

Pharmacy Involvement in Overseas Missions

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ABSTRACT

Objectives: This study sought to quantify pharmacists' and students' involvement in medical missions; identify future interest, challenges, and motivators for participation; identify challenges to sharing Christian faith; ascertain perceived value and impact on patient care; and determine differences between pharmacists' and students' responses.

Methods: A link to the online questionnaire was emailed to pharmacists and student members of Christian Pharmacists Fellowship International (CPFII). Demographics and involvement in medical missions were obtained. Using a Likert scale, 36 items provided levels of agreement with motivation and challenges for mission participation, perceived value for various roles, and comfort to sharing Christian faith. To compare pharmacists' and students' responses, Fisher's exact test was used for nominal data, and chi-squared contingency coefficient was performed for Likert related questions.

Results: The overall response rate for the survey was 48%. Nearly 43% indicated having served on medical missions, and 88% expressed interest in future mission participation. The most common challenges to involvement faced by students were ignorance of opportunities, insufficient finances, unfamiliarity with disease states, and lack of diagnostic and treatment technologies. Pharmacists were more likely to face challenges related to personal responsibilities. Christian faith was a motivating factor for 83.1% of those who have participated in medical missions. Most felt comfortable sharing their faith with patients. The most common challenges to sharing faith were heavy workloads and the language barrier. Administration, medication dispensing, and patient counseling were the roles most often perceived as highly valued by medical mission team members. Most believed they provided an invaluable service, pharmacy skills were utilized on the team, and had a unique expertise to offer.

Conclusion: Although many CPFII members participate in medical missions, many more are interested but face challenges preventing participation. Addressing these could increase the numbers of members participating in medical missions.

Keywords: Pharmacist, Pharmacy Student, Medical Mission, Christian

Organization.¹ In rural areas, the ratio of pharmacist-to-patient is 1:700,000.¹ This leaves other healthcare professionals or lay workers to dispense medications without the optimal expertise or training for providing pharmaceutical care. Most of these nations allow prescription medicine to be purchased over-the-counter from unregulated markets which carry poorly manufactured drug products and lack the sufficient diversity or quantity of medications to meet every patient's needs. The risk for drug related errors, antibiotic resistance, abuse and misuse of medication is high. Short-term medical mission trips may help to address the worldwide limited access to pharmaceutical care. One study examined the value of a pharmacist in the mission field by measuring the work done by the pharmacy team.² In addition to dispensing 2,119 medications with the average patient receiving 1.84 medications, the pharmacy team made 2,340 interventions to improve patient care. A survey given to the other healthcare team members revealed that they believed their pharmacists played an invaluable role on the trip.

Pharmacy students can also contribute to the needs for pharmaceutical care. One study reported that six pharmacy students on a week-long medical mission trip to Nicaragua made a total of 624 interventions.³ These students counseled 420 patients, adjusted 78 doses, calculated 63 pediatric doses, made 35 therapeutic substitutions, and gave 28 medication recommendations. A medical mission trip to Guatemala organized through the University of North Dakota School of Pharmacy reported that pharmacy students participated in medication review of all prescriptions, dispensed medications, counseled patients, provided public health education, and collaborated with other healthcare professionals.⁴ Pharmacy professionals can provide many services on medical mission trips including medication reconciliation, inventory management of drug agents, guidance of prescribing agents with other healthcare providers, assessment and treatment of minor ailments, and vaccination administration.⁵

The purpose of this study was to identify the extent of pharmacists' and student pharmacists' involvement in medical missions by members of Christian Pharmacists Fellowship International (CPFII). The frequency of participation was quantified, and challenges, motivators, and future interest for participation in medical missions were identified. For those who had served in short-term or long-term missions, the study also explored perceived value and impact on patient care and challenges to sharing Christian faith.

