



HealthWISE: Engaging Student Pharmacists in Elementary School Science Education

Lisa J. Woodard, PharmD, MPH, Judith S. Wilson, MA, James Blankenship, PhD, Raymond M. Quock, PhD, Marti Lindsey, PhD, Janni J. Kinsler, PhD

INTRODUCTION

Service-learning is an important curricular tool to help student pharmacists develop the knowledge, skills and attitudes needed for practice.¹ It positively impacts the health and wellness of the communities served.²

The U.S. Department of Education has identified that America's schools are not producing students with the science excellence required for global economic leadership and homeland security in the 21st century.³ America's youth lack both *proficiency* and *interest* in science.⁴ Student pharmacists who engage in service-learning in elementary classrooms can be an antidote for both the lack of proficiency and interest in the students they serve.

To address these needs, a one-credit elective course was designed allowing student pharmacists to integrate academic and clinical skills with principles of community health promotion and prevention while strengthening science education in elementary schools. Elementary students were taught the *Using Live Insects* curriculum focused on insects for the 2nd grade, and *Immunization Plus* curriculum focused on immunology for the 5th grade.

OBJECTIVES

The goals of the HealthWISE program were to:

1. Prepare student pharmacists to develop skills to communicate and collaborate with others.
2. Prepare student pharmacists to promote health improvement, wellness and disease prevention.
3. Prepare student pharmacists to provide mentorship to improve the profession and influence the next generation of pharmacists.
4. Improve health science education for elementary school students.

METHODS

A quasi-experimental pre-test/post-test research design was used to assess whether elementary student's science knowledge and attitudes changed as a result of the curricula. Four different intervention conditions were implemented with lessons taught by (1) teachers only, (2) student pharmacists only, (3) teachers + student pharmacists, or (4) no intervention – control group. Elementary school teacher satisfaction with the curricula and student pharmacist performance and learning were assessed using questionnaires and reflective writing assessments.

The Institutional Review Boards at the University of Pacific, Washington State University, and the University of Arizona determined this study was exempt from review.



CONCLUSION

HealthWISE is a viable approach to reach out to communities to bring the expertise of student pharmacists into elementary school education. Student pharmacists improve communication skills and promote wellness and professional mentorship. Elementary school teachers value the student pharmacist knowledge and professionalism. Elementary school children improve science knowledge from the student pharmacist lessons.

RESULTS/DISCUSSION

Elementary Student Knowledge and Attitudes Toward Science

- 281 2nd grade students participated.
- 264 5th grade students participated.
- Knowledge increased significantly from pre-test to post-test for all intervention groups.
- Attitude towards science increased significantly only for the teacher only intervention group with the 2nd graders.
- Demographic characteristics (gender, age, race, language spoken/read) did not predict post-test knowledge gain.

Classroom Teacher Satisfaction with the Curricula and Student Pharmacist Performance

- Teachers were generally satisfied with curricula, 100% said they would implement again in their classrooms.
- Features of the curricula they liked best: student pharmacist enthusiasm, children's books. Features of the curricula they liked least: too short, some lessons confusing.
- Teachers were satisfied with student pharmacist performance. Comments included: communicated well, impressed with white coats/professionalism, enthusiastic, well-prepared, good role models.
- Classroom teacher quotes:
"I think it is very important for students to see that there are wonderful careers in math and science. The student pharmacists were a great example of this."

Student Pharmacist Learning

- Student pharmacists felt they were successful in achieving the outcomes of the elective course including: improved communication, promoting health and wellness, professional mentorship.
- Student pharmacists are prepared for lifelong service in STEM education in their communities.
- Student quotes:
"From this experience, I have become a better communicator."
"I hope I have left a positive influence on the lives of my students."
In working with English language learners – "This experience reminded me of the difficulties of communication because as pharmacists we must educate and communicate effectively to our patients."

REFERENCES/ACKNOWLEDGEMENTS

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