# QUALITATIVE INSIGHTS INTO ADAPTING AN IN-LAB EMPATHY INTERVENTION FOR USE VIA VIDEOCONFERENCING WITH GROUPS OF NURSING STUDENTS

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Acknowledgements: We thank our research assistant, Sahar Karimzadehnamini, and the caregiver actor, Krista Hoeberg. We also thank the participants and their instructors. Portions of this research were presented at Health Professions Educational Research Day, Centre on Aging Annual Spring Research Symposium (osf.io/8amjz), and the Annual Meeting of the Society for Personality and Social Psychology (osf.io/vbgm8).

Role of funding source: This research was funded by a Society for Personality and Social Psychology Small Research Grant under Grant <319529 346000-2000>.

Keywords: Empathy; Education; Communication; Caregivers; Videoconference

Declarations of interest: None.

**Abstract**

Caregivers often feel neglected by health care providers who lack communication skills or make assumptions about them. Therefore, it is important for health care providers to receive communication training and education about caregivers. Previous in-lab one-on-one pilot intervention work indicates that nursing students can improve their communication skills by learning about and practicing perspective-taking (i.e., understanding a person's perspective from that person's point of view). The present study tested the feasibility of providing the intervention via videoconference to nursing students at the group level. Students from remote locations learned about and practiced perspective-taking, and watched a brief video where a family caregiver actor discusses depression and close relationships with a trained nurse. Thematic analyses revealed several themes, including beliefs that the perspective-taking technique helped students to grow as a person, learn about caregiver issues, and better understand family caregivers' motivations. Students found the study to be an "eye-opening experience" and perceived the technique to be important for nursing success. We discuss challenges faced in adapting the intervention. Overall, the present research demonstrates promise in adapting a one-on-one intervention for use with groups, and helping student nurses understand family caregivers' perspectives.

# Qualitative insights into adapting an in-lab empathy intervention for use via videoconferencing with groups of nursing students

Over 8 million Canadians (Turcotte, 2013) and 43 million Americans provide informal care for family and friends (Family Caregiver Alliance, 2016). Being a caregiver is very stressful (Turcotte, 2013). Stressed caregivers often experience negative health outcomes, such as depression, which can interfere with their ability to provide care (e.g., Mahoney et al., 2005). To effectively support caregivers, it is essential that health care providers accurately detect what the caregiver is thinking or feeling about his or her psychological health (i.e., it is important for health care providers to be empathically accurate). To do so, the health care provider needs to sensitively comprehend the caregiver's perspective. Unfortunately, caregivers often feel neglected by health care providers who lack communication competence or make assumptions about them (e.g., Lund et al., 2015). Therefore, it is important for health care providers to receive communication training and education about caregivers (e.g., Lobchuk et al., 2016).

Nurses can improve their communication competence by learning about and practicing *perspective-taking* (cognitive empathy): Understanding a person's perspective from that person's point of view (Lobchuk et al., 2016). Making an effort to understand a patient's perspective and checking to ensure accuracy of that understanding communicates care (Sternke et al., 2016). Health care providers who engage in perspective-taking are perceived as having better interpersonal skills and their patients are more satisfied (Blatt et al., 2010) and compliant (Kim et al., 2004) than patients of those who do not engage in perspective-taking. Thus, perspective-taking is a valuable approach for patient-centered care. Fortunately, empathy is a teachable skill (e.g., Brunero et al., 2010; Richardson et al., 2015; Teding van Berkhout & Malouff, 2016).

