre-test-post-test group. This study was performed on 50 nurses working in the oncology wards in 2020-2021. Questionnaire assess the knowledge, attitude and practice of oncology nurses in the field of safe use antineoplastic drugs of Alehashem and Baniasadi (2018) was used. After designing the OncoNS mobile application, the intervention was applied through training by the application. The application consisted of 6 main sections entitled Introduction to high-risk drugs, personal protective equipment, drug preparation, drug delivery and delivery, drug leakage and waste disposal, which were studied by the samples for 4 weeks. The questionnaire was completed by nurses before, immediately and one month after the intervention. Data were analyzed using SPSS software version 26 and descriptive and analytical statistical tests including independent t-test, one-way analysis of variance, Spearman correlation coefficient, analysis of variance of repeated measures, Iterative measurement test and generalized estimation equation (GEE) model.

Results: The mean and standard deviation age of nurses was (29.88±6.36) years, work experience in the hospital was (5.11±5.00) years, knowledge score at the time before the intervention was (47.18±8.19), immediately after the intervention (60.08±3.82) and one month after the intervention (61.88±3.45), attitude in the time before the intervention (30.34±3.94), immediately after the intervention (34.32±3.25) and one month after the intervention (34.98±2.88) and practice was (43.60±5.11) before the intervention, (51.78±3.15) immediately after the intervention and (52.88±3.06) one month after the intervention. The results of repeated measures analysis of variance showed that there was a significant difference between the changes in the mean score of knowledge, attitude and practice of nurses over time ($P < 0.001$).

Conclusion: The results of the study showed that training in chemotherapy safety standards using a smartphone application had a positive effect on the knowledge, attitude and practice of oncology nurses. It is necessary to pay attention to the safety of nurses and the methods of its promotion in order to gain confidence in order to prevent the side effects of these drugs in nurses. On the other hand, using a smartphone application with respect to the benefits of accessibility at any time and place, reducing training and travel costs, flexibility and self-efficacy can be a good approach to training nurses. Therefore, the implementation of such programs is necessary to improve the knowledge, attitude and practice of nurses in the field of occupational safety standards before starting work in the oncology departments and the continuation of this training during service

Keywords: Education, Safety, Nurse, Chemotherapy, Software, Smart-phone