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Use of Simulation to Develop Students' Skills in Reminiscence Research

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Undergraduate students can provide invaluable support to research teams focused on reminiscence. However, because these students often have little experience in the field, both as researchers and as students engaging in reminiscence work, background work is needed to develop a foundation for student engagement in reminiscence with older adults. It is imperative that students are well educated in all aspects of the research process: from obtaining consent to responding to reminiscence research participants who may become upset and confused to interacting with staff at the field site. Students will also need to develop skills in collecting data using standardized tools and instruments. In order to ensure students were well prepared as researchers for studies we conducted at nursing homes, a curriculum was designed to teach students these skills in a simulation laboratory using a standardized patient actor. Simulating a variety of reminiscence research situations in a controlled setting, with an actor portraying a research participant, allowed these undergraduate student researchers-in-training to become skilled in these areas prior to engaging in research in the field.

For cognitively impaired older adults living in nursing homes, reminiscence can be a valuable tool to help improve mood, stimulate cognition, and strengthen connection with caregivers. Over the past few years, our research has focused on describing reminiscence activities in nursing homes by using reminiscence as a therapeutic intervention for cognitively impaired nursing home residents (Henkel & Kris, 2018; Henkel, Kris, Birney & Krauss, 2016; Kris & Henkel, 2018; Kris, Henkel, Krauss & Birney, 2017). As part of these research activities, we have asked residents and nursing home staff about their feelings towards reminiscence activities, engaged them in structured reminiscence interventions, and assessed the interactions of residents with caregivers (Certified Nursing Assistants) primed to provide reminiscence activities. In collecting data, we worked together with undergraduate student researchers-in-training from both nursing and psychology. In order to ensure that the rights and welfare

of older adult residents were protected and that the data gathered were valid and reliable, it was important that students were well trained in recruiting subjects and administering tools. In order to build competence and confidence in interacting with our cognitively impaired older adults who participated as research subjects in the field, our nursing school's Simulation Laboratory was used to train research assistants using an actor playing the role of an older adult.

Using Simulation to Teach and Learn

Simulation has been used across many curricula including nursing, medicine, allied health, social sciences, and business schools to allow for experiential learning to take place (Cook et al., 2011; Jeffries, 2012; Steele et al., 2009). The theory of simulation training is that practicing a skill before needing to do so in real situations improves the quality of professional skillsets.

Simulation-based education using lifelike, programmed mannequins has been shown to be effective in enhancing a variety of clinical and interpersonal skills among nursing students. For instance, student nurses might practice clinical skills such as drawing blood or taking blood pressure while working with a lifelike programmed mannequin. In addition, students can work through simulations that improve their communication skills when working with patients who present communication challenges, such as those who are cognitively impaired. Simulation has also been used to increase the level of comfort with clinical skills, such as

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medication dispensing, wound care management, and assessing for changes in a patients' medical condition (Kim & Jang, 2017; Jeffries, 2012). Learning in a simulated training environment allows students to develop skills in a safe, non-threatening environment. This format also provides an opportunity for critical thinking, clinical reasoning, and prioritization of care to take place (Cant & Cooper, 2010; Norman, 2012).

To enhance the realism of simulation, live trained actors, also known as standardized patients, are sometimes used in simulation scenarios to assist learners to become competent medical providers by using scripted scenarios that accurately depict real life situations in a controlled and consistent manner. These standardized patients have previously been used to assess communication skills of medical providers (Downar, McNaughton, Wong, Lapointe, Seccareccia, & Knickle, 2017) and have been shown to enhance communication skills and empathy among trainees (Teherani, Hauer, & O'Sullivan, 2008).

Training Procedure

For our research projects exploring reminiscence in nursing homes, researchers-in-training completed several simulation exercises in the lab. Each exercise took from 10 to 15 minutes to complete, with each exercise completed at least twice. One of the exercises included an introduction to the research project designed to ensure that students could properly cover key elements of informed consent with potential subjects. Because our research participants were older adults with varying degrees of cognitive impairment living in a nursing home, these key elements involved discussing: (a) the purpose of the study, (b) why they were being recruited, (c) what would happen if they chose to participate, (d) that there was no risk or change in care if they participated, (e) that they could drop out any time or skip any tasks or questions they chose, and (f) what they should do if they had questions.