Guided by Davis' empathy model (1994) and Batson et al.'s (1997) perspective-taking instruction sets, previous pilot research used an innovative in-lab video-feedback intervention to successfully teach nursing students perspective-taking skills and improve interactions with caregivers (Lobchuk et al., 2016, 2018). Lobchuk and colleagues' intervention involves introducing participants to the concepts of empathy and perspective-taking, and guiding participants through an exercise that gets them to: a) know themselves, b) set aside judgment, c) understand that there are multiple perspectives in a given situation, and d) seek to understand and validate another's perspective. Participants are provided with a homework sheet that summarizes what they learned and encourages them to practice with family members and friends who engage in health-risk behaviors. As additional practice, participants subsequently come into the lab and engage in a video-recorded dialogue with a family caregiver or family caregiver actor. Following Ickes (e.g., 2001), after the dialogue, participants infer from the video-recorded dialogue what the caregiver was thinking and feeling throughout the dialogue. This experience allows them to practice taking the caregiver's perspective not only while the dialogue is occurring, but also after the dialogue has taken place. Participants' inferences are compared to what the caregiver indicated they were actually thinking and feeling throughout the dialogue and later shared with the participant to give them a sense of how accurate they were. In addition to improving perspective-taking skills and interactions with caregivers, participants self-report experiencing less judgment towards others, including caregivers who engage in health-risk behaviors (Lobchuk et al., 2016).

Our overall aim is to develop an empathy-related video-feedback intervention for future uptake in basic and continuing education of student and postgraduate clinicians in nursing and other health care disciplines. The present research adapts the intervention to a) provide it in class

b) via videoconference and using c) a standardized video to test perspective-taking skills instead of a one-on-one live interaction with a caregiver. These adaptations allow for efficiency, farther reach, greater control, less burden on participants' time, and greater feasibility for classroom use. Additionally, nursing students in remote locations do not always get the same learning experiences as nurses in urban areas (Clark & Piercey, 2012). Thus, participation in this study provides that opportunity.

The goal of the present research is to assess whether the intervention can be expanded to the classroom, delivered via videoconferencing, and involve a standardized video. To address this goal, we assessed participants' perceptions of the intervention and kept notes. For transparency, in line with previous intervention work (e.g., Lobchuk et al., 2016), we also had the following research question: Do students who learn about and practice perspective-taking have higher empathic accuracy scores (i.e., are they more accurate at inferring what another person is thinking and feeling) than students who receive the regular curriculum? We hypothesized that they would, over and above their general tendency to be empathic.

## Method

This study was pre-registered on the Open Science Framework (OSF; link blinded for peer-review): https://osf.io/jzuya/?view_only=07cfc83392be4484b7ee4672fb22c2bc and received ethics board approval from all institutions involved in the study. Additional study materials are available here (link blinded for peer-review): https://osf.io/59cuc/?view_only=8e3ffa82cc2341419cc431d39c01622d

### Participants

Based on previous literature on empathic accuracy (Blanch-Hartigan et al., 2012) and a-priori power analyses using G*Power (version 3.1; Faul et al., 2017), we aimed to recruit 128

participants (64 intervention group + 64 control group) to detect a Cohen's *d* of .50 (80% power, α at .05). Unfortunately, we were only able to recruit 69 participants (35 intervention group + 34 control group). As planned in the pre-registration, participants who did not complete both phases of the study (n = 6) were excluded from analyses, leaving 63 participants (33 intervention group + 30 control group).

Participants were second and third-year nursing students (9 men, 54 women; age range = 19 years old – "above 40"; 24 ethnicities identified; 23 were family caregivers themselves) from two small Canadian universities who participated for course credit. Participants had the option of participating in the study or completing an assignment. Participants were either enrolled in a psychiatric nursing program, taking a course related to mental health, or were in a clinical placement where caregiving and mental health were discussed. Most participants reported receiving training on how to communicate with: family caregivers (68%), individuals about health risk behaviors for chronic illness (68%), and individuals about mental health concerns (57%). Twenty-four participants indicated that they had their own health-risk behavior they wanted to change (e.g., smoking).

**Procedure**

Participants were recruited for a study on "Improving empathic accuracy through an in-class intervention provided via videoconferencing" (see supplemental materials for flow diagram of study process and for an intervention design description following the Intervention Taxonomy; Schulz et al., 2010). Classes were randomly assigned to intervention or control groups as they enrolled in the study, using Random.org, a website that generates random numbers. The whole class was randomly assigned to one group. The study was completed in class over two class periods via videoconference (Skype™ or MBTelehealth™). The study

occurred at a time convenient for instructors and it took approximately 1.5 hours to complete Phases 1 and 2.

