INSTRUCTIONAL DESIGN AND ASSESSMENT

A Module on Death and Dying to Develop Empathy in Student Pharmacists

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Objective. To implement an integrated module on death and dying into a 15-week bioethics course and determine whether it increased student pharmacists' empathy.

Design. Students participated in a 5-week death and dying module that included presentation of the film *Wit*, an interactive lecture on hospice, and a lecture on the ethics of pain management.

Assessment. Fifty-six students completed the 30-item Balanced Emotional Empathy Scale (BEES) before and after completing the module and wrote a reflective essay. Students demonstrated an appreciation of patient-specific values in their essay. Quantitative data collected via BEES scores demonstrated significant improvement in measured empathy.

Conclusion. A 5-week instructional model on death and dying significantly increased student empathy.

Keywords: empathy, death, dying, end-of-life care

INTRODUCTION

Empathy in medicine has been described as the ability, through our understanding or consciousness, to vicariously share the experiences of another human being. It occurs when "I and you" becomes "I am you," or potentially "I might be you."¹ A difficulty in developing or enhancing empathy through pharmacy school education is that a majority of curricular time is spent on therapeutics and drug mechanisms, resulting in a focus on the pharmaceutical treatment of the disease, but not necessarily the person who has the disease. As pharmacy education continues to create specialties and expand residency training for pharmacists, a worry is that future pharmacists will be trained as clinically competent yet detached professionals who are not able to consistently render empathic care for their patients.

In 2006, the Accreditation Council for Pharmacy Education (ACPE) recognized that pharmacists must demonstrate empathy to deliver patient-centered care. The Accreditation Standards and Guidelines for the Professional Program in Pharmacy leading to the doctor of pharmacy degree identify empathy as a desirable quality that is to be taken into account in the admissions process, and that empathy, as a component of professional communications, is an essential element for the development of pharmacists.² The Center for the Advancement of Phar-

maceutical Education (CAPE) *Educational Outcomes 2004* identified the ethical component of providing pharmaceutical care.³ The American Association of Colleges of Pharmacy's (AACP) Pharmacy Practice Educational Outcomes and Objectives Supplements Task Force added a content-specific outcome statement to the CAPE outcomes document. This task force pointed out that pharmacists should "exhibit a caring and respectful attitude and demonstrate empathy while establishing rapport and communicating with the patient and/or caregiver."⁴

Academic pharmacy has undertaken the task of teaching empathy to student pharmacists in a manner similar to academic medicine. The need to teach empathy has been articulated by the accrediting bodies of both professions. Researchers have studied teaching strategies to create or develop empathy in future practitioners, and how to measure the effectiveness of the strategies. A review of the effectiveness of strategies to enhance empathy in undergraduate medical students concluded that brief, targeted interventions aimed at enhancing empathy can have lasting impact, and that this information is sufficient to encourage educators to incorporate empathy into medical student courses devoted to communications and professionalism.⁵ Despite these positive results, the need for additional research was emphasized because the individually reviewed studies had several limitations, including: lack of conceptual clarity about empathy, small sample sizes, lack of comparison groups, brief and heterogeneous interventions, rarity of long-term assessment for durability of effect, and reliance on self-assessment.⁵ One exploratory study that evaluated physician encounters with patients

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presenting for their first lung cancer treatment found limited use of empathy by the physicians and identified multiple missed opportunities to express empathy.⁶ While the capacity to provide empathy has been identified as a key skill for medical training, the results from this study demonstrate the need for more empathy-focused educational efforts.

Educational activities to enhance empathy in student pharmacists have previously been described. Innovations such as a geriatric medication game, and a nutrition journal and diabetes shopping experience helped improve student pharmacists' appreciation and understanding of factors influencing management of geriatric patients and diabetes, respectively.^{7,8} Patient experience simulation exercises of an underserved individual with multiple chronic diseases were developed during an advanced pharmacy practice experience to improve the students' empathy for this population.⁹ Another study broadened the empathy discussion within academic pharmacy by analyzing self-reported empathy scores and the associated change resulting from empathy education delivered through a communications course.¹⁰

Efforts to anchor empathy training within professional communications courses, while consistent with ACPE standards and guidelines, may lead to the development of pharmacists who can ask questions that demonstrate empathy, but who have no passion for empathizing with the patient.² Consider the non-English speaker who simply memorizes the text of an emotional speech and delivers it verbatim in English. While this may demonstrate competence in speaking English, the feeling of authenticity is lacking. Recognizing that developing an empathic communication style is critically important, our effort to ground empathy training in an ethics course is meant to complement but not replace communication skills training. The hypothesis we tested was whether empathy scores would increase through empathy training anchored in an ethics course that was delivered in coordination with a pharmacotherapy module. Precision was added to the teaching innovation by encouraging empathy skill development from the perspective of a hypothetical cancer patient depicted in the film *Wit* and coordinating this effort with an oncology pharmacotherapy module.¹¹ The patient is a brilliant, tough-minded, Caucasian English professor who is diagnosed with endstage ovarian cancer. The film traces her journey from diagnosis to enrollment in a research study, treatment under protocol, and eventually death.

