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## “It’s the story”: Online Animated Simulation of Cultural Competence of Poverty -- A Pilot Study

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### **“It’s the story”: Online Animated Simulation of Cultural Competence of Poverty -- A Pilot Study**

**Purpose:** In this pilot study, researchers explore an online animated simulation as an educational tool for emerging health professionals to promote cultural competence of poverty, food insecurity, and the Supplemental Nutrition Assistance Program. **Methods:** Researchers recruited participants in the allied health sciences for focus groups to explore the effectiveness of an online animation in promoting cultural competence of poverty, food insecurity, and public assistance programs. Participants were asked about their experience with the educational tool and changes in cultural competence regarding poverty, food insecurity, and the Supplemental Nutrition Assistance Program. Participants also responded to five survey questions about their experience of the educational tool and cultural competence of poverty. Transcripts from focus groups were coded according to the five constructs of the Campinha-Bacote model for cultural competence, and further coded for recurring themes within these constructs.

**Results:** Eleven participants across four allied health professions including nutrition, occupational therapy, nursing and pre-physical therapy participated in two focus groups. Researchers found all five constructs of the Campinha-Bacote model in analysis of focus group transcripts, with awareness and desire expressed more frequently and intensely. Participants stated the animated simulation increased their empathy for people who experience poverty, food insecurity and who need public assistance programs.

**Conclusion:** Researchers find that this online animated simulation was an effective tool to improve cultural competence of poverty for emerging healthcare professionals. Use of similar animations by educators of healthcare professionals may also change existing negative views towards those who rely on the Supplemental Nutrition Assistance Program benefits and reduce the barrier of stigma associated with the program.

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### ABSTRACT

**Purpose:** In this pilot study, researchers explore an online animated simulation as an educational tool for emerging health professionals to promote cultural competence of poverty, food insecurity, and the Supplemental Nutrition Assistance Program.

**Methods:** Researchers recruited participants in the allied health sciences for focus groups to explore the effectiveness of an online animation in promoting cultural competence of poverty, food insecurity, and public assistance programs. Participants were asked about their experience with the educational tool and changes in cultural competence regarding poverty, food insecurity, and the Supplemental Nutrition Assistance Program. Participants also responded to five survey questions about their experience of the educational tool and cultural competence of poverty. Transcripts from focus groups were coded according to the five constructs of the Campinha-Bacote model for cultural competence and further coded for recurring themes within these constructs. **Results:** Eleven participants across four allied health professions including nutrition, occupational therapy, nursing and pre-physical therapy participated in two focus groups. Researchers found all five constructs of the Campinha-Bacote model in analysis of focus group transcripts, with awareness and desire expressed more frequently and intensely. Participants stated the animated simulation increased their empathy for people who experience poverty and food insecurity and who need public assistance programs.

**Conclusion:** Researchers find that this online animated simulation was an effective tool to improve cultural competence of poverty for emerging healthcare professionals. Use of similar animations by educators of healthcare professionals may also change existing negative views towards those who rely on the Supplemental Nutrition Assistance Program benefits and reduce the barrier of stigma associated with the program.

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**Keywords:** cultural competence, online education, simulation, poverty, allied health professionals

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## INTRODUCTION

Poverty and food insecurity continue to be challenges to national and global health.<sup>1,2</sup> Both are recognized in international and national initiatives: the United Nations Sustainable Development Goals list the elimination of poverty and hunger as the top two goals, and decreasing food insecurity is a nutrition objective in the United States Healthy People 2020 initiative.<sup>1,2</sup> Yet even while there is enough food grown in the United States to provide adequate nutrition for everyone, a significant number of people experience hunger and food insecurity, buy inexpensive and unhealthy food because it is more affordable, and rely on food and nutrition assistance programs.<sup>3</sup> The United States Department of Agriculture (USDA) Economic Research Service estimated 12.3% of American households were food insecure in 2016 and 4.9% had very low food security, showing a slow rise over time since 2001.<sup>4</sup> Many people rely on the Supplemental Nutrition Assistance Program (SNAP), which provides food and nutrition benefits to families in need.<sup>5</sup> It serves more than 40 million Americans, making it an essential tool for addressing national poverty, nutrition, and food insecurity.<sup>5</sup> Food and nutrition services, like SNAP, provide opportunities for people who experience economic hardship to meet their nutritional needs. However, many people who are eligible do not take advantage of the social safety net because of various barriers, including the stigma of poverty and public assistance.<sup>6,7</sup> Older adults are particularly vulnerable to some of these barriers.<sup>8</sup> Cultural incompetence of healthcare professionals who connect people in need with services can reinforce stigma and act as a barrier to necessary social benefits for people who experience poverty and food insecurity. Developing effective educational tools to increase the cultural competence of healthcare professionals regarding poverty and food insecurity is critical to improving food security, health, and nutrition outcomes in the US.

