RESEARCH

A Summer Pharmacy Camp for High School Students as a Pharmacy Student Recruitment Tool

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Objective. To determine the effectiveness of a summer pharmacy camp on participants' pursuit of enrollment in doctor of pharmacy degree programs.

Methods. All participants (n = 135) in a pharmacy camp at the University of Arkansas for Medical Sciences (UAMS) College of Pharmacy from 2007-2010 were invited to complete an anonymous online survey instrument.

Results. Seventy-three students completed the survey instrument (54% response rate). Ninety-six percent of pharmacy camp participants said that they would recommend pharmacy camp to a friend, and 76% planned to apply or had applied to doctor of pharmacy degree program. Seven of the camp participants had enrolled in the UAMS College of Pharmacy.

Conclusions. The pharmacy summer camp at UAMS is effective in maintaining high school students' interest in the profession of pharmacy. Continued use of the pharmacy camp program as a recruitment tool is warranted; however, additional research on this topic is needed.

Keywords: pharmacy camp, recruitment, admissions, pharmacy students, survey

INTRODUCTION

Colleges and schools of pharmacy have seen a decrease in the number of applicants in the last few years. With the increase in the number of colleges and schools of pharmacy and the expansion of existing pharmacy programs, pharmacy educators are looking for new ways to attract the best and brightest students to the profession. The competition for students goes beyond the competition between colleges and schools of pharmacy because not only do colleges and schools have to compete with each other for qualified applicants, they must also compete with other healthcare programs, including medicine, nursing, dentistry, and allied health professions.¹ Given these challenges, pharmacy college and school admissions offices are searching for new ways to improve the quality and diversity of their applicant pools.

One solution to the recruitment challenge has been the expansion of education programs to engage and inform prospective students about the pharmacy profession.

These programs can be targeted to students of all ages and are often focused on recruiting underrepresented and minority groups. Many pharmacy colleges and schools have developed programs targeted toward high school students. The UAMS College of Pharmacy has developed one such program.

The UAMS Pharmacy Summer Camp is a week-long program that hosts approximately 35 high school students annually and introduces them to the profession of pharmacy. The students stay in on-campus housing and participate in various activities including a compounding laboratory, tours of pharmacy practice sites, and clinical skills training (ie, checking blood glucose concentrations, and taking blood pressure), as well as in several recreational activities (Appendix 1). UAMS has now hosted 5 such camps. Applicants to the camp are required to apply, complete an essay expressing their interest in pharmacy, forward copies of high school transcripts, and provide 2 letters of recommendation (Appendix 2). Advertising for the camp is conducted through the college's Facebook page, Web page, and alumni magazines.

As determined by Web site reviews, at least 13 US colleges and schools of pharmacy offer a pharmacy summer camp experience for high school students. While many colleges and schools have summer recruitment programs, the available literature on pharmacy recruitment programs is

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scant. Two studies have looked at pharmacy recruitment programs directly and have shown them to be successful in attracting students to the profession. Langridge and colleagues found that a 5-week Career Explorers Program was successful in improving the participants' perception of the profession, as well as reversing some of the negative perceptions that the students may have held before participating.² Awé and Bauman found that a 6-week Pathways to Pharmacy program directed toward underrepresented minority students was successful in encouraging interest in pharmacy as a career and increased the number of underrepresented minority students in the college's prepharmacy program.³

While there is little research available about the effectiveness of recruitment programs, the various factors that contribute to a student's decision to choose pharmacy as a career have been evaluated. Anderson and colleagues found that the most important factor in a student's decision to pursue a pharmacy degree was the influence of family members.⁴ Knowing a pharmacist was the second strongest factor, followed by prior work experience in a pharmacy setting. Career-day events, however, were found to have little influence on a student's decision to pursue a pharmacy career. A similar study looked at the factors that led undergraduate pharmacy students' to select pharmacy as a major and found that "career prestige, earning potential, flexibility of career, and availability of jobs" had the greatest influence on them. The study also found that among non-pharmacy students there was little knowledge of the profession.¹ This suggests that more students could be drawn to the profession if they had greater access to information about the profession. Cline and colleagues surveyed prepharmacy undergraduate students and examined the differences between applicants and non-applicants to pharmacy school. They found that students who decided to pursue pharmacy before entering high school were more likely to apply to pharmacy school than those who decided to pursue pharmacy during or after high school.⁵ This study highlights the importance of pharmacy colleges and schools reaching out to younger students, or the parents of younger students, in order to draw them to the profession.

