Qualitative Analysis

Methods

All 3rd professional year SOP students enrolled in PHAR 4165: Special Populations 2015 - 2017 participated.

Data collected:
- Utilized the Kierma-Chen Empathy Scale (KCES) to assess empathy using a brief scale (pre- and post-exercise).
- Students ranked perceived (pre-) and actual (post-) difficulty of managing the regimen.
- Utilized several open-ended questions at the end of the exercise to assess difficulty with regimen, quality of life impact and empathy.
- Age, gender and class year were collected.
- Pre and post values of the 15-items from the Kierma-Chen Empathy Scale (KCES) were explored.
- Items 4, 9, 11, and 15 were reverse scored.
- Total valid cases, median, and 25th and 75th percentiles were calculated for each item.
- Wilcoxon signed rank test was used to compare pre and post responses.
- Post-hoc analysis performed of perceived difficulty of managing the regimen in relation to growth in empathy (as measured by KCES).

Qualitative analysis was performed on open-ended responses with regard to adherence, empathy & quality of life impact:
- 4 investigators characterized responses independent of one another.
- For responses where there was disagreement, consensus was attained by discussion.

Results

Quantitative Analysis

The majority of the participants (51.3%) fell in the 23-25 years of age category, and 59.2% were females.

No statistically significant differences in gender, age or KCES scores were found between participant groups based on year of data collection and no statistically significant differences were found in KCES from pre-to-post intervention when participants were compared either by gender or age.

Overall, participants significantly improved (p<0.001) in empathy scores from pre-to-post-intervention (mean [SD]: 82.3 [8.7] and 85.03 [8.4], respectively).

The effect size of such improvement was small (Cohen's d=0.36).

Individual analysis of the items showed statistically significant differences in all of them with the exception of items 7, 9 and 11.

Table

| Q15 | Q14 | Q13 | Q12 | Q11 | Q10 | Q9 | Q8 | Q7 | Q6 | Q5 | Q4 | Q3 | Q2 | Q1 | T1 | T2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.3 (1.5) | 3.2 (1.3) | 5.9 (0.8) | 6.3 (0.9) | 6.1 (0.9) | 5.5 (1.1) | 3.5 (1.7) | 6 (0.7) | 5 (1.3) | 3.2 (1.5) | 3.1 (1.6) | 2.9 (1.3) | 2.7 (1.3) | 2.4 (1.3) | 2.2 (1.3) | 1.17 (1.02, 1.32) |

Changes in anticipated difficulty of the regimen were perceived significantly more difficult after the simulation (p<0.001).

Changes in KCES were negatively correlated with empathy score at enrollment (rho=-0.43, p<0.01) (Fig. 1).

Overall, participants significantly improved (p<0.001) in empathy score from pre-to-post-intervention (mean [SD]: 82.3 [8.7] and 85.03 [8.4], respectively).

The effect size of such improvement was small (Cohen’s d=0.36).

Conclusions & Future Directions

The Jellybean Polypharmacy Simulation Exercise (JPSE) increased empathy both objectively and subjectively in 3rd year pharmacy students, making it a potential activity to address the “soft skills” required of ACPE Standards 3 and 4.

Students who perceived the regimen as “easy” before the exercise had larger improvements on the Kiersma-Chen Empathy Scale.

The JPSE was a sufficiently difficult polypharmacy regimen for students to manage, and the majority of students endorsed a negative impact on their quality of life.

Paternalistic comment themes require further investigation.

The JPSE has interdisciplinary potential, and may be integrated as an IPE activity in the future.

References

3. Accreditation Council for Pharmacy Education. Accreditation standards and key elements for the professional program in pharmacy leading to the doctor of pharmacy degree. Standards 2016.