Impact of International Pharmaceutical Students' Federation (IPSF) Campaigns On Student Pharmacist Knowledge

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Background

One of the primary objectives of *the International Pharmaceutical Students' Federation (IPSF)* is the promotion of public health activities that enable communities to think globally and act locally.

IPSF recommends using various disease-focused community health campaigns to do so. Student pharmacists from the Daniel K. Inouye College of Pharmacy (DKICP) at the University of Hawaii at Hilo developed a series of lectures based on a number of IPSF campaigns to present to the collegiate body.

Purpose

The purpose of this project is to assess the impact of these public health seminars on student pharmacist knowledge of global healthcare issues.

Methods

Study Design and Procedure: The institutional review board approved this prospective cohort study in November 2016. First, second, and third year pharmacy students from the DKICP were enrolled if they were willing to take a test prior to the start of, and following the conclusion of, the lecture series. Students who were involved in creation of any of the lectures were excluded from the study.

Over the 7-month campaign, 6 seminars were held, each focusing on one of the following public health topics: diabetes, antibiotics, AIDS, cancer, tuberculosis, and immunizations.

Instruments: A pre- and post-test consisting of 30 multiple choice questions relevant to these topics was administered to all participants. Pre-and post-tests were identical. This test evaluated the impact of the campaign on the baseline knowledge of student pharmacists. Tertiary literature and information from multiple national professional health organizations were utilized to develop the assessments.

Data Analysis: Pre- and post-test scores were recorded and statistically analyzed using a paired student t-test set at an alpha significance level of 0.05. The primary outcome measured was the comparison of pre- and post-test scores of all participants. Secondary outcomes included pre- and post-test scores analyzed by each class and each topic.

Results

A total of 56 pharmacy students were enrolled and completed the study. There were 29 first-year, 19 second-year, and 8 third-year pharmacy students.
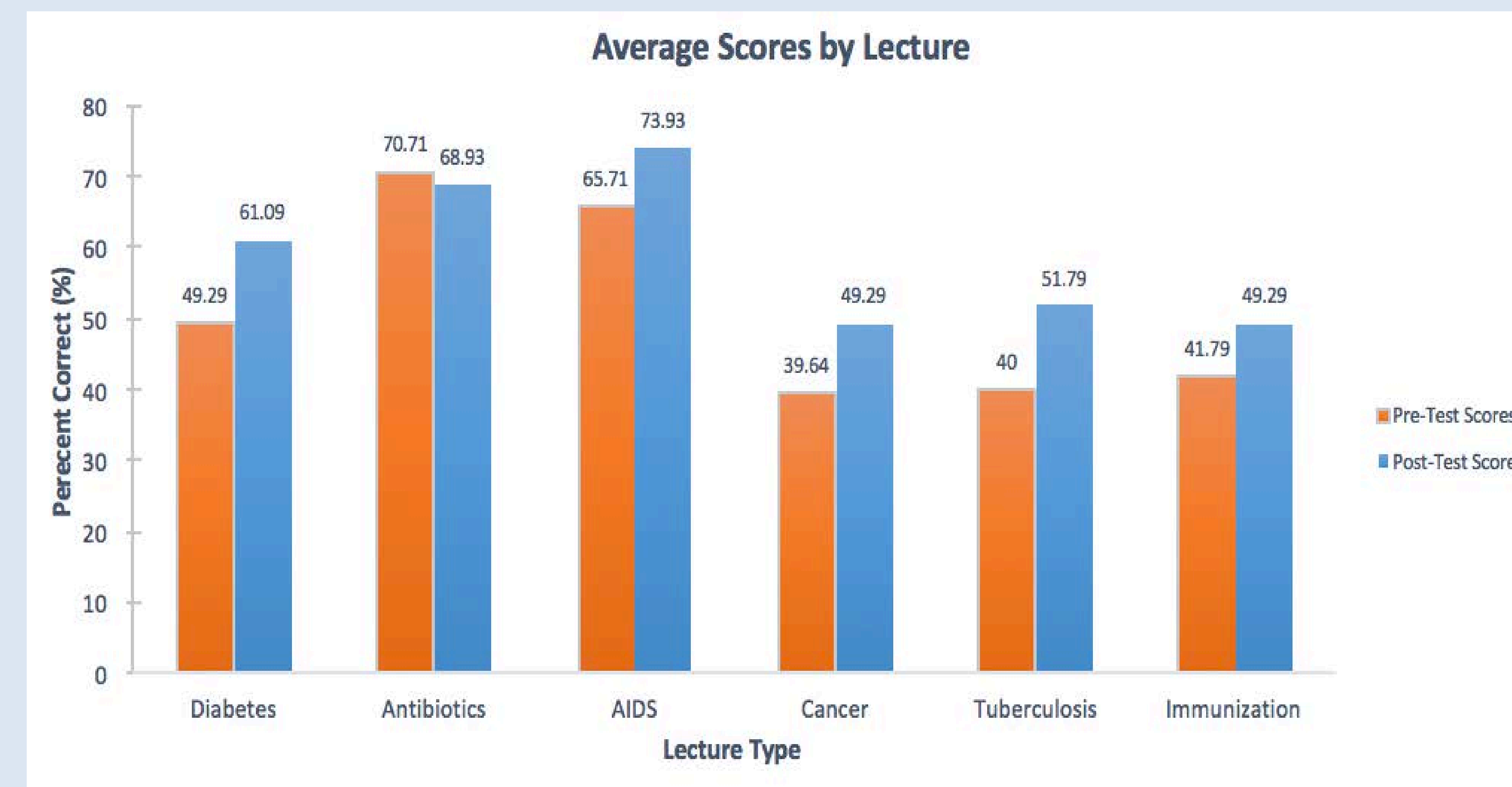
Figure 1. Average Pre- and Post Test data topics among three classes (N=56)
➤The mean pre- and post-test scores improved for diabetes (p=0.0078), AIDS (p=0.0145), cancer (p=0.0023), tuberculosis (p=0.0018), and immunization (p=0.041) among all three classes. Mean pre- and post-test score declined in the antibiotic section (p=0.5689).