To model real-world scenarios, actors played out several different complications during the simulation exercises, such as being confused or having hearing or visual impairments. Laboratory role-play scenarios allowed student researchers-in-training to be properly prepared and comfortable managing these situations in the lab before heading out into the field. For instance, they could practice offering a pocket talker if it appeared the potential subject could not hear well. They could choose to read aloud written information to visually impaired participants. If a resident appeared fatigued during data collection, they could offer to take a break or offer to come back at a later time. For residents who appeared confused, they could assess if the resident was too confused to continue. The scenarios were not scripted but were designed to be dynamic, with the standardized patient actor instructed to improvise a variety of situations discussed prior to the simulation activity (e.g., nodding off or appearing inattentive as the researcher interviewed them, or as they filled out a questionnaire, having vision or

hearing problems, not understanding what is being asked of them). These scenarios were used to help researchers-in-training learn the proper procedures for gathering data for a research study using reminiscence as a research intervention.

For the purposes of this project, the traditional uses of simulation in nursing education served as a technique to educate undergraduate student researchers-in-training. This technique taught research skills specifically about reminiscence in nursing homes with both residents and nursing staff. Research assistants educated via simulation allowed for real time training to take place. Throughout the patient care scenarios, the standardized patient alternated between playing the role of the resident being interviewed during a research study, and the role of a CNA who is being asked to participate in the reminiscence study. As the simulation took place, a trained simulation facilitator observed the interaction between the research assistant and the standardized patient or CNA in order to provide feedback to the student researcher-in-training. At the conclusion of the simulated scenario, the student and the facilitator spent time discussing the simulation. This debriefing phase was a key component of simulation and was an invaluable component of the learning process because it helped make the student's learning concrete and explicit (Cantrell, 2008; Fanning & Gaba, 2007). Debriefing allowed students and faculty to have a full discussion of the student's strengths and areas identified for improvement.

Skills Learned by Students

Scenarios were modeled after those that often occur when doing field work so that student researchers could learn about and practice them through simulation exercises. These scenarios were based on previous work in the field and knowledge of Institutional Review Board (IRB) regulations. These topics included:

- 1) Obtaining consent from a resident who is cognitively intact.
- 2) Obtaining consent from a resident who is cognitively impaired.
- 3) Observing and audio recording routine care delivered to a resident by a CNA.
- 4) Observing care from a CNA or resident who is reluctant to be recorded
- 5) Responding to residents who may become upset.
- 6) Interacting with residents' families and nursing staff.
- 7) Collecting data using standardized tools and instruments.

Preparing Students to Obtain Informed Consent from a Cognitively Intact Resident

One goal for undergraduate student researchers-in-training was to develop confidence and skills in describing key elements of informed consent through simulation exercises before they began collecting data in the nursing home setting. Therefore each student completed the informed consent scenario several times, each time with increasing levels of complexity by adding complicating factors likely to occur in the real world setting. Prior to a given simulation exercise, the healthcare actor was prepared by describing the context of the study and her role. The patient actor was primed with common questions and statements that a resident might ask prior to consenting for the study, for example: (a) "How much does it cost?," (b) "What if I am too tired to complete all of the questions?," (c) "Can we do it later?," and (d) "I need to think about it, I'm not so sure."

In running through the simulation of interactions with nursing home residents the actor was able to alter her role across a variety of scenarios that the student researcher might encounter. For example, when the resident actor was asked to sign the informed consent, the actor stated, "Can you point to the line where I need to sign? I can't see it without my glasses." Ideally, such a statement should cue the student to get the resident his or her glasses, instead of simply pointing to the line, to ensure the resident has full knowledge of what they are signing. In a separate scenario, the actor was hard of hearing, repeatedly asking the researcher to repeat questions from our surveys. This is a common scenario, as cognitively impaired older adults have high rates of hearing loss. Because of this, amplification devices for residents who are hard of hearing are available, so if it becomes obvious that a resident cannot hear adequately, the student should offer to get the amplification device instead of repeatedly shouting questions.

Preparing Students to Obtain Consent from a Resident Who is Cognitively Impaired

At the nursing homes themselves where research is being conducted, the student researchers-in-training are usually provided with a list of appropriate residents from the charge nurse on the nursing home unit. The degree of cognitive impairment among individual residents can be challenging to assess. Therefore, in the simulation training exercises, the actor was instructed to occasionally show signs of impairment throughout the consent scenario. In one example, she asked for the student's name several times, interrupted the students, and asked questions that were off-topic.

