Interprofessional Education With Clinical Simulation: Diabetes And Pregnancy

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No Disclosure
Interprofessional Education

Different professions work together as a team toward a common goal of providing optimal patient care using the skills and expertise of other professions.

Communication and collaboration failures are negatively impacting the quality of health care.
Goals

• Develop effective team communication and collaborative practice to address issues related to diabetes in pregnancy

• To facilitate team-based care with expansion of professional roles

• Build a safer and better patient-centered healthcare system
Material and Methods

- A community wide team-based collaborative interprofessional education (IPE) workshop consisting of 4 sessions, each consisting of 3 clinical simulation stations

- 178 participants: EM, OB GYN, pediatrics, family medicine and radiology residents, and students of medicine, pharmacy, nursing and sonography

- Students and residents worked together with 77 faculty experts/proctors
Material and Methods

• Learners received most updated evidence-based practice educational material for clinical scenarios

• Each learner group had specific educational goals and objectives

• 58 MDs (residents) and 31 nursing and ultrasound technology students completed pre- and post-activity assessment test
Diabetes & Pregnancy Workshop
Timeline & Tasks

Pre-Test
- 20 multiple choice items
- Readiness for Interprofessional Learning Scale (RIPLS)

Ultrasound
Macrosomia
Emergency
Glycemic control

4 x 45 min = 3 hours
- 4 learning sessions (each had 3 clinical simulation stations)
- 12 clinical simulation stations

Debriefing

Post-Test
- 20 multiple choice items
- Readiness for Interprofessional Learning Scale (RIPLS)

30 minutes

30 minutes
Station 1a:
**First trimester assessment of diabetic pregnancy**

(High fidelity/Virtual reality: 3D Systems/Simbionix)

Identify sonographic features of early pregnancy failure: anembryonic pregnancy, missed and incomplete abortion
Station 1b: 
Fetal anomalies associated with diabetes in pregnancy 
(High fidelity/virtual reality: VIMEDIX)

- Know how fetal anatomy scan is performed
- Recognize the most common birth defects associated with gestational diabetes:
  - Cardiac defects
  - Cleft lip and palate
  - Neural tube defects
  - Abdominal wall defects
Station 1c: Ultrasound assessment of fetal weight and amniotic fluid (High fidelity: Laerdal)

Know how to perform:
- Fetal weight assessment
- Amniotic Fluid Index (AFI)

![AFI in normal singleton pregnancy graph]
Each learner group completed a pre- and post-encounter knowledge quiz, and a pre- and post-session Readiness for Interprofessional Learning Scale (RIPLS) questionnaire.
### Average Pre- and Post-IPE Activity RIPLS Sub-Scale Scores are Stratified by the Type of Learner

<table>
<thead>
<tr>
<th>Learner and Sub-Scale</th>
<th>Nursing students (N=21)</th>
<th>Pharmacy students (N=7)</th>
<th>Resident physicians (N=38)</th>
<th>Sonography students (N=4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Pre-IPE Score</td>
<td>Average Post-IPE Score</td>
<td>P-value</td>
<td></td>
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<tr>
<td>Teamwork and collaboration</td>
<td>41.8</td>
<td>42.8</td>
<td>0.03</td>
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<td>Professional identity</td>
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<td>31.3</td>
<td>0.03</td>
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<td>Roles and responsibility</td>
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<td>Teamwork and collaboration</td>
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<tr>
<td>Roles and responsibility</td>
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<td>10.8</td>
<td>0.50</td>
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</table>

- Certain items within the professional identity sub-scale and the three items that comprised the roles and responsibility sub-scale were reverse coded.
- P-values for the significance tests of the nursing students’ and resident physicians’ scores are from paired t-tests while P-values for the significance tests for the pharmacy students’ and sonography students’ scores are from Wilcoxon signed-ranks tests.
Results

Ultrasound Station Pre- and Post-IPE Activity Quiz Scores (58 MDs)

Score of individual participants: Blue; Average pre (71%) and post score (84%): Orange
Results

Ultrasound Station Pre- and Post-IPE† Activity Quiz Scores
(31 nursing and sonography students)

Score of individual participants: Blue; Average pre (61%) and post score (75%): Orange
Conclusion

Significant improvement in knowledge and skills on ultrasound assessment of pregnant patients with diabetes was noted after completion of the IPE workshop.