METHODS

An online survey was created using Qualtrics and was emailed to members of CPFII, including practicing pharmacists, pharmacy students, and retired pharmacists. The survey consisted of 51 total questions, which are included in Appendix A. Demographic information was gathered to determine when participants were born, region of residence, gender, current practice setting, and

INTRODUCTION

Pharmacists have a unique set of skills in the provision of healthcare that are needed for patients not only in the United States but throughout the world. While many industrialized countries, including the United States, employ one pharmacist for every 2,300 people on average, most developing nations have only one for every 100,000 people, according to the World Health

where participants spent the majority of their practice time. Participants were also asked if they were student pharmacists or pharmacists. Students were asked to indicate the year they would graduate. Further questions determined which regions of the world respondents were most interested or least interested in serving. Other questions measured interest in participating in future medical missions and challenges and barriers to participating using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Mission trip involvement was evaluated, and if a respondent had previously served, the survey included questions about the number of mission trips in which they had served and regions of the world. They were also asked about motivation for participation, perceived value of various roles, and the extent to which Christian faith was shared, using a five-point Likert scale. The survey was pilot tested by 10 people who were not members of CPF. Data collection occurred between January 22 and February 23, 2018.

SPSS statistical analysis software was used for all analyses. Descriptive statistical analysis was performed to compare differences between pharmacists' and pharmacy students' responses. Fisher's exact test was used to analyze differences between pharmacists and pharmacy students for involvement in medical missions. Chi-squared contingency coefficient was performed to compare differences between pharmacists and pharmacy students for the Likert related questions. Significance was set at $p < 0.05$ (2-sided alpha). Research was approved by the Southern Illinois University Edwardsville Institutional Review Board as exempt status.

RESULTS

Of the approximately 850 active members, 409 CPF members completed the survey (48.1% response rate). The respondents represented 47.0% pharmacists and 53.0% pharmacy students. Other demographic information is included in Table 1. About 43% had participated in medical missions. Table 2 provides data on these participants. Approximately 83% agreed or strongly agreed that Christian faith was a motivating factor for participation.

Table 3 reports the extent to which participants believed their various roles and contributions to the team were valued by other members of the medical mission team. Most believed that they provided an invaluable service (86.0%), their pharmacy skills were utilized on the team (88.1%), and they had a unique expertise to offer (90.7%). There was a statistically significant difference between pharmacists' and pharmacy students' responses, as pharmacy students were less likely to agree on all three statements. Pharmacist roles related to administration (81.3%), medication dispensing (86.4%), and medication counseling (78.1%) were most often perceived to be highly valued. Student pharmacists were less likely than pharmacists to agree that their roles of administration (68.8%) and medication dispensing (70.8%) were perceived to be highly valued.

When asked about the frequency of which they shared their Christian faith, 25.0% of respondents shared their faith with patients multiple times daily, 50.0% shared with patients daily, 13.9% shared weekly, 0.7% shared monthly, and 10.4% never

shared. Table 4 reveals the extent to which respondents felt comfortable sharing their Christian faith and barriers to sharing faith. The most common challenges faced included language (60.4%) and heavy workloads (48.6%). Students were more likely to agree than pharmacists that lack of Biblical knowledge and nervousness or fear were barriers to sharing their faith.

Table 5 shows the likelihood that respondents would participate in future missions, regardless of whether or not they had participated in past missions. There was no significant difference between pharmacists and pharmacy students nor between men and women. The regions of the world CPF members were most interested in serving in order from most interested to least interested, were Central America (52.0%), South America (47.3%), North America (44.8%), Africa (43.1%), Europe (37.7%), the Pacific Islands (31.0%), and Asia (30.8%).

Table 6 identifies challenges preventing involvement in mission trips. A statistically significant difference between pharmacists and pharmacy students was noted for many of the challenges. Pharmacy students were more challenged by finances, lack of knowledge about opportunities, unfamiliarity with disease states, and intimidation due to lack of diagnostic and treatment technologies. Pharmacists were more challenged by personal responsibilities. Cultural challenges for participating in mission trip involvement included food preferences (10.8%), housing quality (10.3%), transportation (9.4%), climate (8.6%), and religious differences (2.2%).

DISCUSSION

The results of this study revealed a good level of participation in medical missions by CPF survey respondents (42.7%). However, an even higher percentage of respondents are interested in future participation (88%). The challenges to participating were identified. Thus addressing these challenges should be explored. Further education and training may address some of them. Mission team meetings prior to trip departure can train students for the field with more knowledge of tropical diseases, current best practices, and culture. The Christian Medical & Dental Association, the Medical Missions and CPF websites are great resources for online articles, book recommendations, and recorded lectures for further learning.^{6,7} They also provide current lists of short-term medical mission trips in need of recruits. Addressing financial challenges for students may include providing tips on raising financial support such as soliciting donations and applying for scholarships, such as those available to CPF members. Conducting panels, for example, with past participants who can share their growth experiences and how life challenges were addressed may also help members of CPF realize how being available for worldwide service is a response to a biblical call to serve and share the Gospel.