Over time, one objective was for the students to develop an understanding about when a resident might be too impaired to provide informed consent and gracefully close the resident interaction. Prior to ending the patient interaction, the correct action from the student would be to

ask the resident if it would be OK to talk to someone in their family about the reminiscence project. While most of the student researchers-in-training recognized signs of confusion in our resident actor and appropriately ended the interaction, some soldiered on and asked our confused resident actor to sign our consent form. Therefore, this constituted an important point of student learning, and one that was addressed during the debriefing sessions so the students could reflect on it and adapt their behaviors.

Observing Care from a CNA

There were situations in some nursing homes when audiotaping and observing residents was a sensitive topic. It was important that student researchers-in-training were empathetic to the needs of these CNAs and did not coerce participation. At the same time, it was important that the nursing assistants understood the purpose of the research, and the potential benefit to the residents. Therefore in the simulation, the student was instructed to approach the actor, explain the project in a non-threatening way, ask for permission to audio record the care interaction, and obtain consent from the CNA. This interaction was observed to ensure that the research assistant included the key elements of informed consent when explaining the project. Prior to this simulation, our actor was prepared with sample questions that nursing assistants typically ask: (a) Why do you need to tape me? (b) What if I have done this before, can I participate twice? (c) Is this OK with my resident? and (d) Will you be giving this information to my boss – is it private? Again, complicating factors were added, inspired by these real-life concerns. The actor CNA was instructed to express concern that she might get into trouble because of the possible sharing of the information with administration, and to ask pointed questions about why they need to be recorded and what would happen to the recordings.

In our debriefing, we discussed what the student researchers-in-training should do if the CNA expressed concern that the day was not a good one, if the CNA asked if they could come back at a different time, or if the CNA insisted that they not be taped. Again, it is an important element of the informed consent process that the research participants are free from coercion, so students need to temper their desire to collect data against the need to allow participants to opt out. Because undergraduates often want to do a "good job" they need to hear, throughout these scenarios, that the best course is to allow participants to opt out and not pressure subjects to participate if they are uncomfortable.

Responding to Residents Who May Become Upset

Reminiscence can sometimes rekindle difficult memories for nursing home residents. Sometimes remembering loved ones who have passed or homes left behind can be bittersweet. During an assessment of the occurrence and frequency of depressive behaviors, which

is a routine part of the research project, our patient actor was instructed to express feelings of depression by answering affirmatively to some questions on the Geriatric Depression Scale (GDS) and to comment spontaneously to the researchers-in-training on feelings of sadness about the recent loss of a loved one. While in this scenario the actor did not express feelings of suicidality, this topic was covered during the debriefing.

When residents begin to express feelings of loss, there is a natural tendency for caregivers to attempt to quickly curtail those discussions and change the subject (Kayser-Jones, 2002). Therefore, it is important to give student researchers-in-training some phrases they might use when a resident begins to express difficult feelings, such as, "I'm so sorry that happened" or "It sounds like that was hard for you." These communication techniques can help open conversation, rather than close it, and build empathy between the student researchers-in-training and the residents. We were aware of previous research suggesting that residents in nursing homes experience high rates of clinical depression (Ubricht, 2017). Although they are not trained clinicians capable of diagnosing mental disorders, one objective was for the student researchers to know what to do if they became concerned about the psychological state of a resident or if a resident expressed feelings of suicidality. In these situations, the student researchers-in-training were taught to let the charge nurse know what happened right away and to contact the Principal Investigators via cell phone. If additional follow-up would have been necessary, the Principal Investigator would follow-up with both the charge nurse and the Director of Nursing to ensure the safety of a patient before the research assistant left the building.

Collecting Data Using Standardized Tools and Instruments

The ultimate aim of the reminiscence research study was to determine the impact of reminiscence activities on both residents and caregivers and, therefore, accurate collection of data using standardized research tools was critical. The scenarios using the resident actor provided practice in administering these tasks and allowed feedback to be given to the undergraduate researchers-in-training before being in the field. Prior to the simulation, the actor was provided with copies of the standardized tools. The actor was instructed to ask the research assistants, "Did I answer correctly?," a common question asked by research participants. The actor was also instructed to give unclear responses to some of the Likert-scale questions, answering yes or no to items on a 5-point scale, answering "maybe 2 or 3", or asking for response options to be provided repeatedly.