While these studies point toward the effectiveness of pharmacy recruitment programs, more work needs to be done to show that these types of programs are successful in recruiting qualified students to the pharmacy profession. The purpose of this study is to examine the effectiveness of the UAMS pharmacy summer camp in attracting students to the pharmacy profession and to the UAMS College of Pharmacy.

METHODS

This study received Institutional Review Board (IRB) approval by the UAMS IRB. All pharmacy camp

participants (n = 135) from 2007-2010 were invited to complete an anonymous survey using the online tool SurveyMonkey (Survey Monkey LLC, Palo Alto, CA). All participants were contacted via the e-mail address on file for them and asked to participate in the study. Participants were also sent a follow-up e-mail reminder and 2 letters to the mailing address on file for them asking for their participation. The final letter included a \$5 gift card for their participation. All respondents were included in the data analysis. Data were analyzed using descriptive statistics.

RESULTS

Seventy-three students completed the survey instrument for a 54% response rate. The demographic characteristics of the survey respondents are provided in Table 1. The majority (75%) of those who completed the survey instrument were female. The majority of respondents were 2010 camp participants, with fewer respondents from each of the 3 previous years. Fifty-seven (78%) respondents identified themselves as Caucasian, 13 (18%) as African American, and 3 (4%) as Asian. Demographic information of the camp participants was not obtained, so it is unknown whether the survey respondents were representative of the overall camp participant population. Participants learned about pharmacy camp through several sources (Table 2), the most common of which was the Internet (27%). Almost all (96%) respondents reported that they would recommend pharmacy camp to a friend.

The majority of survey respondents (75%) had already applied or planned to apply to pharmacy school (Table 3). The percentages of male and female participants who planned to attend pharmacy school was roughly equal (78% vs. 77%, respectively). The percentages of Caucasian and African-American participants who planned to attend pharmacy school were also similar

Table 1. Demographic Characteristics of Respondents to a Survey Regarding Pharmacy Camp (n = 73)

Demographic	Total, No. (%)
Gender	
Female	55 (75)
Male	18 (25)
Ethnicity	
Caucasian	57 (78)
African American	13 (18)
Asian	3 (4)
Year Participated	
2007	20 (27)
2008	10 (14)
2009	14 (19)
2010	29 (40)

Table 2. Source of Information About Pharmacy Camp (n = 73)

Source	Total, No. (%)
Internet	20 (27)
Parents	12 (16)
Teacher/Guidance Counselor	16 (22)
Pharmacist	13 (18)
Other	12 (16)

(76% vs. 77%, respectively). Students participating in recent camps expressed stronger interest in applying to pharmacy school than did earlier camp participants.

Students who learned about pharmacy camp from the Internet or from pharmacists were equally likely to have applied or planned to apply to pharmacy school (85% for both). Students who learned about pharmacy camp from their parents were slightly less likely to express an interest in applying to pharmacy school (75%), followed by those who learned about pharmacy camp from other sources (67%) or from their teachers and/or guidance counselors (63%).

Of those respondents who were still interested in applying to pharmacy school, a majority (80%) had already applied or planned to apply to the UAMS College of Pharmacy (Table 4). A higher portion of male respondents than female respondents expressed interest in UAMS (93% vs. 76%, respectively). While fewer of the 2008 participants remained interested in applying to pharmacy school, those who did unanimously expressed interest in applying to UAMS. However, African American and Asian respondents expressed less interest in applying to UAMS than did Caucasian respondents.

DISCUSSION

The summer pharmacy camp appears to be effective for maintaining high school students' interest in the profession of pharmacy. Ninety-six percent of pharmacy

Table 3. Demographics of Participants in a Pharmacy Camp Who Planned to Apply or Had Already Applied to Pharmacy School^a

Demographic	Total, No. (%)
Aggregate	55 (75)
By Gender	
Female	42 (76)
Male	14 (78)
By Ethnicity ^b	
Caucasian	43 (77)
African American	10 (77)
Asian	2 (67)

^a Eight students have already applied to pharmacy school.

^b One student did not respond to this question.

