ACCEPTED ABSTRACT
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# Cultivating critical thinking in nurse practitioner students

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**Purpose:** Critical thinking is an essential component of diagnostic reasoning, clinical decision making and professional accountability. Nurse practitioner students often struggle to view the interrelationship of these concepts. Since the development of critical thinking skills is an inferential process, the experiential characteristic of preceptor supervised clinical practice has been identified as a valuable resource. The scarcity of quality preceptors and clinical practice sites necessitates other supplemental experiential activities. The purpose of this pilot study was to describe the process and outcomes of integrating virtual interactive patient case studies into the clinical courses of an online pediatric nurse practitioner program.

**Methods:** An adaptation of the conceptual framework for clinical decision making for nurse practitioners by Tiffen, Corbridge and Slimmer was used to guide this descriptive study. A convenience nonprobability sample of forty-three pediatric nurse practitioner students in an online synchronous graduate program completed two pediatric focused, computer-based diagnostic decision simulation case studies by I-Human Patients® as graded assignments into the four clinical courses. The cases were graded based on a product standardized grading rubric. Data were collected at four 3month intervals during a 9month period. Scores in the three critical areas of the decision-making process: assessment (health history and physical examination), diagnostic reasoning (differential diagnosis) and intervention (therapeutic plan) were analyzed individually and as a group using descriptive statistics. At the end of each clinical course (n=4), students completed a journaling experience consisting of ten open-ended questions related to the simulation activities. Journal responses were analyzed using content analysis.

**Results:** Individual scores in each of the three critical areas demonstrated statistically higher mean scores from clinical course 1-2, clinical course 2-3 and clinical course 3-4 with the highest improvement occurring from clinical course 3-4. In all four clinical courses, the critical area of assessment represented the highest scores and diagnostic reasoning the lowest. Content analysis of the student responses to the journal questions identified three major themes: reflection, logical reasoning and creativity.

**Conclusion:** Since the development of critical thinking skills is an inferential process, the experiential characteristics of interactive patient case studies as a supplement to preceptor supervised clinical practice has been identified as a valuable resource. The results of this pilot study support the utilization of virtual interactive patient case studies by I-Human Patients® into the curriculum of the clinical courses in a nurse practitioner program resulting in outcomes that demonstrated a significant improvement in diagnostic reasoning and clinical decision making as well as an increase in the interrelationship of these concepts.