This survey has revealed that students should feel reassured that their pharmacy school training has adequately prepared them for the mission field. The data also supports that those who participate in medical missions develop professionally by challenging them to practice outside their comfort zone. Pharmacists and pharmacy students should be encouraged by this growth opportunity.

The survey responses indicate that pharmacists provide an invaluable service, have unique expertise, and pharmacy practice skills are utilized during medical missions. This is consistent with findings from Scopelliti's study.³ Roles related to administration, medication dispensing, and patient counseling were most often perceived to be highly valued by other members of the medical mission team, which is also consistent with previous studies.²⁻⁵ However, student members were less likely to agree that they provided an invaluable service, that they have a unique expertise, and that their pharmacy skills were utilized on the team. A pharmacist mentor, who either serves alongside the student or is available via phone or video chat, could provide guidance as they navigate their new role on the medical team.

Although nearly 78% of CPFI members reported that they felt comfortable sharing their Christian faith while on medical mission, many challenges were identified that, if addressed, could increase the opportunities for evangelism. If there were a larger mission team, there would be more volunteers available to share the Gospel. The use of interpreters would also facilitate sharing the Gospel. In particular, the utilization of local ministry partners including pastors, deacons, and evangelists may be even more effective in supporting patients' spiritual growth over time. Students who identify a personal lack of biblical knowledge can be mentored by the mission team leader or fellow team members prior to trip departure. Such relationships could be a source of encouragement, resulting in increased boldness to share their faith. Teams can even participate in service projects in their home country in order to provide opportunities to practice sharing their faith before leaving for the global mission field.

The number of people participating in medical mission trips may be higher in this select sample than in the general population of United States pharmacists. The CPFI mission statement, "to serve Christ and the world through pharmacy," and a Christian worldview may influence members to serve more often.⁸ This deduction is supported by the results of this survey since the primary motivating factor for medical mission participation was the opportunity to practice faith. However, this sample's beliefs do not represent the beliefs of all pharmacists, and thus the results of this study cannot be extrapolated to pharmacist populations outside of CPFI.

CONCLUSION

Many members of CPFI have participated in medical missions, but there is the potential for even greater involvement. Many of the challenges for participating in medical missions could be addressed through providing education on mission opportunities, pharmacy practice, and the importance of global missions. Based on the results of this study and previous studies, pharmacists and pharmacy students can be reassured that they would feel valued by other members of the healthcare team and provide an invaluable service to patients all over the world.

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Rachel Kozinski graduated this year from Southern Illinois University Edwardsville (SIUE) School of Pharmacy with her PharmD. She was the first president and founder of the Christian Pharmacy Fellowship International (CPFI) student chapter at her school. She also helped to pioneer a new international APPE to Hospital Loma de Luz in Honduras so that many future students could also pursue mission opportunities, like she did throughout her academic career. She has begun her pharmacy career at Walgreens and hopes to continue pursuing mission opportunities throughout her life.



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TABLE 1
Demographics of Respondents (N = 409)

	<u>n (%)</u>
Status	
Pharmacists*	187 (47.0)
Students**	211 (53.0)
Gender	
Male	144 (37.4)
Female	241 (62.6)
Year Born	
1980-2000	254 (66.0)
1960-1979	63 (16.4)
1940-1959	68 (17.7)
Region of Residence	
New England	7 (1.8)
Mid-Atlantic	40 (10.3)
East North Central	50 (12.8)
West North Central	37 (9.5)
South Atlantic	125 (32.1)
East South Central	48 (12.3)
West South Central	39 (10.0)
Mountain	7 (1.8)
Pacific	32 (8.2)
I Do Not Live in the US	5 (1.3)
Current Practice Setting	
Community-Retail	60 (15.6)
Community-Independent	25 (6.5)
Hospital	49 (12.8)
Academia	43 (11.2)
Student	149 (38.8)
Other	58 (15.1)
Majority Time Spent	
Administration	41 (10.6)
Clinical	44 (11.4)
Staff	52 (13.5)
Student	198 (51.4)
Teaching	32 (8.3)
Other	18 (4.7)

*19.4% of pharmacists surveyed have practiced <5 years, 26.0% 6-9 years, 11.3% 10-20 years, and 55.4% >20 years.