Overall Pre- and Post-Test Data Topics Results						
	DIABETES	ANTIBIOTICS	AIDS	CANCER	TUBERCULOSIS	IMMUNIZATIONS
Mean Difference	0.1181	-0.0179	0.0821	0.0964	0.1178	0.0751
SD	0.32	0.23	0.24	0.23	0.27	0.27
SEM	0.0427	0.0311	0.0325	0.030	0.0359	0.0358
t-test	2.524	3.1986	2.524	3.1986	3.2778	2.0933
p-value	0.0078	0.5689	0.0145	0.0023	0.0018	0.041

Table 1. Overall Pre- and Post Test Data Topic Results Among Three Classes (N=56)
➤Descriptive statistics such as mean difference, standard deviation, SEM results were all reported among all three classes (P1, P2, P3).
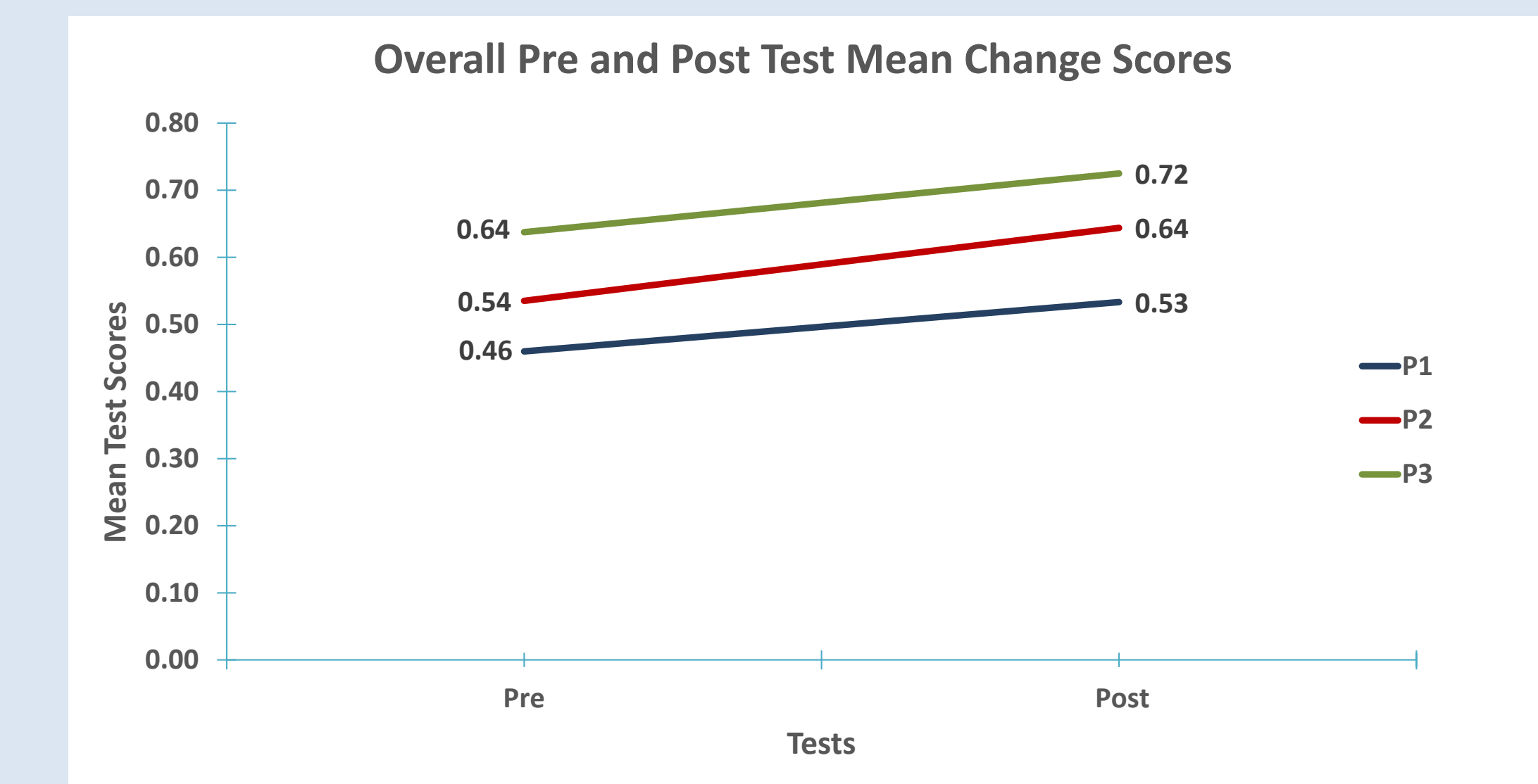➤A student's two tailed t-test was performed for each category.
➤All categories indicate that there was a statistical significance associated with the impact of the seminars with the exception of the antibiotics category.

