Introduction

Simulation training may be helpful for the development of ‘non-technical skills’ (NTS) in healthcare education. NTS are the cognitive and social skills that complement healthcare worker’s technical skills. Research has shown a need for NTS training in health education, but many areas of medical practice have yet to embrace this training. The rationale for including NTS in health care education is based on improving patient safety, meeting medical education core competencies, and gaining the necessary team skills for entry level practice in a medical team environment.

In a simulation intervention the learner is required to respond as if they would under real-life circumstances. The application of simulation in health care education has traditionally emphasized and continues to focus on the development of technical skill. In this rapidly changing field there is a need for a current and comprehensive review of NTS.

Objective

Evaluate evidence for use of simulation in the development of NTS in health care learners (HCL).

Methods

Non-Technical Skills
- Leadership
- Communication
- Situational Awareness
- Interpersonal Skills
- Team Work
- Decision Making
- Stress Management

Participants
- Physicians
- Dentists
- Physical, Occupational, Respiratory
- Massage Therapists
- Midwives
- Surgeons
- Speech and Language Pathologists
- Chiropractors
- Nurses

Studies
- Randomized control trials
- Objective measure of ≥1 NTS

Results

Of the 7 studies included, 5 showed significant changes in the acquisition of NTS, specifically, communication skills (Table 1 and 2).

Summary and Conclusion

1. There is evidence for the use of simulation in the development of NTS in select medical fields.
2. The extent to which simulation is effective and the retention of NTS is undetermined.
3. Further high quality research is needed to make more definitive conclusions for NTS gained through simulation-only intervention, NTS retention and NTS transferability to real life encounters.

References


Table 1. Intervention Duration, Feedback, Improvement and Retention Test for Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Intervention Duration</th>
<th>Feedback Provided</th>
<th>Improvement Shown</th>
<th>Retention Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helitzer et al. (2011)</td>
<td>1 week</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (effect sustained)</td>
</tr>
<tr>
<td>Janda et al. (2004)</td>
<td>1 week</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Knowles et al. (2001)</td>
<td>5 weeks</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Nikendal et al. (2011)</td>
<td>6 weeks</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Price et al. (2008)</td>
<td>6 weeks</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Sanci et al. (2002)</td>
<td>6 weeks</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (effect sustained)</td>
</tr>
<tr>
<td>Zrakic et al. (2003)</td>
<td>1 day</td>
<td>No</td>
<td>No</td>
<td>No</td>
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</table>

Table 2. Intervention, NTS and Sample Size for Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Intervention</th>
<th>NTS</th>
<th>Sample Size (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helitzer et al. (2011)</td>
<td>Standardized Patient Role Play</td>
<td>Communication skills</td>
<td>26/12</td>
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<tr>
<td>Janda et al. (2004)</td>
<td>Virtual Patient</td>
<td>Professional behavior</td>
<td>39/16</td>
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<tr>
<td>Knowles et al. (2001)</td>
<td>Standardized Patient</td>
<td>Communication skills</td>
<td>132/40</td>
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<tr>
<td>Nikendal et al. (2011)</td>
<td>Standardized Patient</td>
<td>Communication skills</td>
<td>43/14</td>
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<tr>
<td>Price et al. (2008)</td>
<td>Standardized Patient</td>
<td>Communication skills</td>
<td>121/59</td>
</tr>
<tr>
<td>Sanci et al. (2002)</td>
<td>Role Play</td>
<td>Communication skills</td>
<td>139/55</td>
</tr>
<tr>
<td>Zrakic et al. (2003)</td>
<td>Standardized Interpersonal Communication skills</td>
<td>18/9</td>
<td></td>
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Figure 1. Graph of Participants Education Level and Occupation

Figure 2. Flow Chart of Study Selection Process