Collecting data from cognitively impaired older adults presents its own unique set of challenges. Residents completing memory tasks often seek feedback on whether their responses were correct. While it is the natural inclination of the students to want to tell the residents how

they were doing, to provide some hints, or reassure them in some way, the simulation exercises allowed them to practice remaining neutral. Student researchers-in-training were given opportunities to practice providing generic feedback such as "some of these tasks are designed to be challenging," "what you are doing is fine," or "keep going" or to provide encouragement like "it's OK to guess." When using instruments scored with a Likert scale, lists of possible answer choices were printed in an enlarged font and kept visible in front of the residents to help keep them on task. Students were also encouraged to repeat the instructions and reminiscence prompts at several key points during the task, as a reminder.

Lessons Learned

We used simulation to address some of the unique challenges in having undergraduate research assistants obtain consent from, administer standardized questionnaires, and deliver reminiscence interventions to cognitively impaired nursing home residents. Simulation is not a novel technique in nursing education, although simulation is most traditionally employed using static mannequins in order to teach technical procedures. Standardized patients are particularly advantageous in the context of reminiscence-based activities, as they can model a wide array of cognitive states and produce naturalistic, emotional interactions. However, as this was the first time this technique was used by our research team as a training tool for the researchers, there were several lessons learned that may be helpful to future researcher-instructors who may attempt to use this technique in the future.

The undergraduate researchers included both nursing and psychology majors, who had disparate patient care experiences. For students new to interacting with nursing home residents, the simulations were more difficult. The researchers-in-training were sometimes at a loss to know what the correct action was, undermining their confidence. In the future, the simulation will include more pre-simulation discussion before putting the students through the simulation exercises. Role modeling of ideal behavior by the principal investigators will be provided so that the students know what behavior to emulate prior to the simulations.

As students came in for research team meetings while they were actively testing subjects at the nursing homes, their actual encounters with the residents were often discussed, therefore future research simulations will continue to evolve over time. It was common, for example, that a student researcher-in-training might not know how to record a resident's response. Sometimes residents might report a Likert scale score as "2 or 3", and these situations became topics for discussion in research team meetings. Therefore, in addition to the scenarios described above, in which students were well-trained, allowing these simulations to evolve can also help ensure the fidelity of interventions in the future.

Due to the variability of student scheduling, students both joined and dropped off the research project at different points during the semester. While initially the simulation exercises were scheduled once at the beginning of the year, in the future it will be important to run simulations throughout the semester in order to ensure the entire research team had the same training. This is important not only to ensure compliance with human subjects regulations, but also to ensure that interventions are being uniformly carried out.

Conclusions

Reminiscence research simulations help develop undergraduate students' skills prior to collecting data in the field. Investigators using reminiscence with research subjects, irrespective of their participants' cognitive status, will face an array of challenges related to the sometimes emotional interaction between the research participant and the research assistant. Therefore, ensuring researchers-in-training are well prepared prior to entering the field is important for all research involving reminiscence.

The training provided focused on obtaining consent, understanding how to collect data in a reliable and accurate way, and learning how to best interact with staff. Clearly, this material might be presented to researchers-in-training using a variety of methods, from written protocols to discussions at research team meetings. However, research has demonstrated that simulation-based learning is superior to other types of learning, particularly when focusing on communications outcomes (Huang, Hsieh, & Hsu, 2014). The use of patient actors for simulation of medical procedures and interactions has been described in the literature; however, because using simulation to prepare researchers to interact with and collect data from research participants is a novel approach, additional research is needed to generate evidence of efficacy (de Oliveira et al., 2015). The simulation training described in this paper focused on scenarios specific to this research project; however, the technique can be modified to fit a variety of different kinds of projects using reminiscence.

Across the field of reminiscence there is a need for standardized training in the use of this technique (Woods, O'Philbin, Farrell, Spector, & Orrell, 2018). Simulation can be particularly beneficial to undergraduate students who do not have much background in therapeutic communication techniques. In these situations, principal investigators can role model ideal behavior, allowing students to develop confidence and competence in their skills.

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