Interprofessional Care of Elders: Utilizing the Virtual Learning Environment

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Practicing Interprofessional Care of Elders: Utilizing Videoconferencing and a Virtual Environment

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• University of Vermont Clinical Simulation Center
Objectives

1. Participants will discuss how video conferencing and a virtual environment can be utilized for interprofessional education.

2. Participants will review avatar creation, interviewing of a "virtual" patient, and options for student conferences.

3. Participants will review IPP competency domains.
Background

“Serious Gaming” Terms - (Virtual reality, virtual world, avatars, 3DVW, Second Life®, Virtual Learning Environments (VLE) and Digital Clinical Experience - DCE (“Tina”)

• “A computer-generated simulation of the real or imagined environment or world.” (Gaddis, 1998)

• “Serious games are applications that use computer game-derived technologies and design strategies to achieve educational aims. (Lynch-Sauer et al., 2011)
Background – Nsg. Education

• “avatars and virtual worlds have the potential to make active learning at a distance possible, especially when students have time constraints that make sitting in traditional classrooms unrealistic”. (Miller, Jensen 2014)

• Three overarching themes emerged: “(a) critical reasoning skills, (b) student-centered learning, and (c) instructional design considerations”. (De Gagne et al., 2013)

• “An overwhelming majority (94%) of students liked the idea of using technology to enhance health care education, and 88% believed that nursing education should make better use of video games and related new media technology”. (Lynch-Sauer et al., 2011)
Background – NP and IP education

NP Education and Virtual Environments

• PNP students in Second Life® primary care clinic (Cook, 2012)

Interprofessional Education

• SBIRT IPE training (Flemming et al., 2009)
Completion of an online learning module. The module included the following topics:

1. Care of frail elders requires team approach
2. Interprofessional practice versus multi-disciplinary approach
3. Info on all disciplines

NP students received content and practice re: meeting facilitation.
Enter the Virtual Clinic at https://www.uvm.edu/medicine/simlab/?Page=virtualclinic.html&SM=ipemenu.html

Use the password: UVMDIVE

Enter your information

Choose an avatar
Choose the type of interview:

Social Worker
Dietitian
Pharmacist
NP/MD
Physical Therapist/
Exercise Practitioner

Methods – The Virtual Clinic
Methods – Interviewing Skills

During the interview of Mrs. Kim, student must choose the questions that are:

- Culturally appropriate
- Open ended
- Jargon free
- Consistent with principles of Motivational Interviewing

Incorrect choices get instant feedback.
Methods – Information Gathering

Students must:

- Listen to an interview at the pace of an elder
- Review the last primary care visit note, labs, and a recent Emergency Room note
- Physical exam not included in this visit
• Students from the same discipline or different disciplines can meet in the Virtual conference room to discuss the case and plan care.

• Avatars are polite! They:
  - Speak one at a time
  - Raise hands
  - Nod or shake head “no”
Interprofessional conferences (90 minutes in length) were conducted for students to collaboratively develop a plan of care for a frail elder. Twelve conferences in the 2013 and 8 in 2014 after interviewing the patient in the Virtual Clinic.
Evaluation Methods

Online survey completed post video conference

- Demographic information
- 5 open-ended questions
- 14 questions scored on a Likert scale and related to IP Competency Domain Framework

Values/Ethics
Roles/Responsibilities
Inter-professional communication
Teams/teamwork

These competencies provided a structure for the evaluation questions, and a review by faculty in each discipline also provided content validity. Reliability of the survey instrument was not tested or established.
Eighty-three students (n=83) completed the survey. Participants were predominantly female (77%) White/Caucasian (83%).

Age:
- Mean - 29 yrs.
- Range - 22-56 yrs.