**Phase 1.** Instructors were express-mailed and e-mailed copies of study materials and instructions for dissemination to students. The first author videoconferenced with the class and explained the study to participants. Participants in both groups then completed a consent form and brief questionnaires measuring demographics and trait empathy. In the control group, Phase 1 ended here. In the intervention group, the first author taught participants about empathy and perspective-taking. As part of the instruction, the first author created a PowerPoint™ presentation that included a 3-minute video on empathy and questions for discussion to encourage self-reflection and classroom discussion (see second OSF link above to view the presentation slides). Participants in this group then received a handout on egocentric thinking (Paul & Elder, 2004) and a practice sheet, and were asked to practice perspective-taking for 1- 4 weeks as part of the homework exercise (the number of weeks depended on convenience scheduling; *M* and *Med* = 2.5 weeks).

**Phase 2.** In the second class 1- 4 weeks later, participants in both groups watched a 10-minute video where a trained family caregiver actor expressed symptoms of depression and discussed caregiving, close relationships, and health risk behaviors with a trained nurse (the second author). The actor was a middle-aged female with extensive simulated patient experience who followed a background script that gave general details about the character (see second OSF link for script). Each time the caregiver actor recorded having a distinct thought or feeling, the video was paused and, on a computer or paper, participants inferred what the caregiver was thinking and feeling. This task provided participants with an opportunity to engage in perspective-taking and allowed us to assess empathic accuracy (i.e., how accurate participants

were at inferring what the caregiver was thinking and feeling). The first author then taught participants in the control group about empathy and perspective-taking in the same manner as with the intervention group and provided them with the homework exercise so they could also receive the skills training. Finally, participants from both groups provided feedback on the effectiveness, appropriateness, and acceptability of the intervention to improve the protocol.

**Measures**

**Demographics.** Participants were asked their age, gender (I identify as…), ethnicity (I identify my ethnicity as…), current year in program, whether they were a family caregiver (e.g., a parent), and whether they had a health risk behavior they wanted to change. They were also asked about their previous training on communication with family caregivers, as well as talking to people about mental health concerns, and health risk behaviors for chronic illness.

**Empathy.** To assess participants' general tendency to be empathic, we measured perspective-taking and empathic concern using the corresponding adapted subscales of Davis' (1980) Interpersonal Reactivity Index. Example items: Before criticizing somebody, I try to imagine how I would feel if I were in their place; I am often quite touched by things that I see happen (1 = *does not describe me well*, 5 = *describes me very well*; 7 items for each subscale; $\alpha_{\text{perspective-taking}} = .33$; $\alpha_{\text{empathic concern}} = .73$).[1]

**Empathic accuracy.** We assessed participants' accuracy at inferring the caregiver's thoughts and feelings using an adapted version of Ickes' (2001) coding form and a 3-point scale (0 = *no agreement on situation (context)*, 1 = *agreement on situation, but not on tone or thoughts/feelings distinction*, 2 = *full agreement on situation, tone, and thoughts/feelings distinction*; Lobchuk et al., 2016, 2018). A trained research assistant, blind to condition and the study's hypotheses, helped the authors code the inferences of six randomly-chosen participants

to determine participants' empathic accuracy scores (Fleiss' Kappa = 0.66, $p < .001$). Again, we used Random.org to determine which participants were chosen. The first author completed the rest of the coding. Scores were calculated by averaging across coders for each inference when there were multiple coders, then summing participants' inference scores and dividing the result by the maximum score possible, multiplied by 100 to get a percentage score out of 100 (Ickes, 2003). Participants were not penalized if they could not hear what was said in the video: Their maximum score possible varied depending on how many inferences they made (e.g., Ickes, 2001).

**Perceptions of the intervention.** At the end of the study, participants indicated whether they practiced perspective-taking in the two weeks prior to the final session (*yes* or *no*), how much time they devoted to practicing, and what the experience was like for them and others.[2] They then answered three questions regarding effectiveness, appropriateness, and acceptability of the study materials (1 = *not at all*, 7 = e*xtremely*). Subsequently, they indicated whether the perspective-taking technique helped them to understand the caregiver's thoughts and feelings (*yes* or *no*), and if yes, how it helped. They were also asked whether they plan on continuing to use the technique to better understand patients and family caregiver's health-risk behaviors (*yes* or *no*) and why or why not. Finally, they were asked for final comments about the study to help protocol development.