### Cultural Competence, Poverty, and Health Professionals

Cultural competence is of primary concern in health care settings and is broadly defined as developing the capacity to understand and have compassion for the experience of others. The Office of Minority Health defines cultural competence as central to addressing health disparities and as “a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in cross-cultural situations...in racial, ethnic, religious or social groups...within the context of the cultural beliefs, behaviors, and needs presented by consumers and their communities.”<sup>9</sup> While there are various models, the model developed by Dr. Josepha Campinha-Bacote is well-established and focuses on cultural competence as a process and cycle.<sup>10</sup> In the 1970s, Campinha-Bacote integrated concepts of anthropology with nursing and healthcare practice in developing her model, and in contemporary settings, it is used in interdisciplinary efforts to promote culturally competent healthcare delivery. In her model, Campinha-Bacote stresses the emerging nature of becoming culturally competent, targets health disparities, and offers a means to train practitioners in best methods in cross-cultural situations that improve health outcomes focused on the patient.<sup>11</sup> The cycle of cultural competence is entered at any point, and according to Campinha-Bacote, her model includes five constructs: awareness (awareness of one’s own culture, biases, and assumptions); knowledge (process of seeking education about diverse cultures, beliefs, and practices); encounter (direct engagement with people from diverse cultures); skill (the ability to collect pertinent information in cross-cultural settings and offer interventions); and desire (motivation to be involved with the process of cultural competence). These constructs are interdependent and must all be experienced to fully participate in the process.<sup>12</sup>

In healthcare settings, training in cultural competence is increasingly stressed to improve professional skills and health outcomes.<sup>13,14</sup> For instance, Goodman et al, in a qualitative study of nursing staff in Iraq, identified the growing need for cultural competence for healthcare professionals in international settings, and that awareness and knowledge of customs, beliefs, and practices, including those surrounding food, were a gap that needed to be filled to provide the best care.<sup>13</sup> In a mixed methods study of Canadian dietetics students, Hack et al found students identified their own lack of multicultural knowledge, and that students who took a course in cultural foods were more likely to have higher scores in knowledge of other cultures and higher overall cultural competence scores.<sup>14</sup> Students also stated that they wanted more information on cross-cultural health beliefs and foodways, and that more experience and exposure were beneficial.<sup>14</sup> Individuals who receive training in cultural competence have the opportunity to develop empathy and practical understanding of the barriers and challenges faced by various groups in meeting nutrition and health goals.

Medical and educational programs that include cultural competence are effective. For one study of short term medical mission groups, Steinke et al found that training raised levels of cultural competence, and that this was considered essential to participants.<sup>15</sup> Pharmacy students who engaged in a shopping experience to simulate resources and tradeoffs of having diabetes, obesity, and low income increased their awareness of the challenges of healthy eating and lifestyle changes with limited finances.<sup>16</sup> For people with chronic disease conditions like diabetes, where self-management is important and good communication about diet and outcomes is needed, increasing cultural competence of health professionals can equate to better outcomes and more effective care.<sup>17</sup> In a study of African-American adults with type 2 diabetes, Anderson-Loftin et al found that classes and support group interventions that tended to ethnic beliefs, norms, and food preferences were more successful than control groups in changing dietary habits and lowering body mass index.<sup>17</sup> Lie et al used a systematic review to assess the effects of training in cultural competence on patient outcomes and found potentially beneficial effects, although more research is needed.<sup>18</sup> In reviews of

research addressing cultural competence, Hispanic/Latino communities, and heart failure, researchers found that attitudes of healthcare providers could act as a barrier to better outcomes: lack of knowledge in healthcare providers about the role of the family; lower acculturation and language barriers; and economic barriers and lack of access to healthcare were all factors that contributed to poor health management.<sup>19</sup> Increasing cultural competence can potentially improve outcomes and simultaneously address health disparities associated with these barriers.<sup>19</sup>

Cultural competence includes awareness of experiences of social groups, and cultural norms about people, including people who experience poverty.<sup>9</sup> Simulations to increase cultural competence of poverty are incorporated in professional training and can be successful.<sup>21-23</sup> For one qualitative study of nursing students in a face-to-face poverty simulation, Yang et al found students increased their empathy of the experience of poverty, improved their understanding of barriers to healthcare, and transformed their attitudes and practices.<sup>20</sup> In a quantitative study of social work students participating in a face-to-face poverty simulation, Vandsburger et al found it changed their understanding of the daily difficulties of living in poverty, improved their capacity to analyze lives in context, and provoked students to continue to learn about poverty.<sup>21</sup> For another study of nursing students, Noone et al found a significant change in attitudes toward poverty after exposure to poverty simulation, with students more likely to have a positive and sensitive attitude toward working with impoverished populations.<sup>22</sup> Professional organizations are beginning to address the issue systematically. In nutrition, the Academy of Nutrition and Dietetics proposed a new food bank and food security supervised practice concentration to train future registered dietitians and nutritionists. This program also facilitated the development of skills necessary to translate students' knowledge to more practical information for food bank clients.<sup>23</sup>

For healthcare professionals, knowledge of food insecurity and food assistance programs is important to cultural competence about poverty. The USDA Economic Research Services defines food insecurity as "a house-hold level economic and social condition of limited or uncertain access to adequate food."<sup>24</sup> Some groups are at greater risk for food insecurity which contributes to health disparities, and researchers document the profound impact of poverty and food insecurity on life expectancy and chronic disease.<sup>25</sup> While the Center for Disease Control and Prevention estimates social determinants of health as contributing to over half of the origins of health outcomes, it is common for US citizens and healthcare students to perceive health issues as the deficit of the individual, rather than linked to socially structured disparity.<sup>21,26</sup>