**Student Disciplines:**
- Nurse Practitioner 16%
- Physical Therapy 14%
- Pharmacy 20%
- Social Work 16%
- Nutrition 15%
- Exercise Science 2%
- Medicine 15%
- Communication Sciences 2%
Evaluation Findings – Video Conferencing

Student Rating of Interprofessional Competencies

- Values/Ethics
- Roles/Responsibilities for Interprofessional Practice
- Interprofessional Communication
- Teams/Teamwork

Strongly Agree | Agree | Neither Agree or Disagree | Disagree | Strongly Disagree
Evaluation Findings Virtual Clinic

Participating students (n = 75)
Gender: 76% female, 24% male
Age:
   Mean - 26 yrs.
   Range - 21-61 yrs.
Ethnicity:
   White 90%
   Asian 10%
Income: 10% low

Student Disciplines:
Nurse Practitioner 11% (8)
Physical Therapy 11% (8)
Pharmacy 14% (10)
Social Work 14% (10)
Nutrition 11% (8)
Exercise Science 12% (9)
Medicine 10% (7)
Communication Sciences 16% (11)
Evaluation Findings - Virtual Clinic

- Data from 14 Likert scale questions were aggregated in four IP competency areas
  - Participants rated the value of this activity positively across all four domains (mean rating of 57% Strongly Agree, 39% Agree, 5% Neutral)
  - There were some differences noted by healthcare discipline.
The distribution of responses was significantly associated with IC Domain (p=0.002 from Chi-Square test for association). In particular, the Role/Responsibility domain had a lower percentage of "Strongly agree" and higher percentage of "Agree" responses than other domains.
Results – Virtual Clinic

By discipline:

• The distribution of responses was also significantly associated with discipline (p<0.001 from Chi-Square test for association).

• In particular, the SLP, RD, and PT groups had a lower percentage of "Strongly agree" and higher percentage of "Agree" responses than the other groups.

• Also, the SLP and SW groups had a higher percentage of "Neutral" responses than the other groups.
Evaluation Findings – Virtual Clinic

Was the Virtual Clinic interview(s) a valuable experience? Why or why not?

Valued working with other disciplines (55%)
“Yes. I thought it was very interesting and relevant to have all the care providers there to discuss different aspects of her care. It was helpful to get a better understanding of the medical perspective of her care while also making sure that Mrs. Kim was being respected and valued”.

Negative comments about the Virtual Clinic (16%)
“No, I did not like that you could only ask certain questions, there was more I wanted to ask her.”
Please comment on what worked well for you in the Virtual Clinic.

Video conferencing (28%)
“I liked that I could use my own computer and phone from home and that I could revisit the clinic online anytime I wanted to”.

Discussion (28%)
“Able to facilitate discussion among many participants in a constructive way”.
“Everybody was allowed to speak their mind and good ideas were shared”.

Evaluation Findings – Virtual Clinic
Discussion/Conclusions

• Limitations
  • A virtual clinic and video conferencing can be used to offset the logistical difficulties of scheduling students from 8 professions in one place.
  • “Serious gaming” is an acceptable learning platform for most students.
  • Students highly value IPE opportunities and are curious about their role in IPP
• Opportunities to meet other students in-person are also highly valued by students.
• Opportunities to observe real IP team in action must be cultivated.
• Meeting facilitation must be taught and practiced.
• Participation by the entire class instead of individually was rated lower.
Creation of a virtual patient requires:

1. Resources (grant funding)
2. IP Faculty collaboration and support of effort
3. Technical expertise
4. Cultural expert consultation and actors with appropriate accents
Discussion/Conclusion

Creation of a virtual patient has advantages:

1. IP Faculty collaboration
2. Tailored interview questions to reinforce Motivational Interviewing, cultural competency, and specific interview skills
3. Ability to adjust based on evaluations
Future Research

- Further research involving IP educational pedagogy and the use of distance technologies is needed.
  - Compare uses of virtual clinic with larger, more diverse student groups
  - Identify Motivational Interviewing skills which need the most reinforcing
  - Follow up with participating students regarding perceptions of interprofessional practice application in their clinical education.
Future Research

• Compare uses of virtual clinic with other learning strategies (e.g., standardized patient) and evaluate their cost-effectiveness

• Faculty acceptance or resistance on the use of virtual clinic
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