Both authors read all open-ended responses about the intervention and independently used content analysis and constant comparison techniques to identify, code, label, and categorize them (Lincoln & Guba, 1985; Patton, 2002). The second author was blind to condition. We then met to discuss and came to full agreement on the final codes.

## Results

We recruited fewer participants than anticipated making any statistical inferences underpowered and, thus, limiting our ability to test our hypothesis that participants in the intervention group have higher empathic accuracy scores than participants in the control group. Therefore, we will not report inferential statistics and instead focus on the qualitative findings. Additionally, participants in both groups appeared to have similar qualitative comments, therefore we present results combined across groups. Participants scored in the mid-range for perspective-taking ($M$ = 3.58, $SD$ = 0.47), empathic concern ($M$ = 2.91, $SD$ = 0.73), and empathic accuracy ($M$ = 51.63%, $SD$ = 13.50%).

**Perceptions of the Intervention**

Participants perceived the study to be effective ($M$ = 5.22, $SD$ = 1.31), appropriate ($M$ = 5.87, $SD$ = 1.08), and acceptable ($M$ = 5.96, $SD$ = 1.09).

**Practicing perspective-taking with others.** Thirty-eight participants indicated that they had practiced for an average of 28 minutes ($SD$ = 27.20).[3] When asked what their experience was like practicing perspective-taking, four themes emerged: *self-growth, effect on other, process experience, and "part of everyday practice*" (see Table 1 for frequency counts).

***Self-growth.*** Participants described the experience of practicing perspective-taking as having an effect on themselves. For example, they thought the experience was "eye-opening." One person wrote, "Made me a better person even just a bit." Another wrote, "Feel less judgemental."

***Effect on other.*** Participants also described the experience of practicing perspective-taking as having an effect on others. Participants thought that others were "more open." One person wrote, "Other people appreciate it," while another wrote, "The person/patient was more open to what they truly feel."

***Process experience.*** This theme included participant's perception of the experience of practicing perspective-taking. Participants frequently mentioned the process of engaging in perspective-taking and what that felt like. For example, one person mentioned that it was "a lot to process" and many others mentioned that they thought it was a "good experience." As another example, someone wrote, "It was different…difficult at times." Another wrote, "It's helpful. It's better understanding of others."

***"Part of everyday practice."*** In this theme, participants indicated that they already engage in perspective-taking. For instance, one person wrote, "I try to do this in all aspects of my life."

**Practicing perspective-taking with the caregiver.** Most participants (89%) thought the perspective-taking technique helped them to better understand the family caregiver's thoughts and feelings about health-risk behaviors. When asked *how* perspective-taking helped them to understand the family caregiver, three themes emerged: *self-growth, learning about caregivers' experiences, and go deep to better understand other* (see Table 1).

***Self-growth.*** Once again, participants described the experience as having an effect on themselves by, for example, making them "less judgemental." One person wrote, "Made me more understanding," while another wrote, "Be more mindful."

***Learning about caregivers' experiences.*** In this theme, participants indicated that they had learned something about caregivers. They described learning that caregivers experience complex situations and can need a break. For example, "They get overwhelmed and have caregiver burnout fast"; "Made me realize how hard it is for them."

***Go deep to better understand other.*** Finally, they frequently mentioned that the technique facilitated an other-focus, which helped with understanding the caregiver's

motivations (i.e., as one participant put it, perspective-taking helped them to "dig more deeper"). For example, "There's more than the surface"; "Helps you have an idea of the situation."

**Future use of perspective-taking.** Most participants (98%) planned on continuing to use the technique to better understand patients and family caregivers' health-risk behaviors. Three participants stated that they either already use perspective-taking or that perspective-taking may not always help to understand others. When asked why they planned on continuing to use the technique, two themes emerged: "*Helpful," and "good" [for professional role success]* (see Table 1).

***"Helpful."*** Participants described wanting to continue using the perspective-taking technique because they found it helpful. For instance, one person wrote, "Helps to understand the reasoning behind behaviours" and another wrote, "Effective."