Figure 2. Overall Pre- and Post-Test Mean Change Scores separated by class
➤ The mean difference between the pre- and post test scores for all students was 8.8% (p<0.001)
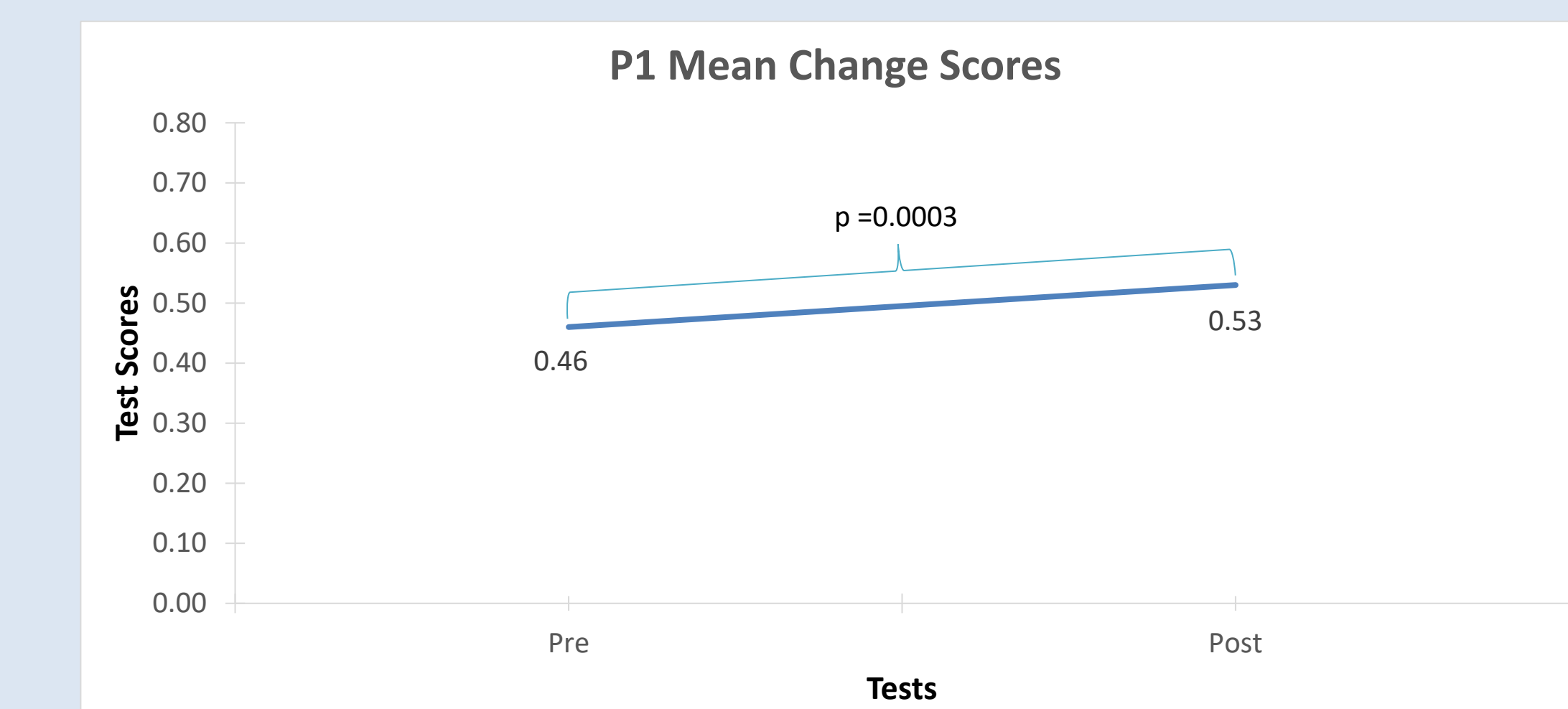
Figure 3. Mean test change scores for the P1 class