Table 4. Participants in a Pharmacy Camp Who Planned to Apply or Had Already Applied to Pharmacy School at UAMS

Demographic	Total, No. (%)
By Gender	
Female	31 (76)
Male	13 (93)
By Year	
2007	10 (77)
2008	4 (100)
2009	10 (83)
2010	20 (77)
By Ethnicity	
Caucasian	39 (91)
African American	5 (50)
Asian	0 (0)

camp participants said they would recommend pharmacy camp to a friend, suggesting that participation in the program was a positive experience. Seven former camp participants have enrolled, or plan to enroll, in the UAMS COP. Furthermore, a majority of respondents (76%) said they planned to apply or had already applied to pharmacy school. Of the 17 students who did not indicate continued interest in pharmacy school, 8 indicated interest in another healthcare field, specifically, medicine (3), nursing (2) or physical therapy (3). Generating applicants to pharmacy school is not the only measure of the camp's success. Some students may have come to pharmacy camp fully intent on pursuing a career in pharmacy only to realize that career path was not the best one for them. Helping students recognize this early in their education was just as important as assisting other students in determining that pharmacy was a good choice for them.

There was a greater interest in applying to pharmacy school among those students who had participated more recently in the camp. In particular, there was less interest among the students who had participated in 2008 than among those who participated in other years. This finding may have resulted from the small sample size (n = 10 students) for that year, or there may have been other confounding variables that resulted in less interest among students in that year's class. There was, however, less interest in applying to pharmacy school among students in the 2007 class than there was among students in the 2009 and 2010 classes. This may indicate that interest in pursuing a career in pharmacy declines as the time after completing pharmacy camp increases; therefore, the school may need to contact camp alumni on a more regular basis to maintain their interest in applying to pharmacy school.

Survey participants learned about the summer camp through a variety of sources, with the Internet being the

primary one. Maintaining or expanding the online presence of the pharmacy camp is justified. However, given the finding by Anderson and colleagues that family members and pharmacists are the strongest factors in a student's decision to pursue a pharmacy degree, it is also important to expand the amount of information about the program available to parents and pharmacists.

Hispanic students were absent among the survey respondents. Unfortunately, demographic information of camp participants was not collected during camp participation, so it is unknown whether Hispanics did not participate in pharmacy camp or whether they attended the camp but chose not to participate in the survey. Anecdotally, it is more likely that Hispanics were underrepresented as camp participants. Further efforts should be made to actively recruit camp participants from this demographic group. There may have been some selection bias in the study as students were invited to complete the online survey instrument through the e-mail address or permanent mailing address that we had on file for them. Therefore, participation in the survey required access to the Internet, which may have prevented some students from participating. Furthermore, the e-mail on file may have no longer been used by the student and/or the student's mailing address to which the survey reminder was sent may have been incorrect or outdated. Also, those students who were still interested in attending pharmacy school at UAMS may have been more likely to participate in the survey.

Because no pre-camp survey was taken, it is unknown how many of the participants came to camp already intent on pursuing a degree in pharmacy. Camp participants were most likely students who already had a strong interest in pursuing a career in pharmacy. Another potential question for future study is whether the camp should actively target students who have no prior interest in pharmacy, especially those already interested in another healthcare related field.

There was a potential for recall bias in the survey as all of the pharmacy camp participants were asked to complete the survey instrument in 2010-2011, regardless of the year in which they participated in pharmacy camp. Therefore, those students who participated in the camp

several years prior to completion of the survey instrument may have been unable to recall particular aspects of their pharmacy camp experience and their memory of the experience may have been distorted by intervening events.

Future studies should look at the group of students who applied to pharmacy camp but were not selected to participate due to space constraints. Comparing this group with the camp participants may provide another way in which to gauge the effectiveness of pharmacy camp in generating and maintaining high school students' interest in attending pharmacy school.

This study looked at one particular pharmacy camp program. Thus, application of the study findings to other programs should be done with caution.

CONCLUSION

The pharmacy summer camp at UAMS was effective in maintaining high school students' interest in the profession of pharmacy. Most participants responded positively to the program and indicated that they remained interested in applying to pharmacy school and that they would recommend pharmacy camp to a friend. Continued use of this program as a recruitment tool is warranted, however, due to the lack of available information for this and other such recruitment programs there is a need for future research on this topic.