**28.6% of students surveyed graduate in 2018, 30.0% in 2019, 21.4% in 2020, 17.6% in 2021, and 2.4% >2021.

TABLE 2
Participants in Medical Missions

	<u>n (%)</u>
Participation in Medical Missions	165 (42.7)
Student/Pharmacist Status*	
Pharmacists	110 (59.5)
Pharmacy students	55 (27.4)
Gender*	
Male	80 (48.8)
Female	84 (51.2)
Frequency of Medical Mission Participation	
One	66 (41.0)
Two – Three	50 (31.1)
Four – Five	15 (9.3)
More Than Five	30 (18.6)
Areas Served on Past Medical Missions	
Africa	33 (13.6)
Asia	30 (12.4)
Central America	91 (37.4)
Europe	7 (2.9)
North America	38 (15.6)
Pacific Islands	5 (2.1)
South America	39 (16.0)
Total Trips	243 (100.0)
Primary Motivating Factor For Medical Mission Participation	
Opportunity to Practice Faith	105 (65.6)
Travel Opportunity	8 (5.0)
Volunteer Opportunity	45 (28.1)
Other	2 (1.2)

*p< 0.001; Fisher exact test used to determine significant difference between pharmacist and students with significance defined as p <0.05

TABLE 3
Perceived Value of Role on Previous Medical Missions (N = 155)

	Strongly Disagree/ Disagree n (%)	Neither Agree nor Disagree n (%)	Strongly Agree/ Agree n (%)	Does Not Apply n (%)	p-value*
Christian Faith Was a Motivating Factor for Missions Trip Involvement					
Pharmacists	17 (15.7)	2 (2.8)	88 (81.5)		p = 0.06
Pharmacy students	4 (7.7)	2 (3.8)	45 (86.5)		
Total	21 (13.1)	6 (3.8)	133 (83.1)		
Administrative Roles Were Valued (i.e. inventory management, drug stewardship, management of pharmacy)					
Pharmacists	4 (3.7)	7 (6.5)	93 (86.9)	3 (2.8)	p < 0.01*
Pharmacy students	3 (6.2)	6 (12.5)	33 (68.8)	6 (12.5)	
Total	7 (4.5)	13 (8.4)	216 (81.3)	9 (5.8)	
Medication Dispensing and Review Roles Were Valued					
Pharmacists	2 (1.9)	0.9 (1)	93.5 (100)	3.7 (4)	p = 0.01*
Pharmacy students	2 (4.2)	12.5 (6)	70.8 (34)	12.5 (6)	
Total	4 (2.6)	4.5 (7)	86.4 (134)	6.4 (6)	
Patient Monitoring Role Was Valued					
Pharmacists	11 (10.3)	26 (24.3)	51 (47.7)	19 (17.8)	p = 0.49
Pharmacy students	7 (14.9)	6 (12.8)	24 (51.1)	10 (21.3)	
Total	18 (11.7)	32 (20.8)	75 (48.7)	29 (18.9)	
Public Health and Patient Education Role Valued					
Pharmacists	3 (2.8)	14 (13.1)	82 (76.6)	8 (7.5)	p = 0.72
Pharmacy students	3 (6.2)	7 (14.6)	37 (77.1)	1 (2.1)	
Total	6 (3.9)	21 (13.6)	119 (76.8)	9 (5.1)	
Medication Counseling Role Valued					
Pharmacists	5 (4.7)	6 (5.6)	86 (80.4)	10 (9.4)	p = 0.83
Pharmacy students	4 (8.3)	4 (8.3)	35 (72.9)	5 (10.4)	
Total	9 (5.8)	10 (6.4)	121 (78.1)	15 (9.7)	

