

14. Pharmacology Education and Technology

14.001 Realist simulation using a patient simulator: a tool to integrate central nervous system pharmacology teachings to clinical features. Silva JLV, Morioka CY, Marcos RL, Duran CCG, Gallotti RMD Uninove – Ciências da Saúde

Introduction: Realist Simulation is a teaching strategy that enables people to experience the representation of an actual event in order to practice, learn, evaluate or clarify these situations. While teaching tool is based on the active methodology: Problem Based Learning (PBL), which reproduces real situations, allowing the student an active role in the acquisition of the concepts. These are necessary for better understanding and solving the problem while the teacher takes a “driver” posture or facilitator (Pazin FA, Rev Medicina, 40, p. 162, 2007). A realistic, full-body adult, wireless patient simulator: SimMan® has tools that mimic drug effects. SimMan® shows several clinical pictures that mimics the effects of administered medicines and answers to many programmed chips of medicines. When these chips are in contact with SimMan®, it reproduces responses as in humans. **Aim:** To report a practical class of central nervous system pharmacology using different settings in SimMan® at Interdisciplinar Center for Simulation (NIS), University Nove de Julho. **Methods:** The classes of benzodiazepines, barbiturates and opioids were selected for this study. There were three cases as follows. A group of in average 5 students have to decide the correct conduct within 3 min. They were alerted to the clinical picture of life-threatening. There were six different medicines in each case, including oxygen mask to be chosen. After all groups have passed in each case, debriefing was performed. Discussion of actions, attitudes, decision taking, mistakes and sets from students, mediated by professor and hot seat, was done. The exact medicine was administered and the clinical alterations in SimMan® were showed. Case 1: A male patient, 35 y.o., who found him unconscious with a benzodiazepine box beside him. We have set SimMan® with a clinical picture of benzodiazepines pharmacology: unconscious, respiratory and cardiac depression, with decreasing blood pressure with bradycardia, and hypothermia. Case 2: A male patient, 40 y.o., was brought by his brother with a Phenobarbital empty box. He was found unconscious. The clinical picture was similar to Case 1. However, it could not be reverted by flumazenil. Case 3: A female patient, 60 y.o., with breast cancer in terminal stage taking acetaminophen, sodium dypiron, took 40 mg of morphine every 4 h. She was found in coma state, with respiratory depression, severe hypotension, bradycardia and myosis. **Results and Conclusion:** Case 1: Students should choose oxygen mask and only chip of flumazenil, a competitive antagonist of benzodiazepine, within 3 min. If not, SimMan® would have cardiac arrest. Case 2: Students should use glucose serum 50% or bicarbonate sodium or norepinephrine. Case 3: Students should choose oxygen mask and only chip of naloxone chip, antagonist of μ -receptors. Mainly after the Case 1, students have shown more motivation to study pharmacology because they could be aware there would be a bridge from classroom to simulation laboratory. Some of them reported that they had they felt under stress as in truly life. The realist simulation using SimMan® as a tool to teach and learn pharmacology is an active and innovative methodology that stimulates integration of contents. Furthermore, it develops cognitive and communication skills of students.