***"Good" [for professional role success].*** Moreover, they thought the technique was important for nursing success. For example, they perceived "empathy to be a critical part of the client-patient relationship," and that the technique would help them to "promote patient health and recovery." As an additional example, one person wrote, "Give my patients the best possible care." Another wrote, "Allowing you to enhance the therapeutic relationship."

## Discussion

Participants in this study were able to learn about and apply perspective-taking skills in- and outside of the classroom. This economical study is the first to expand a novel empathy intervention for use with groups, via video-conference, with a standardized video. Participants described the experience as encouraging self-growth, helpful, and insightful. They also perceived the study to be effective, appropriate, and acceptable.

Students reported that learning about caregivers' experiences was "eye-opening" and that the perspective-taking technique was "helpful" for going "deep," yet could be "difficult," which is consistent with past research (e.g., Lobchuk et al., 2018). Nursing students do not always receive opportunities to learn about caregivers (Mast et al., 2012). Yet, caregivers are an essential part of the health care team and want to be perceived that way (Cloyes et al., 2014). Unfortunately, caregivers sometimes perceive their relationships with health care providers to be strained and lacking in good communication (e.g., Cloyes et al., 2014). Targeting health care providers when they are students and still learning allows them to practice their empathic skills in a safe environment and get past any awkwardness that they may experience (Lobchuk et al., 2018). Students want communication skills training (Keyworth et al., 2013), and seem to appreciate the opportunity for self-reflection and self-growth during this formative time (Cunico et al., 2012). Thus, educators should strive to provide opportunities for students to dialogue with 'real' caregivers or individuals who pose as caregivers to bolster student confidence in empathic processes and learn about caregiver situations that affect their physical and psychological well-being.

**Challenges**

Teaching groups of students via videoconference may provide similar benefits to teaching face-to-face (Tomlinson et al., 2013). However, teaching via videoconference is not without its challenges.

**Audio.** We learned about the importance of high quality audio while using this novel method. The family caregiver actor spoke softly in the video, causing her to be hard to hear for most participants until we employed the services of a technology specialist to artificially boost her volume. Future interventionists wishing to employ a similar technique should ensure that the

volume is adequate on multiple devices. They should also consider using lapel mics, especially if one of the people in the video speaks softly, as the depressed caregiver did in our study. Additionally, for one set of intervention group participants, there was audio feedback during the videoconference making it difficult for participants to hear the researcher at times and causing some discomfort. Researchers and educators should ensure that the other party mutes their microphone when not speaking. Finally, because we were showing a video through videoconference, the quality of the videoconference session (mainly the audio) was sometimes poorer for one group of especially remote, control group, participants. This was likely due to limited bandwidth. We echo the advice of other videoconference interventionists (e.g., Parker Oliver & Demiris, 2010) to be flexible and patient when technological issues arise.

**Unexpected responses.** In addition to the audio issues, we also received some unexpected responses and missing data on the empathic accuracy measure. This was partially due to not conducting the study in an in-person, one-on-one setting. In previous versions of this intervention (e.g., Lobchuk et al., 2016, 2018), the research assistant sat one-on-one with the person making the inferences and was able to help the participant if they made a mistake during the task, if the volume was low, or if they had questions (e.g., with who to focus on, or the fact that they should make an inference even if the person they were inferring from did not say anything). The empathic accuracy scores were lower than other research (Lobchuk et al., 2016), which could be partially attributed to this difference in design. Participants may be reluctant to ask questions in the group setting. Future researchers should continue to emphasize that participants can ask questions at any point in the study, attempt to create a safe environment where participants feel comfortable speaking up, and clarify instructions.

**Recruitment.** We also experienced difficulty with recruitment. Initially, instructors were very interested in having their students participate. However, some failed to respond to repeated follow up emails after their initial expression of interest. Instructors have a lot of content that they need to cover and it is possible that some felt that participation was too onerous time-wise once they fully considered whether the study could fit within their course. Additionally, a small number of participants did not complete Phase 2 for sometimes unknown reasons. Future researchers should think of ways to improve retention. For example, researchers could allow participants to complete study materials on their own time. They could also provide a link to a demonstration video with already-completed inferences so that participants can get a better sense of what the task entails beforehand.