One of the primary programs to address food insecurity in the US is SNAP, formerly known as food stamps. A majority of people experiencing economic hardship are assisted by SNAP benefits, but many eligible households do not participate in the program. Researchers demonstrate that there are barriers to applying and participating in SNAP often linked to stigma and quality of services. Applicants must fall under a certain set of criteria based on household size and gross and net monthly income.<sup>27-31</sup> The elderly or disabled are also eligible to apply. Researchers for the USDA Quality Control reported in 2016 that despite increases in overall SNAP participation of low income Americans, the participation rate among low income older adults remains low.<sup>27</sup> Older adults over the age of sixty-five constitute a proportionately smaller percentage of food insecure adults in the US; however, fewer older adults who are eligible apply for the public assistance program. This can be serious as older adults are at greater risk for adverse health outcomes linked to poor nutrition.<sup>28</sup> Researchers found that although older adults surveyed understood the beneficial resources provided by SNAP, the most common reason for nonparticipation was negative treatment from program staff.<sup>29</sup> Additional reasons included inconsistency in information provided and an intensive and confusing application process.<sup>29</sup> In another study, researchers found that the main barriers to SNAP among older adults most commonly included poor quality of service from SNAP staff, followed by lack of information, and low benefits, as well as varying seasonal income.<sup>30</sup> Results are consistent across other vulnerable populations and other researchers find that good relationships with caseworkers and developing trust can make a difference in maintaining much needed nutrition assistance.<sup>31</sup>

Recurring barriers to public assistance programs that researchers identify include stigma, poor-quality service, and lack of information.<sup>27-31</sup> These barriers are modifiable factors successfully addressed through staff and healthcare provider training, reaching out to low-income household to increase awareness, developing trust, and educating communities about program requirements and benefits.<sup>31,32</sup> However, training program staff or health professionals to assist eligible households in applying for SNAP benefits and addressing stigma and quality of service may be difficult if health professionals do not comprehend the experience of poverty and food insecurity. Researchers studying healthcare students and professionals, including studies of nutrition professionals working with food banks, find a lack of skills and understanding necessary for working with food insecure populations and people living in poverty.<sup>16, 21,22,33</sup> Healthcare professionals lacking cultural competence of poverty can perpetuate stigma and poor-quality service that act as barriers to relief of food insecurity. Promoting cultural competence of the experience of poverty and public assistance has the potential to decrease some of these barriers, including stigma.

### Online Simulation and Education of Health Professionals

Simulations are a viable contemporary method to deliver interactive and experiential health education that promotes changes in behavior for patients and provides training for emerging healthcare professionals. Simulations exist in multiple forms, from online animated story simulations to virtual reality simulations or in-person role playing.<sup>20</sup> For example, in patient education, Baylor College of Medicine has a second generation interactive computer-based simulation to help provide alternatives for family education about health and eating patterns called, "Family Eats 2."<sup>34</sup> In higher education, online simulation was also adopted to increase interview and screening skills of allied healthcare workers and emerging social workers in the School of Social Work at New Mexico State University.<sup>35</sup> In nursing, simulation techniques such as role playing are used to increase competence in ways that are meaningful and interactive.<sup>20</sup> However, there is limited information on simulations and higher educational material for emerging health professionals regarding cultural competence of food insecurity, poverty, and barriers to public assistance programs like SNAP.

The purpose of this pilot study was to explore the impact of an online animated simulation on cultural competence of emerging health professionals regarding food insecurity, poverty, and SNAP. More specifically, researchers used the five constructs of the Campinha-Bacote model to assess how an online animated simulation story of food insecurity, poverty, and SNAP is experienced by emerging health professionals. Because older adults are one of the most fragile vulnerable groups, this educational pilot adopted a story and case study of an older adult and their experience of poverty, SNAP, and public assistance to promote cultural competence.

### METHODS

Focus groups were selected as a cost-effective method that provides rich qualitative information appropriate to investigate the educational tool. An online animated simulation story and case study of the experience of an older adult with food insecurity was designed by researchers using a combination of GoAnimate and Articulate Storyline software. The process of constructing the script, characters, and animation is described in a forthcoming paper. The online animated simulation lasted approximately twenty to thirty-five minutes, depending on the viewing choices of each participant, and was divided into five chapters. Each chapter included themes identified from the literature as barriers to gaining needed assistance by applicants; barriers such as stigma, shame, and tradeoffs. The story involved the character Robert, an older adult male and veteran, who has chronic health conditions and is food insecure. The character goes through the process of deciding whether or not to apply for public assistance. Viewers of the module follow along as he deliberates and experiences barriers and stigma. Several choices are made available during the animation to make the educational tool more interactive. The separate choice points lead to differing outcomes. Student participants were encouraged to explore all the choices, and along with the narrative, statistics were provided about SNAP and food insecurity in older adults relevant to the outcomes.

A semi-structured questionnaire with ten open-ended questions about the educational tool was developed for the focus groups. With focus group questions, researchers aimed to extract information regarding the SNAP simulation experience in the following areas: use of the online tool (e.g.: ease of use, any confusing or difficult parts, what might improve the experience, did they enjoy using it); quality of the script and animation for the simulation (e.g.: did you like the characters, understand the difficulty of their situation, was there anything that bothered you about the story); and transformative value of the experience relative to cultural competence of poverty (e.g.: how did the experience change your views of poverty, hunger, public assistance programs and people on them). Additionally, participants answered five anonymous survey questions after reviewing the educational tool to compare to results from focus groups. The survey questions were distributed using Qualtrics software and used a five-point Likert scale. Questions asked participants about: whether the online educational tool increased their awareness or changed their thinking of the experience of poverty and applying for SNAP; whether it increased awareness of barriers and stigma; whether it changed their thinking on people who receive SNAP; and whether it made them think differently about how they judge and treat people who use public assistance programs like SNAP.

