Currents in Pharmacy Teaching and Learning 9 (2017) 903–910

Contents lists available at ScienceDirect

Currents in Pharmacy Teaching and Learning

journal homepage: www.elsevier.com/locate/cptl

Experiences in Teaching and Learning

Evaluation of two different poverty simulations with professional phase pharmacy students

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ARTICLE INFO

Keywords:
Poverty
CAPS
SPENT
UPPTS
Empathy

ABSTRACT

Background and purpose: Pharmacy students will interact with patients who struggle to receive the health care they need. Since attitudes can influence behavior, exposure to these struggles may positively improve patient care. This study evaluates a group of student responses to two different interventions approximately 9 months apart. The primary objectives of this study were to: (1) identify if SPENT, an online game, could alone improve students' attitudes towards those living in poverty, (2) determine if changes imparted by SPENT were retained for nine months, and (3) identify if CAPS, a live simulation, has an additional benefit.

Educational activity and setting: Student participants completed both the SPENT online game and the CAPS simulation. Students were asked to complete the Undergraduate Perceptions of Poverty Tracking Survey (UPPTS) before and after each simulation

Findings: Ninety-nine first year and second year professional phase pharmacy students completed both interventions and all surveys. The average pre-survey and post survey "scores" for the SPENT game were 133.52 and 135.54, a statistically significant improvement ($p = 0.046$). When comparing the SPENT post "score" and the pre-survey score of CAPS (136.45) there was no significant difference ($p = 0.423$). The average pre-survey and post survey "scores" for CAPS were 136.45 and 139.18, a statistically significant improvement ($p = 0.001$). An analysis of the overall change showed a statistically significant improvement of 5.6667 ($p < 0.001$).

Discussion: Both the online SPENT game and CAPS live simulation interventions had positive effects on the students' empathy towards people living in poverty.

Background and purpose

With 46.7 million people living below the federally defined poverty line,[1] pharmacy students will interact with patients who struggle to receive the health care they need. Since attitudes can greatly influence behavior,[2] exposure to the struggles faced by many patients may positively improve patient centered care. It is important to provide students an opportunity to develop empathy towards those living in poverty.

In 2008, Drs. Wear and Kuczewski[3] reported that healthcare students harbor biases, and these attitudes can be looked at as a "misunderstanding that can be turned around through systematic curricular interventions." While many factors impact an individual's biases, educators should look for traditional and non-traditional methods to make students aware of their own attitudes and personal biases.

Serious games focus on addressing meaningful, purposeful topics that impact our society compared to fictional games for entertainment. Serious gaming has been increasing in academic use. It promotes learning through online simulations or case scenarios

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http://dx.doi.org/10.1016/j.cptl.2017.05.018

to accompany classroom concepts.[4] Serious gaming provides students the chance to learn and engage in an interactive and enjoyable experience and can better prepare them for future experiences.[5]

Pharmacy educators are implementing these interventions to reinforce and enhance classroom concepts. The 2013–2014 Academic Affairs Committee of the American Association of Colleges of Pharmacy (AACP), recognized the importance of developing and promoting serious gaming for the future of pharmacy students. The committee focused on how serious gaming can have a positive impact on the education of pharmacy students, and they believed these games promote better health care leaders.[6] Two serious games related to living in poverty are SPENT and Community Action Poverty Simulation (CAPS). "SPENT" is the name given by the developer of the game; it is not an acronym.

SPENT is an online serious game which forces students to make difficult financial and personal decisions for a simulated month while operating on a $1000 income. Players have set pay-days and can obtain additional finances through loans, garage sales, and even donating plasma. Richey Smith et al.[7] have demonstrated that students' attitudes towards people in poverty improve after playing the game. More information about the game is provided in Ref. 7.

A live poverty simulation, the Community Action Poverty Simulation (CAPS) has also been used in educating health professions students. The CAPS was developed by the Missouri Association for Community Action to use role playing to expose participants to what life is like when one lives in poverty.[8–10]

A study published by Clark et al.,[10] showed significant improvements of attitudes in 15 of 21 items in the Attitudes Toward Poverty short form (ATP-SF) among pharmacy students after administration of CAPS. The three domains on the ATP-SF scale are stigma, structural and personal deficiency. This study showed significant improvement in the stigma and structural domains.[10] The stigma domain focuses on perceptions of patients in poverty. The structural domain pertains to the impact of society's structure on patients living in poverty. The personal deficiency domain suggests that individuals have personal issues such as poor values that contribute to their financial situation.

In a study by Aspden et al.,[11] 76 Australian pharmacy students showed a trend towards improved empathy to patients in poverty, as measure by changes in ATP-SF scores, although it was not statistically significant. Their findings specifically noticed a change in the structural domain but not the personal or stigma domains.

In a 2010 study, after a 161 college students played a video game focused on positive social interactions, there was a significant increase in empathy towards a stranger in need compared to the control group who had not previously played the game. This experience was done to contrast studies that suggest that violent games cause aggressive behaviors.[12] A 2012 study used the Jefferson Scale of Physician Empathy-Student Version (JSPE-S) to compare the empathy levels of first- and third-year professional pharmacy students. This study showed an increase in empathy towards patients as the students advanced in the curriculum, primarily due to more experience and time spent with patients.[13]

With the development of serious games, it may be possible to provide students with simulated experiences to augment real-life experiences they receive while working with patients. While Introductory Pharmacy Practice Experiences (IPPE) provide students exposure to pharmacy operations, they may not provide consistent patient interaction, especially with underserved populations. These simulations address the Social Determinants of Health: economic stability, education, social and community context, health and health care, and neighborhood and built environment by integrating different challenges into the exercise.[14] Or in the words from the CDC website, Social Determinants of Health are "conditions in the places where people live, learn, work and play."

The rationale of this study was to determine the impact of two different interventions on first and second year professional phase pharmacy students' empathy towards those living in poverty, in accordance with the most recent Accreditation Council for Pharmacy Education (ACPE) standards. These standards call for students to not only develop the skills needed to provide patient-centered care, but to also foster cultural sensitivity and self-awareness of internal biases and emotions.[15]

The primary objectives of this study were to: (1) identify if SPENT, an online game, could alone improve students' attitudes towards those living in poverty, (2) determine if changes imparted by SPENT were retained for nine months, and (3) identify if CAPS, a live simulation, has an additional benefit to improving students' attitudes towards those living in poverty.

Educational activity and setting

This is a quasi-experimental post hoc analysis of attitudes toward poverty scores collected to evaluate the use of these two learning tools. Because of this, there were no a priori assumptions about degree of change.

Participants

All first year professional phase students completed the first intervention, SPENT, in February 2014. Then, the same students completed the second intervention, CAPS, in November of 2014 during their second professional year. Both interventions were conducted at Butler University in Indianapolis, Indiana. This study has received "exempt" status from Butler University's Institutional Review Board.

Survey scale

Before undergoing each intervention, students completed a survey containing the Undergraduate Perceptions of Poverty Tracking Survey (UPPTS) as well as demographic questions. The 39 questions of the UPPTS were further categorized into six unique subscales. The UPPTS, designed and validated by Dr. Blair of Niagara University, asks students to rate their attitudes towards poverty, with each