**Validity.** Finally, a limitation to this study is that participants were not blind to condition or the study's purpose, because this information was located in the recruitment letter and consent form. It is possible that this may have affected their responses (e.g., by mentioning that they experienced self-growth when they may not have). Disclosing less information at the outset (i.e., in recruitment letters and consent forms), as well as providing a second consent opportunity and extended debriefing at the completion of the study session would attenuate this limitation. For example, in social psychological studies that involve deception, or not revealing the study's full purpose at the outset, researchers provide the study's purpose at the completion of the study, tell participants why they were not told everything from the outset, and provide participants with an opportunity to consent to their data being used now that they know the study's purpose. This method is generally acceptable to researchers, participants, and ethics boards. Despite this limitation of participants not being blind to condition or the study's purpose, we added to validity through random assignment and blinding to condition when possible during analysis, and by

using established measures throughout the study. We also added to external validity by conducting the study in-class instead of in a lab. Future research should replicate this study using a larger sample and some of the proposed solutions.

**Strengths**

A strength of this research is its potential for adaptability to deliver an effective, efficient, and economical intervention to classes in rural and remote regions. For example, interventionists can vary the number of student groups that participate in the videoconference call. In the present study, sometimes two classes videoconferenced simultaneously (i.e., it was a three-way call). This enriched discussion during the empathy training session. As previously mentioned, qualitative results replicated Lobchuk and colleagues (2016, 2018) who also found that participants perceived the intervention to increase their understanding of the caregiver's experiences and facilitate self-growth, and described the practice experience similarly (e.g., as "different" from their usual experience). Similarity in comments between previous research and the present regarding the intervention and practice experience provides further evidence of the potential for adaptability and acceptability of the intervention.

Another strength is the use of recommended strategies to "enhance empathy in nursing education" (Ward et al., 2012, p.38): The intervention exposed "students to positive role models [in this case, the nurse in the video] to improve students' capacity for empathy" and helped "students improve their narrative skills by giving them the opportunity to listen attentively to patients' narratives of their illness rather than trying to complete a clinical assignment" via the dialogue video.[4] Furthermore, the intervention provided "training that directs the student to recognize an 'empathic opportunity' when communicating with patients" via the empathy training session; and encouraged "the studying of literature and the arts that would provide

students with a rich source of knowledge and insight about human experiences" via a handout on egocentric thinking provided alongside the homework exercise. Combined, these strategies may mitigate nurses' decline in empathy (Ward et al., 2012).

**Conclusions**

Perspective-taking is an important skill for nursing students to develop to facilitate their communication with others. Intervention research such as the present study helps researchers and educators discover the best way to teach this skill. This intervention appears adaptable in multiple ways: it can be conducted one-on-one or in class with group settings; it can include a live interaction or standardized video, as well as real or standardized actor patients and caregivers. The present study revealed that adaption to use with groups via videoconferences comes with challenges, such as missing data, transmission/bandwidth issues, and the necessity for quality audio. However, there are ways to overcome these issues. The adaptability makes teaching and learning perspective-taking more accessible to educators and students across geographic settings and varying resources. While future research is needed, the present research demonstrates promise in adapting a one-on-one intervention for use a) with groups, b) via videoconference, and c) with a standardized video to help student nurses understand family caregivers' perspectives and ultimately improve their communication.

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## Footnotes

[1]Previous research using this sub-scale and an undergraduate population has generally found acceptable reliability (test-retest and internal consistency; e.g., Davis, 1980). In the present study, there was little to no missing data for each item and no single item lowered Cronbach's alpha on its own. However, it is possible that there is something different about this group of nursing students: There was significant skew and kurtosis, which violates Cronbach's alpha's assumption of normality.

[2]Due to error, the open-ended question asking participants about their practice experience was not presented to six participants in the intervention group.

[3]Asking participants whether they had practiced perspective-taking was supposed to act as a condition check as well as a check to determine if they followed instructions. All participants were asked this question at the end of the study. As expected, most participants in the control group (who had not been asked to practice perspective-taking in the weeks prior to answering the question) indicated that they had not practiced (n = 17). However, there were some who, after learning about the skill, had indicated that they had practiced (n = 12) and some in the intervention group who indicated that they did not practice (n = 7). Results reported in-text are for both groups combined.