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Appendix 1. Sample Pharmacy Camp Schedule

Day 1

3:00 PM – 4:00 PM	Residence Hall Check-In
5:30 PM – 7:30 PM	Welcome Party

Day 2

8:30 AM – 9:00 AM	Breakfast
9:00 AM – 9:15 AM	Camp Welcome: Dean's Welcome
9:15 AM – 9:30 AM	Camp Welcome: Arkansas Pharmacists Association
9:30 AM – 12:00 Noon	Compounding Laboratory
12:00 Noon – 1:00 PM	Lunch
1:00 PM – 3:00 PM	Compounding Laboratory
3:00 PM – 3:15 PM	Break
3:15 PM – 3:45 PM	Pharmacy Practice Lecture: Diabetes
3:45 PM – 4:30 PM	Pharmacy Practice Laboratory: Diabetes
4:30 PM	Return to Residence Hall
5:30 PM	Supper and Movie Night

Day 3

8:30 AM – 9:00 AM	Breakfast
9:00 AM – 12:00 Noon	Compounding Laboratory
12:00 noon – 1:00 PM	Lunch
1:00 PM – 1:30 PM	Pharmacy Practice Lecture: Hypertension
1:30 PM – 2:30 PM	Pharmacy Practice Laboratory: Hypertension
2:30 PM – 3:00 PM	Break
3:00 PM – 4:30 PM	Tour of Biomedical Research Building and Laboratories
4:30 PM	Return to Residence Halls
5:00 PM	Supper
7:00 PM	Roller Skating

Day 4

8:00 AM – 8:30 AM	Breakfast
9:00 AM – 1:00 PM	Pharmacy Practice Site Tours
1:00 PM – 2:00 PM	Lunch
2:00 PM – 3:00 PM	Academic Preparation for Pharmacy School
3:00 PM – 4:00 PM	Interviewing and Resume Writing
4:00 PM	Return Residence Halls
6:00 PM – 8:00 PM	Pizza and Games

Day 5

9:00 AM – 9:30 AM	Breakfast
9:30 AM – 11:00 AM	Sterile Products Laboratory
11:00 AM – 11:30 AM	Careers in Pharmacy (continued)
11:30 AM – 12:30 PM	Lunch
1:30 PM – 4:00 PM	Local City Tour and Shopping
4:30 PM – 5:00 PM	Summer Camp Group photos
5:30 PM	Supper
7:00 PM	Indoor Climbing Center

Day 6

9:00 AM – 9:30 AM	Breakfast
9:30 AM – 10:00 AM	Pharmacy Camp Wrap-Up
10:00 AM – 11:00 AM	Pharmacy Camp Recognition Ceremony
11:00 AM – 1:00 PM	Residence Hall Check-Out

Appendix 2. 2012 Pharmacy Camp Application Content

1. Future camper's name
2. Date of Birth
3. Gender
4. Permanent address
5. E-mail address
6. Race
7. Ethnicity
8. Name and address of High School
9. Academic classification next year (August 2012-May 2013)
10. Parent/Guardian full name
11. Parent/Guardian daytime and evening phones
12. Parent/Guardian Address
13. Emergency contact full name
14. Emergency contact daytime and evening phones
15. Emergency contact address
16. Please describe fully any special dietary requirements, current medical conditions being treated, prescription and over-the-counter medications currently being taken, physical limitations and/or any other information that should be known in an emergency and/or that may require advance planning by the UAMS College of Pharmacy camp program staff to accommodate your participation in the pharmacy summer camp program.
17. In 200 words or less, write a short essay below, which provides a self-introduction and conveys why you want to be a participant in the Pharmacy Summer Camp program.
18. A \$100.00 deposit is required with your application, high school transcripts, and two letters of recommendation. Please send all materials no later than Friday, February 10, 2012. Payment of the balance is due by Friday, April 6, 2012. Successful applicants will be notified by Friday, March 16, 2012 of their acceptance.

All camp participants will receive with their letter of admission the following: 1) complete camp agenda; 2) camp rules and regulations; 3) housing information and rules (includes check-in & check-out information); 4) participant agreement form; 5) release form. The Participant and Release forms must be signed by the camp participant and their parents/guardians and returned to the UAMS College of Pharmacy no later than Friday, April 6, 2012.

Parents/guardians may be asked to attend a regional parent meeting in May 2012. Student attendance is mandatory at all classes and activities of the Pharmacy Summer Camp (Sunday, June 10, 2012 - Friday, June 15, 2012). Any deviation from this requirement must be requested and approved in writing prior to Friday, April 29, 2012.

All students must have health insurance coverage and proof of such insurance must be provided to the UAMS College of Pharmacy prior to Friday, April 29, 2012.

The UAMS College of Pharmacy reserves the right to cancel the pharmacy camp and return all fees in the event of insufficient participant registration or for other compelling and unforeseen circumstances of good cause.