➤The mean difference between the pre- and post-test scores of first year students was 7.4% (p<0.001)
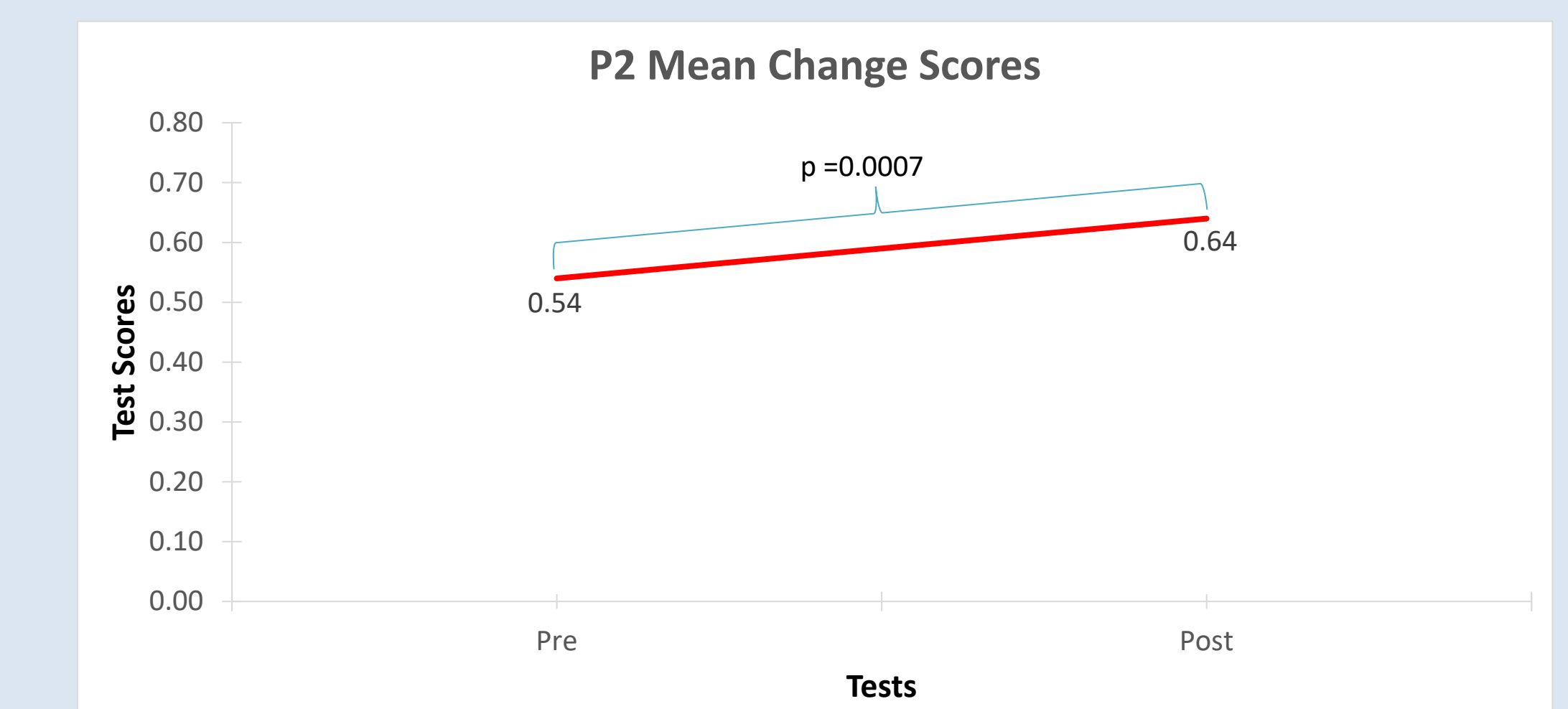
Figure 4. Mean test change scores for the P2 class
➤ The mean difference between the pre- and post-test scores for second year students was 10.9% (p<0.001)