DESIGN

The expected outcome from the curricular innovation was to demonstrate an increase in student pharmacists'

empathy. This learning is described by Fink as a change in "the degree to which students care about something. . . as reflected in new values."¹²

Fink's taxonomy of significant learning identifies caring as a category of significant learning.¹² As such, the category of caring underscores that learning experiences can change "the degree to which students care about something." Furthermore, when students care about something, they have the energy needed for significant learning and for making the knowledge learned part of their lives. Fink's taxonomy is not hierarchal, but rather relational and integrative.

The innovation considered 2 aspects of developing empathy within future pharmacists. Some students may have poorly developed empathy skills and need to develop new empathic feelings and values in the context of their future professional role. Other students may have highly developed empathy skills at baseline but have not had the opportunity to apply them as practicing pharmacists, and discover that empathy is appropriate and valued within the context of the patient-pharmacist relationship. Recognizing the relational nature of Fink's taxonomy, and his conclusion that learning experiences that promote all 6 kinds of learning lead to experiences that can truly be deemed significant, the innovation attempted to impact students' learning in each category.

- Foundational knowledge. Basic ethical values and principles were discussed prior to the innovation using 2 separate lecture hours; specifically, lecture time was spent on understanding and appreciating patient values, the concept of suffering, and the relationship with cultural competency. Core teaching on the therapeutics associated with oncology were provided as part of the innovation.
- Application. Therapeutics lectures were presented to give students the practical ability to identify and manage appropriate medication regimens for cancer patients.
- Integration. The film *Wit* was used to integrate the ethics and pharmacy aspects of the module. Seeing the patient in the film experience the effects of chemotherapy was intended to connect the student pharmacists' practical knowledge of establishing a dosing regimen (application) with the suffering and potentially dehumanizing impact that this treatment can have on a person.
- Human dimension. The portrayal of the patient and health care workers (ie, nurse, physician, medical fellow, and residents) in *Wit* was intended to provide the basis for the student pharmacist to acquire an understanding of others and themselves in their future professional role.

- Caring. The goal of the innovation was an improvement in the student's empathy score, which reflected new feelings or values.
- Learning how to learn. While this category was not touched by the innovation in real time, the research team hoped that the module would inspire student pharmacists to strive continually to understand patient values and their role in delivering appropriate pharmaceutical care while in school and throughout their career.

Content

Biomedical and Business Ethics and Hematologic/Oncologic Pharmacotherapy are required, 2-credit courses taught during the first semester of the third year, when the integrated ethics-therapeutics module on death and dying was introduced. For the module, the teaching faculty in both courses combined course material over a 2.5-week period. Faculty time required for preparation, delivery, and assessment was slightly higher than the time required to prepare other lecture series. Incremental requirements included 3 to 4 hours of preparation time to view the film *Wit* and organize relevant discussion points. In addition, preparation time for coordinating course delivery between instructors was required.

With respect to teaching and learning methods, the traditional aspects of a didactic therapeutics course in oncology and hematology were maintained. For the 5-week integrated module, students were required to prepare in advance of each class and were given summative weekly assessments and a summative final course assessment. The ethics portion of the course relied on the presentation of the film *Wit*, an interactive lecture on hospice delivered by a representative from a local hospice, and a lecture on the ethics of pain management. The ethics portion of the lecture series, which assumed that foundational therapeutic knowledge was being developed, explored patient values as displayed from a nonpharmacist perspective via the film *Wit* through the ethical issues associated with the pharmacist-specific role of pain therapy medication manager. The rationale for this was to give human context and relevancy to the issue of human suffering and the critical importance of listening for, learning, and respecting patient values in the context of the overall management of a cancer patient.

