Implementation of a Health Screening Training Process for Second and Third Year Pharmacy Students

Kara Paulachak[1], Rene Chavez[1], Michelle Kim, Pharm.D.[2], Jarred Prudencio, Pharm.D., BCACP, BC-ADM[3],

1: Pharm. D. Candidate, 2:Junior Specialist, Clinical Education Coordinator, 3: Assistant Professor of Pharmacy Practice; The Daniel K. Inouye College of Pharmacy University of Hawai'i at Hilo

Background

Student pharmacists at the Daniel K. Inouye College of Pharmacy (DKICP) at the University of Hawaii at Hilo frequently participate in community health screening events led by various student organizations. Prior to this study, each organization was responsible for creating their own training process. In order to standardize the training process, a more robust training program was developed, to ensure that all students were adequately prepared to conduct health screenings in the community, and to prevent the need to hold individual sign-offs for each event throughout the year.

In the Fall of 2016, 16 student pharmacists formed a voluntary committee with the goal of unifying the health screening protocol under the guidance of two faculty members. This would ensure that all students of the college that planned to do health screenings would receive the same standardized training. A questionnaire was created with 5-6 questions per disease state topic and was administered to gauge student's retention of counseling knowledge.

Purpose

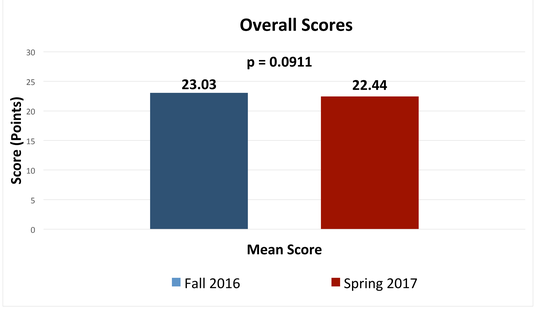
The objective of this study was to evaluate student retention of knowledge of counseling points regarding common community disease states after a standardized health screening training process, measured by a change in scores of a multiple-choice assessment. This study was to assess how effective this training was based on student knowledge retained over the course of the academic year.

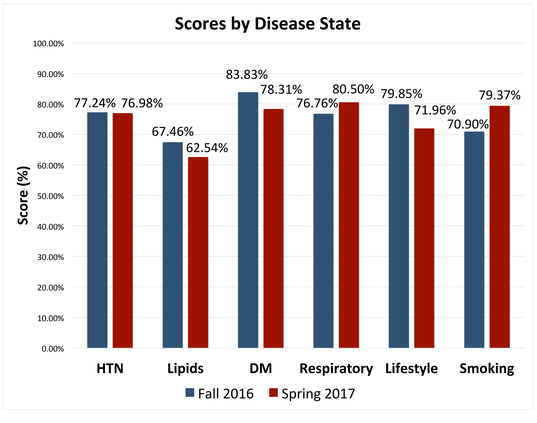
Methods

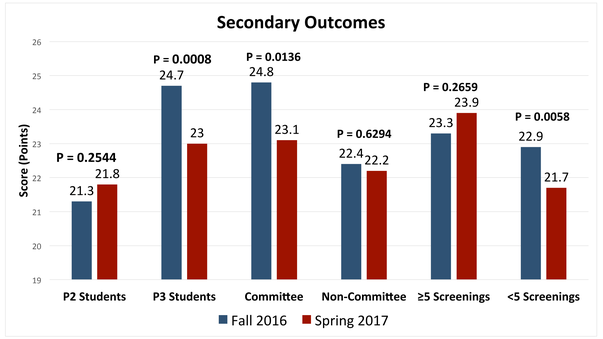
The standardized health screening process was split into three main sections: disease state didactic training, counseling didactic training, and a hands-on training. Students received counseling training for the disease states of hypertension, diabetes, dyslipidemia, asthma, and chronic obstructive pulmonary disease (COPD); and for lifestyle modifications such as diet, exercise, and smoking cessation. The training sessions were followed by a simulation case assessed by faculty members. In addition to the simulation, a knowledge-based questionnaire was administered. This 30-item questionnaire related to common conditions encountered at community health screening events was administered to students at the end of the training process in the beginning of Fall 2016. At the end of Spring 2017, roughly 8 months after the initial training, the questionnaire was administered again and student feedback was gathered. The primary outcome was change in scores between these two assessments, to assess student knowledge retention over the academic year. Changes in results of the Fall 2016 and Spring 2017 assessments were analyzed using a t-test. Secondary outcomes included subgroup analyses based on class standing, level of engagement in health screening events, and individual topics.