Researchers for this pilot study targeted recruitment of ten to fifteen undergraduate students in the allied health field to test cultural competence and the online animation using a convenience sample from a mid-sized state university in the Mid-Atlantic region. An Institutional Review Board approval for the pilot was obtained and recruitment protocol included flyers posted in multiple locations. In addition, an email was sent to students in several allied health science departments inviting them to participate. Student participants were offered the incentive of a \$50 gift certificate to the campus bookstore and a meal provided during the focus group. Students who responded to flyers and emails were screened for age (over 18) and major (allied health sciences). All student participants were provided with written and oral review of the consent form, a description of the nature of the study and their involvement, and the voluntary nature of the project and option to withdraw at any time, after which signatures were obtained by researchers. Participants then chose from two dates for the focus group discussion. A uniform resource locator (URL) was sent to all participants to view the online animation. After participants completed the animation, another URL was sent to complete the

anonymous online survey questions. The animation viewing occurred one week before focus groups, and two focus groups were scheduled. Two researchers attended the focus groups and one researcher moderated both groups using best practices for conducting focus groups.<sup>36</sup> Probing was used to extract information about participant responses that needed clarity or explanations. Participants were debriefed after the focus group with a short handout providing them with more information and support about food insecurity and SNAP. Audio-recordings of focus group discussions were transcribed. To retain confidentiality, transcripts were recorded without names and reported only as “participant(s) said.”

Researchers analyzed transcriptions of focus groups using categorization and thematic coding in terms of the quality of the simulation and case study and transformative value of the experience. First, researchers used deductive and a priori content analysis of text transcripts, to explore participant experience in using the online tool coding according to their fit within the five constructs of the Campinha-Bacote model: awareness, knowledge, skill, encounter, and desire. Awareness engages reflection on the values, norms, biases, and assumptions of both healthcare providers and patients.<sup>12</sup> Knowledge involves gaining educational foundations and in healthcare (Campinha-Bacote refers to an integration of health beliefs and values, social demographics and disease, and the effectiveness of treatment). Skill in cultural competence involves the ability to translate knowledge into effective collection of information for assessment and intervention.<sup>12</sup> The construct of encounter is the process of engaging and interacting with people from diverse backgrounds.<sup>12</sup> Desire is the construct whereby the healthcare professional is motivated to engage in the process of cultural competence involving awareness, knowledge, skill, and encounter, which reflects caring.<sup>12</sup> Additionally, inductive and grounded methods of analysis were used by researchers to identify sub-themes of the five constructs by exploring for frequency, extensiveness, and intensity of responses to identify the sub-themes.<sup>37</sup> Analysis for sub-themes was complete when saturation was achieved and no further themes emerged across or within the two focus groups.

Researchers used multiple methods to establish credibility of data and integrity of methods. To establish truth value, researchers used triangulation of sources that involved two separate focus groups with participants from differing backgrounds to compare varying viewpoints. Findings across the two groups were compared. Additionally, researchers used member check to establish that analysis accurately represented participant’s viewpoints. Using analyst triangulation, two researchers participated in independent reflection on the meaning of the coded themes relative to the focus groups. Finally, an electronic survey of five questions was distributed after the simulation and before the focus group to compare to results from text analysis using methods triangulation.<sup>38</sup>

## RESULTS

Out of twenty-eight responses to recruitment, a total of eleven students were screened and completed participation in the study. Students from four allied health professions were represented including nutrition, occupational therapy, nursing and pre-physical therapy, and four of the eleven participants were males. Two focus groups of participants from diverse healthcare majors were scheduled for separate sessions on different days during the week of April 10, 2017. After text analysis was complete, researchers’ reflection of the themes in context to the focus groups showed overall good agreement. Differences were noted by researchers in the interpretation of the constructs of knowledge versus skill and desire versus knowledge, and were determined to be related to the overlap between constructs of the Campinha-Bacote model. This resulted in further separating text into respective constructs (see discussion section). Member check showed full agreement of the themes in the analysis. Researchers found that collectively, both focus groups expressed all the constructs of cultural competence in the Campinha-Bacote model, and analysis of the survey questions reflected consistency within and between focus groups.

### Awareness

For this pilot study, awareness consisted of cultural norms about poverty and assumptions about people who received public assistance such as SNAP. Participants established that the story and character helped to explain the experience of SNAP and poverty, and that the length of the animation, storyline, and context were important to the process of developing understanding and empathy for the experience of poverty and public assistance.

Participants repeatedly described how important the story was to building awareness of their own assumptions and understanding the context of people who experience poverty and need public assistance. Seven participants stated that their favorite part of the simulation was the storyline and that they thought stories were valuable to increasing empathy and encouraging reflection. The sum of voices and visual animations, along with the story and text available for reading during the simulation, provided an experience that added to, and increased, their ability to empathize with the character. While some complained that the story was lengthy and required focused listening, they also stated how important the length was to increasing understanding:

*“...the whole point was to...understand how the guy was feeling and his struggles with SNAP...and [the length] is necessary. I think that description—his thought process, was necessary...”*

Participants reflected on their growing awareness of how shame or stigma might impact people who apply for public assistance and imagined how it felt for the character, Robert:

*"I felt really bad for him at some points. I felt like he really needed help, but he was too proud to ask for it..."*

More than one participant expressed greater understanding of the challenges and experience of poverty and aging:

*"...he worked his whole life to provide for his family and then when everyone left him he was kind of abandoned..."*

Participants expressed transformative awareness of cultural norms about poverty and the stigma and shame surrounding the use of public assistance in many statements. When hearing how important benefits like SNAP could be to the health of people in need, one participant considered the safety net origins of the program and said,

*"...the part where [a character in the simulation] mentions that he paid in his tax dollars for his food stamps...so it's not like the stigma that you are taking other people's money—like he's actually paying towards it. So it's...not as negative as I originally thought it is, personally."*

Participants who had prior personal knowledge of SNAP noted the differences in experiences, in that some people see the program as a benefit and do not experience shame and stigma surrounding use of social assistance. While the stigma of using SNAP had been encountered by these participants before, it was still puzzling to them. Participants brought in the politics of shame behind this and the normative belief that people using public assistance were lazy and reflected on this, stating,

*"I feel like that opinion comes from people that aren't or don't have to worry about that stuff because their situation is different. And then there are people that work like sixteen hours a day and still have to be on food stamps. They're not lazy—that is just their situation, it's tough...they need help..."*

Another participant reflected on the approach that engaged individual deficits as an explanation, stating,

*"I feel like the majority of people who have that opinion are probably uneducated on the topic."*

Participants critically reflected on cultural norms and societal understandings of the experience of poverty and public assistance and what it means.

