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Nursing Students' Errors in Preparation and Administration of Intravenous Drugs

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Background & Objective: The intravenous administration of drugs is a complex process in which errors may cause detrimental outcomes for patients and an increase in healthcare costs. This study was performed to ascertain the frequency, type and causes of errors made by senior nursing students in intravenous drug preparation and administration.

Methods: In this descriptive study which was conducted in four wards (internal, surgery, Coronary Care Unit, and neurosurgery) in two teaching hospitals in Arak, 52 nursing students were observed during preparation and administration of intravenous drugs between 7 to 8 times by an observer. Errors were checked in each step. The observer intervened in case a potential error was about to happen and this was considered as an error too. Data was collected using a researcher made questionnaire.

Results: In 372 registered observations, 153 errors were detected, while in 139 cases, at least one error occurred. The most frequent error in drug preparation was in solvent and diluting (2.68%). The most common error in administration was inappropriate infusion rate (11.55%). The most common cause of errors was inadequate pharmacologic knowledge (18.95%). Most errors in drug field were related to heparin (10 cases), ceftazidime (7 cases) phenytoin (6 cases) dopamine (6 cases), and vancomycin (5 cases).

Conclusion: This study shows that making errors in intravenous drug preparation and administration is highly probable amongst nursing students. Educational content should be designed in order to reduce these errors. Also it seems that the strategy of unsupervised medication administration by senior nursing students needs to be revised.

Key words: Intravenous drug, Preparation error, Administration error, Nursing student

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