Effects of VR on Nursing Student Knowledge and Confidence

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PICOT Question

Do nursing students who experienced combined virtual reality and traditional simulations have increased confidence in their clinical knowledge when compared with nursing students with only traditional simulation experience?

Literature Search

- Initial studies found from database search (n = 24,478)
  - CINAHL, Google Scholar, Science Direct, SciELO, and PubMed
  - Keywords: simulation, confidence, nursing student, knowledge, virtual reality, nursing education, traditional lab, learning styles
- Studies excluded based on quality evaluation rubric (n = 12,140)
- Studies excluded based on exclusion criteria (n = 11,867)
  - Criteria
    - Published before 2016
    - Not published in academic journal
    - Unrelated to health sciences
    - Virtual reality not used in educational setting
- Studies appropriate for review (n = 273)
- Studies retained for review based on selection criteria (n=10)
  - Criteria
    - Peer-review articles
    - Virtual reality (VR) simulation used for nursing student clinical education
    - Nursing student confidence and/or knowledge tested after VR simulation

Synthesis of Findings

- Innovative methods are required to expose students to a variety of environments to increase confidence in their clinical knowledge when transitioning to the clinical setting as new graduate nurses (Chang & Lai, 2021; Cobette & Snelgrove-Clarke, 2016; Woon et al., 2021).
- Virtual reality (VR) is a viable supplement to traditional simulation methods as it can enforce knowledge acquisition, ultimately improving student's confidence (Buck-McFadyen et al., 2021; Chang & Lai, 2021; Kang et al., 2020; Woon et al., 2021).
- VR simulation increases self-perceived knowledge in nursing students compared to traditional simulation methods (Buck-McFadyen et al., 2021; Chang et al., 2021; Kang et al., 2020; Samosorn et al., 2020; Woon et al., 2021).
- VR provides a safe environment for students to practice difficult skills without fear of harming patients (Chang & Lai, 2021; Campion et al., 2021).
- VR increases confidence in clinical practice (Campion et al., 2021; Kang et al., 2020).
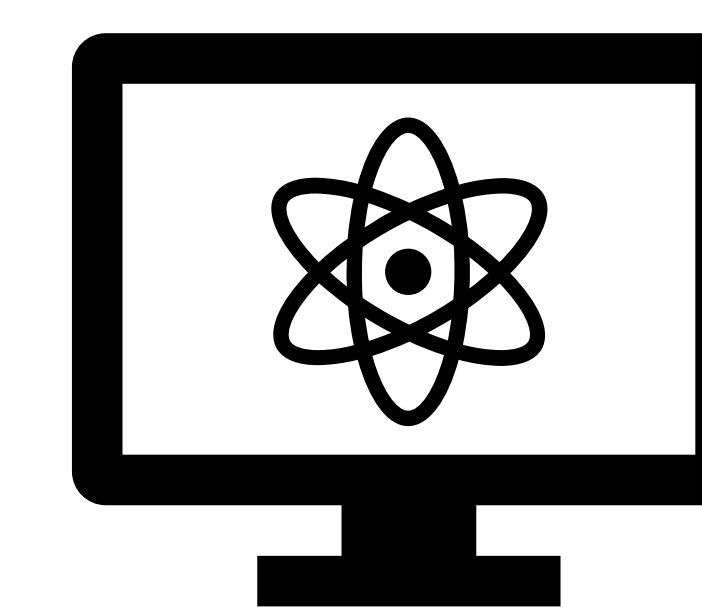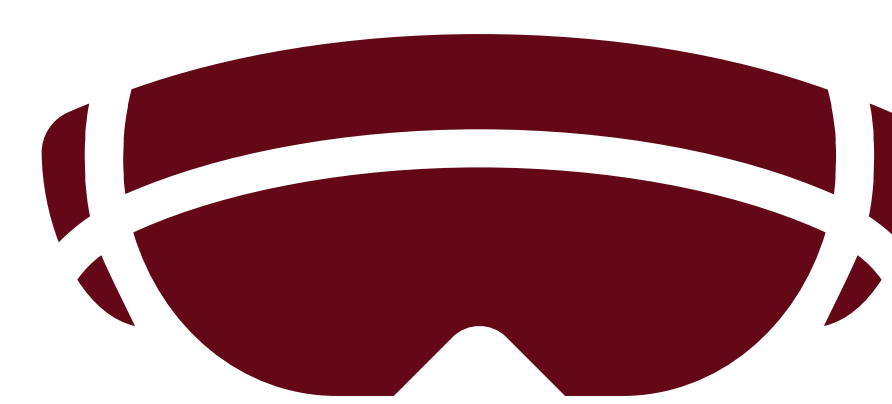
Decision to Change Practice

Ways nurse educators can implement VR simulation into curriculum:

- Assess current modes of simulation within specific programs, the different learning styles of students, and their self-perception of clinical knowledge and confidence (Caetano et al., 2018).
- Determine methods of virtual reality simulation, e.g. VR software loaded with difficult scenarios for specialty courses such as operating room (OR), emergency room (ER), and obstetrics (OB); mobile applications; or clinical environment simulations that best suit the needs of students (Buck-McFadyen et al., 2021; Campion et al., 2020; Chang & Lai, 2021; Kang et al., 2020; Cobbett, S. & Snelgrove-Clarke, E., 2016; Samosorn et al. 2020).
- Integrate chosen virtual simulation method into clinical learning alongside traditional methods.

Evaluation

Post-test of nursing student knowledge and confidence after 6 months of VR simulation usage.

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