### **Knowledge and Skill**

Both knowledge and skill are important constructs in the Campinha-Bacote model for cultural competence. For the purposes of this pilot study, knowledge translated to the demographics of poverty and use of SNAP and its effectiveness in alleviating food insecurity, and skill translated to acquiring data regarding poverty and SNAP that could inform intervention. Knowledge and skill about various potential outcomes, origins, and demographics linked to poverty and SNAP, understanding the complexity of the process of applying for SNAP, and how each of these could inform interventions were recurring themes for participants.

Participant comments showed that embedding the experience of the character in statistics about populations and adding choice points, where the story could diverge based upon a decision, were important aspects of the animated simulation. Information about the connection between financial outcomes and a devastating medical event, malnutrition and adverse health and hospitalization outcomes, and statistics about bad experiences with services and barriers were provided by researchers in the animation. Participants found an anchor for empathy about the experience of the character in statistics of how common some experiences were for older adults with low incomes. According to one participant,

*"I didn't know that someone who worked their whole life could have financial trouble later...because you don't really know what hits you medically..."*

Another stated,

*"...you hear about these programs...but you never really think about the whole process that people have to go through to actually receive it. It's hard on them, hard on a lot of families but I never really think about that. I [now think] SNAP really helps..."*

One participant pointed out how surprising the actual reimbursement was and how much it could vary, and wondered how this knowledge would impact patients they may work with in the future. Here, researchers noted that the overlap between knowledge and skill became clear as participants grappled with considering how their new knowledge about SNAP would affect the people they work with, and how they might use it to help. An overlap with desire also became apparent when one participant stated that even more statistics could be added to the module and could then be shared with clients and patients, and how that would translate to better care. This participant offered a version of “the big picture”:

*[patients] would be more likely to [apply for SNAP] because [they will be less likely] to get sick or injured [if they are better nourished]...I would tell them this will save you money in the long run because you would be able to eat, you'll have better health because of it and to be honest, you won't be here (in the hospital)...That is what we want. We want good health outcomes in the end.*

Knowledge and skill acquired by participants from the animated simulation provoked participants to consider how the information fit into their current practices and understandings, and how they might use this new information as a skill for better health outcomes and interventions.

### **Encounter**

The construct of encounter is essential to cultural competence. While this is most valuable when it is direct interaction, simulation can offer an “in-between” space for individuals to engage with diverse sets of experiences and gain competence. Educators use simulations in a variety of forms to prepare professionals for work with varying populations to increase skill and knowledge while diminishing fear of causing harm to real patients.<sup>20</sup> For this pilot study, participants took on the role of the character, Robert, as he experienced shame, stigma, and difficulties applying for SNAP. The virtual simulation allowed participants to encounter new experiences in a way that felt real to them.

Participant's comments showed that the simulated story provided another dimension of learning, an encounter that was closer to real life than much of classroom learning. The story was important to simulating the experience of poverty, food insecurity, and needing public assistance in a way that was “relatable,” according to participants. With the animated story, participants engaged with the experience where “watching it made it seem like it was a real thing” and made it more like “a real situation that someone would be in.” One student described how learning about nutrition assistance programs in class was often one dimensional and stated,

*“...when you are sitting in class and learning, these [program facts] are the things that are available—you don't really think about what the people who have to apply feel like...”*

The added dimension of the human experience simulated through the animated story increased understanding in a way similar to experience, according to another participant,

*“...the story was more of a real-life simulation than just giving me numbers [statistics]...those I can look up...not like scenarios that some people [who] probably don't have much experience [working] with SNAP would deal with...”*

Some participants even reflected on their own encounters in the past with people in the same situation as Robert, and reinterpreted the meaning of what they experienced, developing new understanding of the encounter.

### **Desire**

Desire is central to continually partake in the process of cultural competence, and it is the construct that draws on the other four constructs. For this pilot, researchers found desire was expressed in motivation to know more about how people in need could use SNAP, to know more about general statistics about the program, and to understand more of the everyday challenges of using SNAP and for those living with low incomes.

When participants learned about some of the statistics regarding poverty, food insecurity, and SNAP and how it linked to health in older adults, five participants made statements about how this connected to other populations and wanted to know more. For instance, when the tradeoffs of budgeting for other monthly bills was presented at the expense of eating enough, one participant stated that it would help to hear more about single moms, colleges students, and other age groups with food insecurity in the same situation. More than one participant wanted more stories, and one stated that

*“stories about different cultures or different people who have problems facing poverty...would be cool.”*

Others thought knowing about diverse experiences of poverty was an ongoing and important part of their work, being “well-rounded so you can take care of everyone most impacted, as much as possible.” One participant discussed his/her desire to know more in the context of their career:

*“As a future dietitian...I can’t just dance around through life not thinking about this. I have never personally had to go on food stamps or any kind of assistance, but I know that my patients, a lot of them will be [using public assistance] and I will need to understand the process of how it took them to get there and the requirements, what their poverty level actually is, and just understanding that I cannot make recommendations if they are not attainable...”*

Researchers found that the simulation made participants more curious about the SNAP program, poverty, and health disparities, and they asked for more background facts about these. One participant stated,

*“It makes me want to find out more information...I feel three to four times as likely to recommend SNAP to future patients whereas I probably wouldn’t before.”*

Participants assessed the animated simulation experience as positive, asserting that it provoked them to want to know more and to increase their skills.