[4]Ward was probably addressing in-lab interventions, but we feel that this researcher's comments are relevant to the present study.

Table 1. *Frequency of Each Qualitative Theme for Participants' Perceptions of the Study*

| Question | Theme | Frequency |
|---|---|---|
| What did you and/or others think of the experience [of practicing perspective-taking]? | | |
| | Self-growth | 12 |
| | Effect on other | 6 |
| | Process experience | 26 |
| | "Part of everyday practice" | 9 |
| 'How' did the perspective-taking technique that you took help you to better understand the family caregiver's thoughts and feelings about health-risk behaviors? | | |
| | Self-growth | 6 |
| | Learning about caregivers' experiences | 11 |
| | Go deep to better understand other | 50 |
| Do you plan to continue using this technique to help you better understand patients and family caregivers' health-risk behaviors? Why or why not? | | |
| | "Helpful" | 19 |
| | "Good" [for professional role success] | 21 |

*Note*: The frequency count captures multiple comments made by individual participants in the same theme.

## Supplemental Materials

This document contains the supplemental materials for *Qualitative insights into adapting an in-lab empathy intervention for use via videoconferencing with groups of nursing students*

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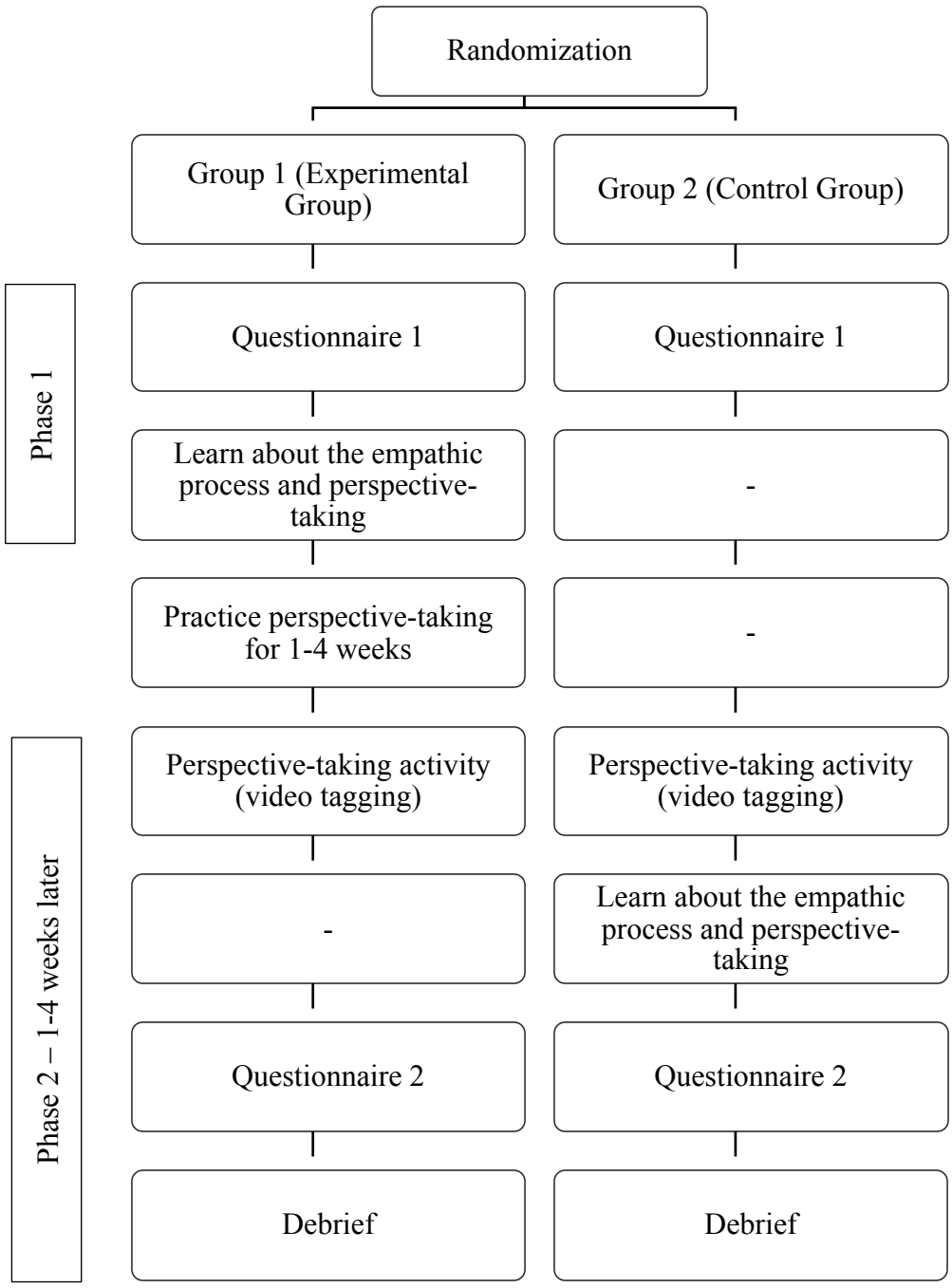
**Flow diagram**