Faculty expertise in discussing ethical issues associated with death and dying and pharmacotherapy information specific to oncology were required for teaching this module because of the potentially sensitive nature of the material presented and discussed. Faculty members and students were briefed on the module content in advance of delivery because of the potentially sensitive nature of the

material. University-based counseling resources were identified for faculty in anticipation of emotional responses requiring action beyond a faculty member's capability.

The research project was exempted by Wingate University's Research Review Board.

EVALUATION AND ASSESSMENT

Reflective Essays

Reflective essays were incorporated into the ethics course to assess the students' ability to address an ethical issue they experienced as part of the module and to support their opinion about this experience with an ethically defensible argument and critique. The 250-word personal reflection essay was 25% of the course grade. The essay was written after the innovation was completed. Students were given the opportunity to write on any ethics issue presented or discussed during the lecture series (eg, death and dying, hospice, pain management).

The lead ethics professor reviewed the reflective essays to obtain limited, qualitative insights about student empathy changes and to determine whether the student presented an ethically defensible position and was able to present a constructive criticism. The reflective papers demonstrated an appreciation of the ethical values involved in the patient-pharmacist interaction. Qualitatively, the reflections suggested that students' level of listening and compassion had improved as their words reflected recognition of the value of using patient-centered actions such as simply listening or gently touching a patient's shoulder.

Value-based Questions

One of the weekly pharmacotherapy assessments incorporated questions that probed the student's ability to address issues associated with patient values (Appendix 1). Assessment of the value-based questions took into consideration the completeness of their response, whether it went beyond opinion, and whether it took into consideration patient values and some form of moral grounding.

Balanced Emotional Empathy Scale

Recognizing the inherent difficulty in quantifying specific changes in empathy, the Balanced Emotional Empathy Scale (BEES) was used to provide an objective measure of emotional empathy. The 30-item scale is in questionnaire format and provides a balance of positively and negatively worded items.¹³ Subjects indicate agreement or disagreement with items based on a 9-point scale (-4 to +4, ranging from "very strong disagreement" to "very strong agreement"; a higher score indicates higher

empathy). Example items include: “It pains me to see young people in wheelchairs” and “I don’t get overly involved with friends’ problems.” Validity and reliability of the scale have been established, and it has been used to assess empathy in medical students.^{14,15}

The BEES was administered at baseline and subsequent to the innovation. Of 65 students enrolled in the course, 56 students completed the pre- and post-intervention BEES questionnaire and reflective essay (86% response rate). Statistical analysis of the BEES data was completed using SPSS version 15, using repeated measures ANOVA with a $p < 0.038$. Interaction with age, gender, education level, and family/personal history of cancer also was analyzed. Raw data of measured emotional empathy were transformed using z scores to assess performance to population mean and were transformed using gender-adjusted z scores to allow for cross-gender comparisons.¹³ Subsequent repeated measures t test was used to determine significance within each group and Student’s t test was used to determine significance between groups because repeated measures ANOVA supported statistical significance within overall study results.

Baseline raw scores ($n=56$) were 37.4 ± 3.7 (mean $\pm$ standard error of the mean) with a median score of 40. Because women are believed to have more baseline empathy than men, data transformation is recommended to compare raw score to population mean, and gender-adjusted z scoring is recommended to compare scores to gender-based mean and to allow for cross-gender comparisons.¹³ Transformation of the data with z scoring adjusted for gender demonstrated a mean z score of -0.4 ± 0.1 prior to the intervention, which is described as “slightly below average” (less than 40% of the population would have a lower score). Categorization of z scores was developed and validated by Mehrabian.¹³ Z scores are associated with population percentile scores and their interpretation. For example, a z score of 2.5 is in the 99.4 percentile and is interpreted as “very extremely above average,” while a z score of 0.0 is at the 50 percentile and is interpreted as “average.”

At the end of the intervention, the students showed an overall improvement in their emotional empathy as demonstrated by a mean raw score ($n=56$) of 41.4 ± 3.8

(median = 44), and a gender adjusted z score of -0.2 ± 0.1 , which is described as “average.” The change in interpretation of score from “slightly below average” to “average” was significant (repeated measures t test, $p < 0.008$). The mean and median data are shown by gender and testing interval (Table 1 and Table 2). These data indicate no significant difference between genders in improvement in raw score (approximately 10% improvement in raw scores for both male and female students, $p < 0.602$ comparing change in raw score between male and female students).