Finally, five survey questions about the educational tool and cultural competence of poverty were analyzed. All participants agreed (six) or strongly agreed (five) that the educational tool helped increase their awareness of the experience of poverty and using SNAP. All the participants agreed (four) or strongly agreed (seven) that the educational tool increased their understanding of barriers and shame surrounding use of the program. Of the eleven participants, many agreed (five) or strongly agreed (four) that the educational tool made them think differently about the role of healthcare professionals in assisting people who experience poverty or hunger. One participant disagreed, and another did not respond to this question. Ten of the participants agreed or strongly agreed that the online tool made them think differently about people who receive SNAP; one disagreed. All the participants agreed (six) or strongly agreed (five) that the educational tool made them think differently about how they judge and treat people who receive public assistance like SNAP. Overall, participants viewed the educational tool as effective in fostering their own cultural competence of poverty and the experience of using public assistance programs like SNAP.

## DISCUSSION

The purpose of this pilot study was to explore the use of an online animation educational tool in promoting cultural competence about poverty, food insecurity, and use of public assistance programs like SNAP. Similar to other studies of online simulation, researchers found that simulation was an effective educational tool, in this case in promoting cultural competence of poverty in emerging health professionals.<sup>20,35</sup> In this pilot study, participants enjoyed using the educational tool and found the story and use of audio-visuals to be helpful in promoting a sense of a “real” and lived experience that simulated an encounter for them and promoted empathy. Using choice points, or paths of divergent outcomes, participants increased their understandings of how health is influenced by contexts of decisions and that by altering those contexts or decisions, outcomes can shift. Embedding the particular story of one character in population statistics allowed participants to understand the prevalence of the context linked to outcomes. Similar to other training in cultural competence and poverty simulation, researchers found the use of the story and case study itself made participants more curious and willing to find out more about poverty, food insecurity, and public assistance.<sup>20-23</sup>

Participants observed that for people who do not experience poverty, it is hard to imagine what the choices are when faced with very limited resources. Researchers for this pilot study argue that this gap drives the need for greater education on the experience of poverty, its prevalence, and cultural norms that surround it and perpetuate many unnecessary challenges for people who are impoverished.<sup>20</sup> By promoting cultural competence through models that improve interactions, educators and health professionals can support better health outcomes while addressing health disparities. There are multiple levels of understanding that emerging healthcare professionals need to achieve cultural competence in the experience of poverty and food insecurity. In this pilot study, researchers found all five constructs of the Campinha-Bacote model of cultural competence represented in both focus groups. Although researchers initially thought that awareness and knowledge would be more highly represented constructs, surprisingly, the construct of desire was highly represented along with awareness. Researchers occasionally encountered difficulty in parsing out where knowledge, skill, and desire were represented in some parts of the texts. For instance, one participant stated,

*“I know that [a lot of] my patients will be, and I need to understand the process of how [they got] there...what their poverty level is...I can’t just make recommendations if they are not attainable.”*

This statement represents a mix of constructs: knowledge (the understanding of the prevalence of food insecurity and need for public assistance); skill (understanding that questions need to be asked regarding the level of poverty to construct interventions that are attainable); and desire (the want to know how a person becomes impoverished in order to help—a desire to know more about the experience). It is noted that the Campinha-Bacote model is depicted with all constructs overlapping each other.<sup>11,12</sup> This speaks to the integrated nature of this cultural competence model, where desire is the construct that overlaps the most with other constructs. This overlap is an essential part of the process. In this pilot study, it also reflected how the educational tool acted to promote the overall process and increase cultural competence of participants. This was apparent in statements when participants critically reflected on cultural norms and societal understandings of the experience of poverty and public assistance, what it meant to them, and how this was transformed during the animated simulation. Participants even began re-framing the cultural norm regarding individual deficits, instead summarizing the negative cultural norms and attitudes towards poverty as a deficit in society, and an expression of a lack of education in society.

Although focus groups have advantages in exploring how people think, there are also limitations to the method that include generalizability of sample, self-selection of participants, and group dynamics.<sup>36-38</sup> Participants were representative of students and emerging professionals from a state school in a suburban setting; however, results for the focus group might be different from a private school or an urban setting. Additionally, participants volunteered and self-selected for this pilot project, and some may have been more interested in the topic of public assistance programs and poverty. Results from a focus group of people disinterested in this topic might have differed. Finally, although most participants appeared to meet for the first time and better practices for focus groups was tended to, there were some participants who were more vocal than others, and some simply agreed with what others stated. Group dynamics may have influenced the data collected.

Both participants and researchers found the animated simulation could be improved to increase learning outcomes. For instance, participants felt more facts about the program and more statistics on health disparities would help to embed the story in population prevalence. Researchers and participants also realized that more could be done in the module to offer “best practices” and build skill in working with people who experience poverty. Constructing the module with animated simulation of exemplars and scenarios of good skill alongside poor skill with associated outcomes might promote better practices. Additionally, including interactive questions to the story that reflect constructs of cultural competence, either in the module itself or as a group exercise after, would reinforce learning. Finally, more than one participants could not contextualize information about income related to household need, and more training in the simulation to promote understanding in this area would also serve to promote culturally competent healthcare professionals regarding the constraints of poverty.