**Intervention design description using intervention taxonomy**

| Dimension | Description |
|---|---|
| Mode | Videoconference with student groups |
| Materials | Task List for Interventionist |
| | Materials list and order of dissemination for Instructor |
| | Perspective-taking instruction script and accompanying PowerPoint™ presentation |
| | Homework practice sheet including handout on egocentric thinking (Paul & Elder, 2004). |
| | Video with actor's thoughts and feelings "tagged" |
| | Studiocode™ software |
| | Videoconference system (e.g., webcam + Skype™) |
| | MacBook laptop or iMac computer |
| | External speakers |
| | Qualtrics™ survey management or pen and paper |
| Location | Interventionist: Communication lab at local community hospital |
| | Students: Classroom or conference room at their local institution or hospital |
| Schedule | Overall duration of the intervention: ~1.5 hours |
| | Phase 1: Questionnaire 1 (demographics, trait empathy) ~20 minutes |
| | Intervention group- 20-minute perspective-taking instructional session led by Interventionist followed by a 1-4 week practice exercise by student |
| | Phase 2: ~40 minute video-tagging of family caregiver actor by student |
| | Control group- 20-minute perspective-taking instructional session led by Interventionist |
| | Questionnaire 2 (study feedback) ~10 minutes |
| Scripting | Written protocol for all phases, including perspective-taking instruction session and recruitment |

| | |
|---|---|
| Sensitivity to recipient characteristics | Feedback on some materials from students with similar backgrounds as the participants was incorporated into the present study<br><br>Materials were available in different formats (electronic or pen and paper) to accommodate participants' preferences |
| Interventionist characteristics | Trained non-health-care interventionist with university education; MacIntosh computer skills; trained on Studiocode™ software, MBTelehealth™ system, Skype™ software, Qualtrics™ survey management |
| Adaptability | *Perspective-taking instructional session*<br><br>Could be adapted for use with groups in-person<br><br>Groups could have diverse backgrounds (e.g., social work, psychology, kinesiology)<br><br>Group-size can vary<br><br>Groups in different locations can be combined (videoconference session can be expanded to have multiple groups attend simultaneously) for one or both phases<br><br>Time between phases can vary<br><br>Location can vary<br><br>*Homework practice*<br><br>Students can decide who they want to practice with<br><br>*Inferences about thoughts and feelings*<br><br>Can be made on computer or paper<br><br>Can use external speakers to amplify volume on video |
| Treatment implementation | Interventionist follows written protocol<br><br>Number and duration of sessions recorded<br><br>Self-report responses indicate that students often "buy into" the intervention |

Based on Schulz, R., Czaja, S. J., McKay, J. R., Ory, M. G., Belle, S. H. (2010). Intervention taxonomy (ITAX): Describing essential features of interventions. *American Journal of Health Behavior, 34*, 811–821 and adapted from Lobchuk, M., Halas, G., West, C., Harder, N., Tursunova, Z., & Ramraj, C. (2016). Development

of a novel empathy-related video-feedback intervention to improve empathic accuracy of nursing students: A pilot study. *Nurse Education Today, 46*, 86-93.