Compounding Role Valued					
Pharmacists	13 (12.3)	21 (19.8)	41 (38.7)	31 (29.2)	p = 0.22
Pharmacy students	8 (16.7)	9 (18.8)	11 (22.9)	20 (41.7)	
Total	21 (13.6)	30 (19.5)	52 (33.8)	51 (33.1)	
Drug Administration Role Valued					
Pharmacists	12 (11.3)	14 (13.2)	58 (54.7)	22 (20.8)	p = 0.92
Pharmacy students	4 (8.3)	7 (14.6)	26 (54.2)	11 (22.9)	
Total	16 (10.3)	21 (13.6)	84 (54.5)	33 (21.4)	
Missions Trips Have Challenged Me to Practice Outside My Comfort Zone in a Way that has Helped Me Grow as a Professional					
Pharmacists	3 (2.8)	4 (3.7)	100 (93.5)		p = 0.73
Pharmacy students	0 (0.0)	1 (2.1)	47 (97.9)		
Total	3 (1.9)	5 (3.2)	147 (94.8)		
Missions Trips Have Challenged me to Practice Outside My Comfort Zone in a Way that has Made me Feel Uncomfortable					
Pharmacists	51 (48.1)	24 (22.6)	31 (29.2)		p = 0.67
Pharmacy students	22 (45.8)	7 (14.6)	19 (39.6)		
Total	73 (47.4)	31 (20.1)	50 (32.5)		
Belief They Provided an Invaluable Service					
Pharmacists	2 (1.9)	6 (5.7)	98 (92.4)		p < 0.001*
Pharmacy students	5 (11.4)	8 (18.2)	31 (70.4)		
Total	7 (4.7)	14 (9.3)	129 (86.0)		
Belief Their Pharmacy Skills Were Utilized on the Team					
Pharmacists	2 (1.9)	4 (3.8)	100 (94.3)		p < 0.001*
Pharmacy students	6 (13.3)	6 (13.3)	33 (73.3)		
Total	8 (5.3)	10 (6.6)	133 (88.1)		
Belief They Had Unique Expertise to Offer the Medical Mission Team					
Pharmacists	2 (1.9)	4 (3.8)	100 (94.3)		p < 0.01*
Pharmacy students	5 (11.1)	3 (6.7)	37 (82.2)		
Total	7 (4.6)	7 (4.6)	137 (90.7)		

* Chi squared contingency coefficient used to determine significance between pharmacists and pharmacy students with significance defined as p < 0.05.

TABLE 4
Practice of Christian Faith (N = 144)

	Strongly Disagree/ Disagree n (%)	Neither Agree nor Disagree n (%)	Strongly Agree/ Agree n (%)	p-value*
Felt Comfortable Sharing Their Christian Testimony				
Pharmacists	6 (5.9)	13 (12.8)	83 (81.4)	p = 0.19
Pharmacy students	2 (4.8)	11 (26.2)	29 (69.0)	
Total	8 (5.6)	24 (16.7)	112 (77.8)	
Felt Comfortable Praying with Patients				
Pharmacists	8 (7.8)	16 (15.7)	78 (76.5)	p = 0.20
Pharmacy students	6 (14.3)	8 (19.0)	28 (66.7)	
Total	14 (9.7)	24 (16.7)	108 (75.0)	
Felt Comfortable Telling Patients about Jesus				
Pharmacists	4 (3.9)	23 (22.6)	75 (73.5)	p = 0.08
Pharmacy students	5 (11.9)	12 (28.6)	25 (59.5)	
Total	9 (6.2)	35 (24.3)	100 (69.4)	
Heavy Workloads and Limited Free Time Have Made Sharing Their Christian Faith with Patients a Challenge				
Pharmacists	35 (30.4)	19 (18.6)	52 (51.0)	p = 0.56
Pharmacy students	14 (33.3)	10 (23.8)	18 (42.9)	
Total	45 (31.2)	29 (20.1)	70 (48.6)	
The Language Barrier Made Sharing Their Christian Faith with Patients Challenging				
Pharmacists	21 (20.6)	18 (17.6)	63 (61.8)	p = 0.79
Pharmacy students	12 (28.6)	6 (14.3)	24 (57.1)	
Total	33 (22.9)	24 (16.7)	87 (60.4)	
Lack of Biblical or Spiritual Knowledge Made Sharing Their Christian Faith with Patients Challenging				
Pharmacists	75 (73.4)	22 (21.6)	5 (4.9)	p = 0.02*
Pharmacy students	28 (66.7)	8 (19.0)	6 (14.3)	
Total	103 (71.5)	30 (20.8)	11 (7.6)	
Nervousness or Fear Made Sharing Their Christian Faith Challenging				
Pharmacists	56 (54.9)	29 (28.4)	17 (16.7)	p < 0.01*
Pharmacy students	12 (28.6)	14 (33.3)	16 (38.1)	
Total	68 (47.2)	43 (29.9)	33 (22.9)	

*Chi squared contingency coefficient used to determine significant difference between pharmacists and pharmacy students with significance defined as p < 0.05.