As an educational tool, researchers find online animated simulations meet growing needs for effective education for increasingly diverse communities.<sup>36</sup> In many fields, finding clinical and community settings for emerging health professionals to practice and learn can be challenging. Using online animated simulations in education offers another dimension to understanding the context of people who enter healthcare settings and need help.<sup>34</sup> It provides an “in-between” space to buffer concerns about harm in direct encounters and to bridge the gap to develop better cultural competence in working with diverse people.<sup>14</sup> As an educational tool, online animated simulations of case studies or stories are an accessible means to build more effective healthcare practitioners with good potential

## CONCLUSION

Online animated simulations are a promising educational tool to nurture understanding and cultural competence. Researchers for this pilot study tested an online animated simulation to promote cultural competence about poverty, food insecurity, and the use of public assistance programs and found the tool to be successful in promoting the five constructs of Campinha-Bacote’s model of cultural competence. The social determinants of health and social structure heavily influence health outcomes, and poverty is linked to most morbidity and mortality statistics.<sup>39</sup> There is a need for more educational tools to increase understanding about how poverty and food insecurity are linked to a higher burden of disease.<sup>39</sup> That need is especially critical in educational programs for allied health science professionals who regularly work with people from a multitude of socioeconomic statuses, ethnicities, and identities. But there is also a need for more research to assess the effectiveness of online simulations in promoting various forms of cultural competence in healthcare professionals. The use of animations in higher education, like the one tested in this study, may change existing negative views or attitudes towards those who rely on SNAP benefits and reduce the barrier of stigma associated with the program. This in turn may improve access to social benefits for those in need. Expanding animated online simulations to cover a variety of identities and circumstances using stories or case studies along with relevant statistics to embed the story in prevalence would increase training in cultural competence for emerging healthcare professionals. It could also provide accessible training for service-providers and agencies to sensitively reach out and promote public assistance for eligible people who would benefit with better health outcomes.

## REFERENCES

1. *Sustainable Development Goals: 17 Goals to Transform Our World*. United Nations Sustainable Development Goals. cited November 15, 2017. Available from: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>.
2. *Nutrition and Weight Status: Healthy People 2020*. Office of Disease Prevention and Health Promotion. 2017. cited November 30, 2017. Available from: <https://www.healthypeople.gov/2020/topics-objectives/topic/nutrition-and-weight-status/objectives>.
3. Friedman G. Food Insecurity in Affluent America. *Dollars & Sense*. 2015;41-2.
4. Coleman-Jensen A, Rabbitt M, Gregory C, Singh A. *Household Food Security in the United States in 2016: Economic Research Services Report Number 237*. USDA, Economic Research Services. 2017. cited November 15, 2017. Available from: <https://www.ers.usda.gov/webdocs/publications/84973/err-237.pdf?v=42979>.
5. *Supplemental Nutrition Assistance Program (SNAP)*. 2016. cited January 15, 2017. Available from: <http://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap>.
6. Kay L, Lee E, Chen Y. Barriers to food stamps in New York State: A perspective from the field. *J Poverty*. 2013;17(1):13-28.
7. Kasperkevis J. Food stamps: Why are recipients haunted by stigmas and misconceptions? *Guardian*. April 7, 2014. cited January 15, 2017. Available from: <https://www.theguardian.com/money/2014/apr/17/food-stamps-snap-coordinators-challenges>
8. Herd P. How administrative burdens are preventing access to critical income supports for older adults: The case of the Supplemental Nutrition Assistance Program. *Public Policy & Aging Rep*. 2015;25(2):52-5.
9. *What is Cultural Competence?* United States Department of Health and Human Services: The Office of Minority Health. cited November 15, 2017. Available from: [http://www.cdc.gov/nchhstp/socialdeterminants/docs/what\\_is\\_cultural\\_competency.pdf](http://www.cdc.gov/nchhstp/socialdeterminants/docs/what_is_cultural_competency.pdf).
10. Perez M, Luquis R, eds. *Cultural Competence in Health Education and Health Promotion*. San Francisco, CA: Jossey-Bass: A Wiley Brand; 2014.
11. Campinha-Bacote J. Coming to know cultural competence: An evolutionary process. *Int J for Human Caring*. 2011;15(3):42-8.
12. Campinha-Bacote J. The process of cultural competence in the delivery of healthcare services: A model for care. *J Transcult Nurs*. 2002;13(3):181-4. [PMID:12113146]
13. Goodman P, Edge B, Agazio J, Prue-Owens K. Cultural awareness: Nursing care and Iraqi patients. *J Transcult Nurs*. 2015;26(4):395-401.[PMID:24810515]
14. Hack R, Hekmat S, Ahmed L. Examining the cultural competence of third-and fourth-year nutrition students: A pilot study. *Can J Diet Pract Res*. 2015;76(4):178-84.[PMID:26280274]
15. Steinke M, Riner M, Shieh C. The impact of cultural competence education on short-term medical mission groups: A pilot study. *J Transcult Nurs*. 2015;26(4):428-35.[PMID:24855133]
16. Trujillo J, Hardy Y. A nutrition journal and diabetes shopping experience to improve pharmacy students' empathy and cultural competence. *Am J Pharm Educ*. 2009;73(2):1-9.[PMID:19513175]
17. Anderson-Loftin W, Barnett S, Bunn P, Sullivan P, Hussey J, Tavakoli A. Soul Food Light: Culturally competent diabetes education. *Diabetes Educator*. 2005;31(4):555-63.[PMID:16100331]
18. Lie D, Lee-Rey E, Gomez A, Berkneyi S, Braddock C. Does cultural competency training in health professionals improve patient outcomes? A systematic review and proposed algorithm for future research? *J Gen Intern Med*. 2010;26(3):317-25.[PMID:20953728]
19. Melton KD, Foli KJ, Yehle KS, Griggs RR. Heart failure in Hispanic Americans: Improving cultural awareness. *J Nurse Practitioners*. 2015;11(2):207-13.
20. Yang K, Ratliff-Woomer G, Agbemenu K, Williams L. Relate better and judge less: Poverty simulation promoting culturally competent care in community health nursing. *Nurse Educ Pract*. 2014;14:680-5.[PMID:25262065]
21. Vandsburger E, Duncan-Daston R, Akerson E, Dillon T. The effects of poverty simulation, an experiential learning modality, on students' understanding of life in poverty. *J Teach Soc Work*. 2010;30:300-16.
22. Noone J, Sideras S, Gubrud-Howe P, Voss H, Mathews L. Influence of poverty simulation on nursing student attitudes toward poverty. *J Nurs Educ*. 2012;51(11):617-22.[PMID:22978272]
23. Handu D, Medrow L, Brown K. Preparing Future Registered Dietitian Nutritionists for Working with Populations with Food Insecurity: A New Food Insecurity/Food Banking Supervised Practice Concentrator Piloted with Dietetic Interns. *J Acad Nutr Diet*. 2016;116(7):1193-8.[PMID:26997550]
24. *Definitions of Food Security*. USDA, Economic Research Services. October 4, 2015. cited November 1, 2017. Available from: <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx>.