Figure 5. Mean test change scores for the P3 class
➤ The mean difference between the pre- and post-test scores for second year students was 8.8% (p<0.023)

Conclusion

Results strongly imply that there was a significant impact associated with student-led IPSF campaigns on the knowledge of student pharmacists at the DKICP.
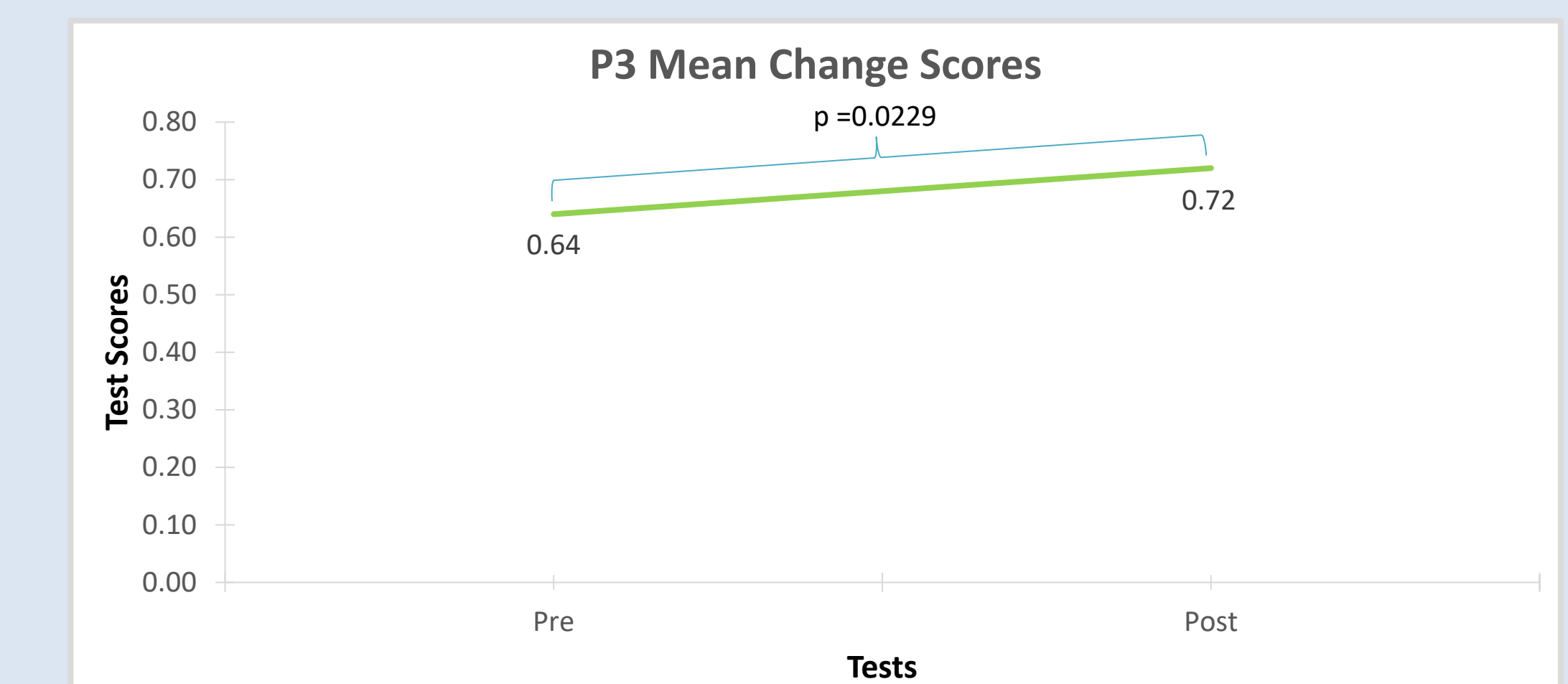
Overall, mean test scores improved for students who participated in this study as indicated by the primary outcome. This significant improvement was also observed in each class of students and for a majority of the topics. Non-significant score decreases in the antibiotics topic could be attributed to a non-standardized lecture format as compared to the other lectures in the series.

Next steps include re-evaluating various changes needed to make a larger impact on the baseline knowledge of student pharmacists at the DKICP, or other local audiences, in order to more effectively educate the community regarding these global healthcare issues.