TABLE 5
Future Interest in Medical Missions (N = 355)

	Strongly Disagree/ Disagree n (%)	Neither Agree nor Disagree n (%)	Strongly Agree/ Agree n (%)	p-value*
Likely to Participate in Medical Missions in the Next 2 Years				
Pharmacists	44 (25.3)	42 (24.1)	88 (50.6)	p = 0.48
Pharmacy students	36 (19.6)	41 (22.3)	107 (58.2)	
Male	29 (21.8)	27 (20.3)	77 (57.9)	p = 0.06
Female	50 (22.4)	56 (25.1)	117 (52.5)	
Total	80 (22.4)	83 (23.2)	195 (54.5)	
Interested in Participating in Medical Missions				
Pharmacists	9 (5.2)	16 (9.2)	148 (85.6)	p = 0.51
Pharmacy students	5 (2.7)	13 (7.1)	166 (90.2)	
Male	8 (6.1)	11 (8.3)	113 (85.6)	p = 0.06
Female	5 (2.2)	18 (8.1)	200 (89.7)	
Total	14 (3.9)	29 (8.1)	314 (88.0)	

*Chi squared contingency coefficient used to determine significant difference between pharmacists and pharmacy students with significance defined as p <0.05.

TABLE 6
Challenges to Participation in Medical Missions (N = 348)

	Strongly Disagree/ Disagree n (%)	Neither Agree nor Disagree n (%)	Strongly Agree/ Agree n (%)	p-value*
Financial Challenges Have Prevented Participation in Medical Missions				
Pharmacists	76 (44.2)	32 (18.6)	64 (37.2)	p < 0.001*
Pharmacy students	26 (16.0)	21 (12.0)	128 (73.1)	
Total	102 (29.4)	53 (15.3)	192 (55.3)	
Challenges Acquiring Work Leave Has Prevented Participation in Medical Missions				
Pharmacists	61 (35.3)	36 (20.8)	76 (20.8)	p = 0.05
Pharmacy students	56 (32.0)	53 (30.3)	66 (37.7)	
Total	117 (33.6)	89 (25.6)	142 (40.8)	
Personal Responsibilities Have Prevented Participation in Medical Missions				
Pharmacists	48 (27.9)	25 (14.5)	99 (57.6)	p = 0.01*
Pharmacy students	56 (32.2)	38 (21.8)	80 (46.0)	
Total	104 (30.6)	63 (18.2)	179 (51.7)	
Nervousness or Fear Has Prevented Participation in Medical Missions				
Pharmacists	118 (68.6)	25 (14.5)	29 (16.9)	p = 0.21
Pharmacy students	103 (59.9)	30 (17.4)	41 (23.6)	
Total	221 (63.9)	55 (15.9)	70 (20.2)	

Cont.

TABLE 6
Challenges to Participation in Medical Missions (N = 348)

	Strongly Disagree/ Disagree n (%)	Neither Agree nor Disagree n (%)	Strongly Agree/ Agree n (%)	p-value*
Lack of Knowledge of Opportunities Has Prevented Participation in Medical Missions				
Pharmacists	106 (61.3)	20 (11.6)	47 (27.2)	p < 0.001*
Pharmacy students	56 (32.0)	27 (15.4)	92 (52.6)	
Total	46.6 (162)	47 (13.5)	139 (39.9)	
Training in the United States Has Equipped You to Practice Pharmacy in Medical Missions				
Pharmacists	13 (7.5)	21 (12.1)	139 (80.4)	p = 0.20
Pharmacy students	14 (8.0)	30 (17.2)	130 (74.7)	
Total	27 (7.8)	51 (14.7)	269 (77.5)	
Language Barrier is an Intimidating Challenge for Participation in Medical Missions				
Pharmacists	60 (34.9)	33 (19.2)	79 (45.9)	p = 0.06
Pharmacy students	44 (25.1)	28 (16.0)	103 (58.9)	
Total	104 (30.0)	61 (17.6)	182 (52.4)	
Unfamiliarity with Disease States is an Intimidating Challenge for Participation in Medical Missions				
Pharmacists	82 (47.4)	39 (22.5)	52 (30.1)	p < 0.001*
Pharmacy students	46 (27.8)	26 (15.0)	101 (58.4)	
Total	130 (37.4)	65 (18.7)	153 (44.0)	
Increased Responsibility is an Intimidating Challenge for Participation in Medical Missions				
Pharmacists	102 (60.0)	29 (17.1)	39 (22.9)	p = 0.02*
Pharmacy students	75 (42.9)	36 (20.6)	64 (36.6)	
Total	177 (51.3)	65 (18.8)	103 (29.9)	
Lack of Diagnostic and Treatment Technologies are Intimidating Challenges for Participation in Medical Missions				
Pharmacists	73 (42.7)	41 (24.0)	57 (33.3)	p = 0.01*
Pharmacy students	54 (31.6)	29 (16.8)	90 (52.0)	
Total	127 (36.9)	70 (20.4)	147 (42.7)	
Lack of Medications is an Intimidating Challenge for Participation in Medical Missions				
Pharmacists	74 (42.8)	37 (21.4)	62 (35.8)	p = 0.17
Pharmacy students	62 (35.4)	30 (17.1)	83 (47.4)	
Total	136 (39.1)	67 (19.2)	145 (41.7)	
Heavy Work Loads are an Intimidating Challenge for Participation in Medical Missions				
Pharmacists	108 (62.4)	27 (15.6)	38 (22.0)	p = 0.77
Pharmacy students	113 (64.6)	30 (17.1)	32 (18.3)	
Total	221 (63.5)	57 (16.4)	70 (20.1)	