Due to the gap between the scores of female and male students, raw scores were transformed with z scores to compare student pharmacist scores against the population mean (z score) (Table 1). An adjustment for gender also was used and mean score of gender-adjusted data were shown to be equivalent between male and female students prior to the intervention ($p < 0.775$). Because there was no difference in gender-adjusted z scores, pre- and post-intervention data were collapsed and median data were calculated to determine whether the improvements that were observed were due to large changes in a few individuals or homogenous changes (Table 2). We conclude that a homogenous effect was seen because median and mean data indicate similar improvements in z scores and raw data. There was a significant change in the number of students whose scores increased from below average to average or above (Figure 1, $p < 0.017$). Overall there was a 17.4% increase in students achieving a score of average or better. An interaction with gender ($p = 0.003$) and between gender/history of an academic degree ($p = 0.009$) was noted, along with a trend towards an interaction between cancer history ($p = 0.068$) and sex/academic degree/cancer history ($p = 0.068$).

DISCUSSION

The integration of didactic materials and classroom strategies between the ethics and pharmacotherapy courses improved student pharmacists’ capacity to experience emotional empathy. Based on our results, we accept the hypothesis that students pharmacists’ empathy can be improved through empathy training anchored in

Table 1. Balanced Emotional Empathy Scale Scores of Student Pharmacists Before and After Completing a Module on Death and Dying, Mean (SEM)

	Male Preinter- vention	Male Postinter- vention	Female Preinter- vention	Female Postinter- vention	Overall Preinter- vention	Overall postinter- vention
Raw score	19.1 (4.5)	21.9 (4.9)	51.0 (4.1)	55.8 (4.0)	37.4 (3.7)	41.4 (3.8)
z score	-1.1 (0.2)	-1.0 (0.2)	0.3 (0.2)	0.5 (0.2)	-0.3 (0.2)	-0.2 (0.2)
Gender-adjusted z score	-0.4 (0.2)	-0.3 (0.2)	-0.4 (0.2)	-0.2 (0.2)	-0.4 (0.1)	-0.2 (0.1)

Table 2. Balanced Emotional Empathy Scale Scores of Student Pharmacists Before and After Completing a Module on Death and Dying

	Preintervention	Postintervention
Raw score	40.0	44.0
z score	-0.205	-0.045

an ethics course that is delivered in coordination with a pharmacotherapy module.

At a time when the profession of pharmacy is striving to evolve to a higher level of pharmacist autonomy and authority, and possibly to a primary care role that includes interdisciplinary collaboration with other health providers to meet primary care medication management needs, pharmacy colleges/schools must strive to incorporate strategies into the curriculum that help student pharmacists develop empathy.¹⁶ The evolving roles for pharmacists will create more patient interaction and thus a greater need for empathy skills to deliver high quality care. Developing empathy skills through a combined ethics and pharmacotherapy course not only complements classroom, problem-based, and experiential learning in therapeutics, but also serves to achieve accreditation goals. Because it demonstrated an increase in measured empathy, this innovation should be considered for application or further study in colleges and schools of pharmacy.

The movie *Wit* served as an excellent resource by connecting students with a patient experiencing the emotional and physical challenges of chemotherapy. Because the patient was being treated for cancer, students also made the connection between the content of the oncology pharmacotherapy module and patient care. This allowed for integration of the course material with classroom exercises, which we believe enhanced the learning experience. Including additional narratives involving patients from diverse backgrounds might allow/

encourage students to develop empathy for people from a broader range of socioeconomic, educational, and/or cultural backgrounds. Technical resources were modest; the ability to show a DVD was the only requirement. While the innovation was delivered on a single campus in our study, we do not believe there would be any challenges to delivering the innovation to multiple campus sites.

Other successful efforts to improve student pharmacists' empathy have been reported; however, there were key differences from this study. Two studies, one involving student pharmacists working at an asthma camp and the other a service-learning elective, reported increases in student empathy; however, neither study described the changes in detail, both used students' journal entries for assessment rather than administering a standardized scale, and both had statistical limitations.^{17,18} Another study that involved students simulating a patient's life and then measuring empathy changes using the statistically valid Jefferson Scale of Physician Empathy most closely aligns with the methodology of this study.⁹ Positive empathy changes were demonstrated with the simulation; however, significance was not possible to assess due to the small sample size.

Creating a situation within the classroom where student pharmacists can be so meaningfully impacted that their level of empathy changes, and subsequently to have that level of change measured in a statistically valid manner is complex pedagogy. Building upon the work that preceded this research project, we attempted to overcome this challenge by bringing together ethics and therapeutics in an environment that challenged students to experience the difficult emotions associated with death and dying through a patient they came to know through the video *Wit*. Based upon the significant change in empathy that we measured using a validated, reliable instrument, we believe the innovation was effective and provides a new platform for teaching empathy to student pharmacists.