25. Sligman H, Laraia B, Kushel M. Food insecurity is associated with chronic disease among low-income NHANES participants. *J Nutr*. 2010;140:304-10.[PMID:20032485]
26. *NCHHSTP Social Determinants of Health*. Center for Disease Control and Prevention. March 10, 2014. cited November 1, 2017. Available from: <https://www.cdc.gov/nchhstp/socialdeterminants/faq.html>.
27. *Supplemental Nutrition Assistance Program (SNAP)*. Food and Nutrition Service: USDA. October 10, 2016. cited November 1, 2017. Available from: <https://www.fns.us>.
28. *Seniors & SNAP: Best Practices Handbook*. National Council on Aging. October 10, 2016. cited November 1, 2107. Available from: <https://www.ncoa.org/resources/seniors-snap-best-practices-handbook/>.
29. *SNAP Access Barriers Faced by Low-income 50-59 Year Olds*. American Association for Retired Persons Foundatoin. 2013. cited January 15, 2017. Available from: [http://www.aarp.org/content/dam/aarp/aarp\\_foundation/2013pdfs/SNAP\\_White\\_Paper\\_Mar\\_2013.pdf](http://www.aarp.org/content/dam/aarp/aarp_foundation/2013pdfs/SNAP_White_Paper_Mar_2013.pdf).
30. Lopez-Landin H. *SNAP Access Barriers Faced by Low Income 50-59 Year Olds*. American Association for Retired Persons Foundation. April, 2013. cited January 15, 2016. Available from: [http://www.aarp.org/content/dam/aarp/aarp\\_foundation/2013-pdfs/SNAP\\_White\\_Paper\\_Mar\\_2013.pdf](http://www.aarp.org/content/dam/aarp/aarp_foundation/2013-pdfs/SNAP_White_Paper_Mar_2013.pdf).
31. Robbins S, Ettinger A, Keefe C, Riley A, Surkan P. Low-income urban mothers' experiences with the Supplemental Nutrition Assistance Program. *J Acad Nutr Diet*. 2017;117(10):1538-53.[PMID:28259745]
32. Silas J, Tretreault C. *Addressing Barriers to Online Applications: Can Public Enrollment Stations Increase Access to Health Coverage?* Consumers Union. November 2011. cited January 15, 2017. Available from: [http://www.consumersunion.org/pdf/Addressing\\_Barriers.pdf](http://www.consumersunion.org/pdf/Addressing_Barriers.pdf).
33. Feeding America. *Food Insecurity/Foodbanking Supervised Practice Concentration*. Healthy Food Bank Hub. 2014. cited January 15, 2017. Available from: <http://healthyfoodbankhub.feedingamerica.org/resource/food-insecurityfood-banking-supervised-practice-concentration/>.
34. *Health Games*. Archimage. 2016. cited February 15, 2017. Available from: <http://www.archimage.com/health-games.cfm>.
35. *SBI with Adolescents Online Simulation*. School of Social Work New Mexico State University. 2016. cited February 15, 2017. Available from: <https://socialwork.nmsu.edu/sbirt/sim/>.
36. Kreuger R. *Designing and Conducting Focus Group Interviews*. Eastern Illinois University. October, 2002. cited January 15, 2017. Available from: <http://www.eiu.edu/~ihec/Krueger-FocusGroupInterviews.pdfm>.
37. Stewart D, Shamdasani P. *Focus Groups: Theory and Practice*, Third Edition. Washington, DC: Sage; 2015.
38. Noble H, Smith J. Issues of validity and reliability in qualitative research. *Evid Base Nurs*. 2015;18(2):34-5.[PMID:25653237]
39. Muening P, Franks P, Haomiao J, Lubetkin E, Gold M. The income-associated burden of disease in the United States. *Soc Sci Med*. 2005;61(9):2018-26.[PMID:15913866]

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