Results

A total of 67 students enrolled, consisting of 32 second-year (P2) and 35 third-year (P3) pharmacy students. Four P3 students were lost to follow-up and not included in the data analysis. Students scored an average of 22.4 points (74.81%) on the Spring 2017 exam, which reflected an overall decrease of 0.58 points (-1.96%) from original Fall 2016 exam scores (p=0.0911). Secondary subgroup analysis of change in scores by class standing yielded an increase of 0.5 (+1.67%) for P2 students (p=0.2544), and a decrease of 1.6 (-5.31%) for P3 students (p=0.0008). Students who were part of the screening training committee saw a decrease of 1.7 (-5.49%, p=0.0136), compared to students who were not part of the committee which saw a decrease of 0.2 (-0.65%, p=0.6294). Students who attended less than 5 events saw a decrease of 1.2, (-3.97%, p= 0.0058), compared to those who attended 5 or more events which saw an increase of 0.619 (+2.06%, p=0.2658).







Question Topic	Fall 2016	Spring 2017	Change
HYPERTENSION			
Risk Factors	89.60%	92.10%	2.50%
Signs & Symptoms	80.60%	71.40%	-9.20%
Systolic & Diastolic Explanation	92.50%	81%	-11.50%
Determination of BP goal	46.30%	63.50%	17.20%
HYPERLIPIDEMIA			
Risk Factors	94%	88.90%	-5.10%
Signs & Symptoms	71.60%	74.60%	3.00%
Examples of ASCVD	16.40%	15.90%	-0.50%
Factors in the ASCVD risk estimator	55.20%	34.90%	-20.30%
Explanation of ASCVD 10-year risk	100%	98.40%	-1.60%
DIABETES			
Risk Factors	61.20%	61.90%	0.70%
Type 1 & Type 2	95.50%	96.80%	1.30%
BG goals (not diagnosed with diabetes)	88.10%	88.90%	0.80%
BG goals (diagnosed with diabetes)	86.60%	57.10%	-29.50%
BG level of hypoglycemia	94%	92.10%	-1.90%
Signs & Symptoms of hypoglycemia	77.60%	73%	-4.60%
ASTHMA/COPD			
Risk Factors (asthma)	74.60%	90.50%	15.90%
Triggers (asthma)	73.10%	63.50%	-9.60%
Asthma Control Test	98.50%	100%	1.50%
Risk Factors (COPD)	38.80%	65.10%	26.30%
Triggers (COPD)	83.60%	77.80%	-5.80%
COPD Assessment Test	98.50%	98.40%	-0.10%
Differences between Asthma & COPD	70.20%	68.30%	-1.90%
LIFESTYLE			
Different types of fats	86.60%	77.80%	-8.80%
Diabetes plate method	68.70%	46%	-22.70%
DASH diet	92.50%	92.10%	-0.40%
Alcohol drink equivalencies	71.60%	74.60%	3.00%
Moderate intensity exercise	92.50%	87.30%	-5.20%
Weight resistance	67.20%	54%	-13.20%
SMOKING CESSATION			
5 A's	82.10%	96.80%	14.70%
Non-pharmacologic therapies	59.70%	61.90%	2.20%

Discussion

There was a decrease in knowledge retention after the standardized health screening training process, which was trending towards significance. Secondary outcomes revealed that P2 students had better overall retention rates when compared to P3 students, however this may be confounded by the difference in topics in the Pharm.D. curriculum for each class.

For students on the committee, creating lectures based on the guidelines, presenting to fellow students, and being a part of the process of creating a new standardized training was a beneficial learning experience. While some organizations may have done a similar process previously, this large scale committee involved students from six different organizations and was able to successfully implement this standardized process for the entire DKICP.

In secondary subgroup analysis, students who were part of the training committee had a poorer retention rate compared to those who were not. This may have been due to committee members having a higher baseline score in the Fall 2016 semester, due to reviewing material while organizing training sessions prior to taking the questionnaire during the fall semester. Students who participated in more events throughout the year had a better retention rate compared to those who participated in less events. This may suggest that being exposed to the screening process multiple times throughout the year had a positive impact on student retention of disease state knowledge.

Though all of the educational components of this training are covered in various parts of the Pharm.D. core curriculum, having the application piece tied together with hands-on training for community health screenings is a beneficial experience for all students. This is further supported by a post-training feedback survey, in which a majority of the students found the hands-on portion of the training to be the most helpful, and gave it an average rating of 4.35 on a 5 point scale.

Conclusion

Students benefit from being exposed to the health screening training process multiple times. Increasing their exposure and practical experience has the most potential to increase their knowledge retention. Based on these findings, this process of a unified health screening training facilitated by faculty members was integrated into the College's Introductory Pharmacy Practice Experiential (IPPE) courses for P2 and P3 students in the 2017-2018 academic year. Further studies should be performed to evaluate the efficacy of a formalized training course as a part of the core curriculum.

Disclosures

The University of Hawaii Institutional Review Board approved this study with exempt status.