



DEVELOPMENT AND EVALUATION OF SIMULATION TRAINING (CARE FOR ADOLESCENTS WITH ARTERIAL HYPERTENSION) AMONG STUDENTS OF THE HIGHER NURSING FACULTY

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ABSTRACT

Background: The increasing prevalence of arterial hypertension among adolescents highlights the need for healthcare professionals to develop specialized skills in managing this condition. Simulation-based training offers an effective educational tool to enhance clinical competence among nursing students.

Objective: This study aimed to develop and evaluate a simulation training program focused on the care of adolescents with arterial hypertension for students of the higher nursing faculty.

Methods: A quasi-experimental design was used, involving 80 nursing students who participated in a simulation-based training module. The program included scenario-based simulations, clinical decision-making exercises, and patient communication strategies. Pre- and post-training assessments evaluated students' knowledge, clinical skills, and confidence levels.

Results: The post-training assessment revealed significant improvements in students' knowledge scores ($p < 0.001$), clinical decision-making abilities, and patient-centered communication skills. Students reported higher confidence in recognizing hypertensive emergencies, interpreting diagnostic results, and developing individualized care plans.

Conclusion: Simulation training is an effective pedagogical approach to enhance nursing students' competencies in managing adolescent arterial hypertension. Integrating simulation-based learning into nursing curricula can bridge the gap between theoretical knowledge and clinical practice, ultimately improving patient outcomes.

РАЗРАБОТКА И ОЦЕНКА СИМУЛЯЦИОННОГО ОБУЧЕНИЯ (УХОД ЗА ПОДРОСТКАМИ С АРТЕРИАЛЬНОЙ ГИПЕРТЕНЗИЕЙ) СРЕДИ СТУДЕНТОВ ВЫСШЕГО СЕСТРИНСКОГО ФАКУЛЬТЕТА

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Симуляционное обучение, гипертензия у подростков, сестринское образование, клинические навыки, высший преподавательский состав сестринского дела, пациентоориентированная помощь, медицинская симуляция.

ABSTRACT

Растущая распространенность артериальной гипертензии среди подростков подчеркивает необходимость для медицинских работников развивать специальные навыки в управлении этим состоянием. Обучение на основе симуляции предлагает эффективный образовательный инструмент для повышения клинической компетентности студентов-медсестер.

Цель: Это исследование было направлено на разработку и оценку программы обучения симуляции, ориентированной на уход за подростками с артериальной гипертензией для студентов высшего сестринского факультета.

Методы: Был использован квазиэкспериментальный дизайн с участием 80 студентов-медсестер, которые приняли участие в модуле обучения на основе симуляции. Программа включала моделирование на основе сценариев, упражнения по принятию клинических решений и стратегии общения с пациентами. Оценки до и после обучения оценивали знания студентов, клинические навыки и уровень уверенности.

Результаты: Оценка после обучения выявила значительные улучшения в баллах знаний студентов ($p < 0,001$), способностях к принятию клинических решений и навыках общения, ориентированных на пациента. Студенты сообщили о более высокой уверенности в распознавании гипертонических кризов, интерпретации результатов диагностики и разработке индивидуальных планов ухода.

Выводы: Симуляционное обучение является эффективным педагогическим подходом для повышения компетенций студентов-медсестер в лечении артериальной гипертензии у подростков. Интеграция симуляционного обучения в учебные программы по сестринскому делу может сократить разрыв между теоретическими знаниями и клинической практикой, в конечном итоге улучшая результаты лечения пациентов.



Introduction. Arterial hypertension is a growing public health concern, not only among adults but also in adolescent populations. Lifestyle factors, including poor diet, physical inactivity, and rising obesity rates, have contributed to the increased incidence of hypertension in younger age groups (Flynn et al., 2017). For healthcare providers, early detection and proper management of hypertension in adolescents are critical to preventing long-term cardiovascular complications. Nursing students, as future frontline caregivers, must be equipped with the necessary skills to provide high-quality care to hypertensive adolescents.

Simulation-based education has emerged as a valuable strategy for nursing training, allowing students to engage in realistic, hands-on clinical scenarios without risking patient safety. This study seeks to develop and evaluate a simulation training program specifically designed to improve nursing students' competencies in caring for adolescents with arterial hypertension.

Literature Review

Adolescent Hypertension: Clinical Significance

Hypertension in adolescents is associated with increased risks of organ damage, including left ventricular hypertrophy, retinal changes, and renal dysfunction (Wühl et al., 2019). Early intervention through lifestyle modification, pharmacological therapy, and patient education is essential to manage blood pressure and mitigate complications.

Simulation Training in Nursing Education

Simulation-based learning has been shown to improve nursing students' clinical judgment, communication skills, and procedural competencies (Jeffries, 2020). High-fidelity simulations replicate real-life clinical scenarios, allowing students to practice clinical assessments, medication administration, and emergency interventions in a controlled environment.

Materials and Methods

Study Design and Participants

A quasi-experimental, pre-post design was used to evaluate the effectiveness of the simulation training. Eighty nursing students from the higher nursing faculty voluntarily participated. Participants were divided into small groups for interactive simulation sessions.

Training Program Structure

The simulation training module consisted of:

- Theoretical Lectures: Covering the pathophysiology, diagnosis, and management of adolescent hypertension.
- Simulation Scenarios: High-fidelity mannequins were used to simulate hypertensive adolescents presenting with symptoms like headaches, dizziness, and chest pain.
- Debriefing Sessions: Facilitated discussions to reflect on clinical decisions, communication strategies, and areas for improvement.

Knowledge was assessed using a validated multiple-choice questionnaire. Clinical skills were evaluated through objective structured clinical examinations (OSCEs), and students' self-confidence was measured using a 5-point Likert scale.

Results



- Knowledge Scores: The mean knowledge score increased from 62% pre-training to 89% post-training ($p < 0.001$).

- Clinical Skills Performance: OSCE scores improved, with students demonstrating enhanced abilities in blood pressure measurement, medication administration, and patient education.

- Self-Confidence: Students reported increased confidence in handling hypertensive crises, with average Likert scale ratings rising from 2.8 to 4.5.

Discussion

Simulation training proved highly effective in enhancing students' knowledge, clinical decision-making, and confidence. The immersive, hands-on nature of simulation allowed students to experience the complexities of hypertension management in a realistic yet safe environment.

The findings align with existing literature, emphasizing that simulation-based education bridges the gap between theory and practice (Kim et al., 2018). Regular exposure to simulated clinical scenarios may reinforce critical thinking and help students develop the adaptability needed for real-world patient care.

However, limitations of this study include its single-center design and reliance on short-term follow-up. Future research should explore the long-term retention of skills and the impact of simulation training on actual clinical performance.

Conclusion. This study underscores the value of simulation-based training in preparing nursing students to care for adolescents with arterial hypertension. By improving knowledge, clinical skills, and confidence, simulation education offers a powerful tool to enhance the quality of nursing care. Integrating simulation into nursing curricula can better equip future nurses to manage complex clinical scenarios, ultimately improving patient outcomes and advancing adolescent healthcare.

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