Figure 1. Change in emotional intelligence among student pharmacists before and after participating in a module to increase empathy.

We also looked for interactions between variables and found significant differences in empathy based on gender and prior academic history. Previous studies have demonstrated differences between males and females in regards to empathy, with females performing at a higher level than males.^{19,20} This also was evidenced in our study, but raw scores of both male and female students improved. Specifically, male students improved by 14% and female students improved by 9% (repeated measures *t* test, $p < 0.034$). The improvement between male and female students was not significant ($p < 0.602$). There continued to be a considerable difference in raw scores of male (raw score 21.9) versus female students (raw score 55.8; higher score indicate greater empathy) after the intervention ($p < 0.001$).

Perhaps some men have a greater aptitude toward developing their empathy than others; but overall, the female students in our study had a smaller but more general increase in empathy than the male students after experiencing the story of the patient in *Wit*. Nevertheless, the dramatic improvement seen in BEES scores of some male students after this single intervention supports the hypothesis that multiple interventions might result in even more dramatic improvements in male students. This will require further study. The significant changes in measured empathy were accomplished over a 5-week period, which suggests that even greater changes in empathy are possible over multiple academic experiences such as this one.

The study was not without limitations. We did not attempt to measure the long-term effectiveness of positive empathy changes in this 5-week study. Future work in this area should consider re-sampling participants upon graduation to measure long-term changes in empathy. Because the study involved a module presented as part of 2 required courses, it was not possible to establish a control group as that would have required conducting parallel versions of the ethics and pharmacotherapy courses, which would have been logistically unfeasible. Controlling over multiple years is limited since comparator groups of student pharmacists will not be the same. The limited sample size also may have resulted in a type II error as there was a trend in empathy among students with a prior history of cancer and statistical interaction noted between the variables gender/cancer history/education level, but significant differences were not observed.

CONCLUSION

The integrated teaching of an ethics course and a pharmacotherapy module, including the use of a video to foster a personal and human connection with a patient for the purpose of developing empathy in student pharmacists is

a unique instructional strategy that resulted in a significant change in measured empathy. This strategy transforms ethics education from the traditional review of key ethical principles and subsequent case-based discussion and application of these principles to an emotionally challenging experience laden with patient values and ethical questions. By guiding this experience with faculty members trained in both disciplines we were able to show positive, measured changes in empathy.

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Appendix 1. Examples of Integrated Problems Used in Pharmacotherapy Class

Breast cancer

BB, a 36-year-old presents to your clinic with a new diagnosis of breast cancer. Two months ago, she had discovered a lump during a self-examination. A diagnostic mammogram revealed a 1.8 cm spiculated mass at the 6 o'clock position of the left breast without calcifications. Imaging of the right breast was normal.

SH: Married social worker, 3 children (ages 6, 8, 9)

DD was referred to a breast surgeon, who performed a lumpectomy and sentinel lymph node biopsy. Resection of a solitary sentinel node was positive for metastasis. A completion axillary dissection was subsequently performed.

Final pathology revealed a tumor that measured 1.8 cm in diameter, Grade 3. Surgical margins were negative, and there was no evidence of angiolymphatic invasion. Immunohistochemical (IHC) staining for estrogen and progesterone receptor (ER and PgR) expression was 0%, and the tumor was positive for HER2 by fluorescence in situ hybridization (FISH). In addition to the involved sentinel node, 2 of 14 lymph nodes were positive for metastatic disease.

DD was informed that she would need to undergo postsurgical radiation therapy to the chest wall. She now presents to your office to discuss additional treatment options. DD remembers her mother undergoing chemotherapy and how it knocked her out for days, and has concerns about what to do next.

Considering the principle of beneficence (doing good) and the principle of veracity (truth-telling), how would you undertake your initial conversation with the patient about treatment options, side effects and survival rates? Would your conversation change if this patient was a single mother?

Prostate cancer

DD (in question 3) responds well to therapy for several months but then presents with rapidly progressive disease, and is determined to have androgen-independent prostate cancer. He has put a living will and durable power of attorney for Health Care in his medical file. His oncologist recommends:

Docetaxel 75 mg/m² q 3 weeks + Prednisone 5 mg BID

Height 5'10"; Weight; 150 lb

1. What dose of docetaxel should DD receive?
2. How should DD be counseled about this regimen?
3. Are there any other subjective needs to consider?