APPENDIX A

Pharmacy Involvement in Medical Missions

Preamble: You have been asked to complete this survey as part of a research project conducted by Rachel Kozinski, a student, and her faculty mentor, Dr. Therese Poirier at Southern Illinois University Edwardsville School of Pharmacy. The research project is called Pharmacy Involvement in Medical Missions and is designed to determine involvement and interests in medical missions. Your responses are entirely voluntary, and you may refuse to complete any part or all of this survey. This survey is anonymous, meaning that there should be no way to connect your responses with you. By completing and submitting the survey, you affirm that you are at least 18 years old and that you give your consent for participation in this research. If you have any questions about this research before or after you complete the survey, please contact Rachel Kozinski at rkozins@siue.edu or Terri Poirier at tpoirie@siue.edu. If you have questions about your rights as a research participant in this research, you can call the SIUE Institutional Review Board at 618-650-3010 or email at irbtraining@siue.edu.

Q1 Please indicate your status.

- Pharmacist
- Pharmacy Student

Q2 Please indicate when you are anticipated to graduate.

- 2018
- 2019
- 2020
- 2021
- >2021

Q3 How long have you been a registered pharmacist?

- <5 years
- 6-9 years
- 10-20 years
- >20 years

Q4 Please indicate when you were born.

- 1980-2000
- 1960-1979
- 1940-1959

Q5 In what region of the country do you currently live?

- New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont)
- Mid-Atlantic (New Jersey, New York, Pennsylvania)
- East North Central (Illinois, Indiana, Michigan, Ohio, Wisconsin)
- West North Central (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota)
- South Atlantic (Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, District of Columbia, West Virginia)
- East South Central (Alabama, Kentucky, Mississippi, Tennessee)

- West South Central (Arkansas, Louisiana, Oklahoma, Texas)
- Mountain (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming)
- Pacific (Alaska, California, Hawaii, Oregon, Washington)
- I do not live in the United States

Q6 What is your gender?

- Male
- Female

Q7 Where is your current practice setting?

- Community Retail Chain
- Community Independent Pharmacy
- Hospital Pharmacy
- Academia
- Student
- Other

Q8 Where is the majority of your time spent (i.e., >50% of time)?

- Administration/management
- Clinical
- Staff
- Student
- Teaching
- Other

Q9 Have you ever participated in a medical missions trip?

- Yes
- No

Q10 How many medical missions trips have you taken?

- 1
- 2-3
- 4-5
- >5

Q11 Which areas of the world have you served on medical missions trip? Choose all that apply.

- Africa
- Asia
- Central America
- Europe
- North America
- Pacific Islands
- South America

Q12 What was the primary motivator to participate in medical missions?

- Continuing education
- Opportunity to practice faith
- Travel opportunity
- Volunteer opportunity
- Other

Q13 My Christian faith was a motivating factor for missions trip involvement.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q14 I believe I was valued for my administrative roles (i.e. inventory management, drug stewardship, management of pharmacy).

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q15 I believe I was valued for my role in medication dispensing and review.

- Strongly disagree
- Disagree

- Neither agree nor disagree
- Agree
- Strongly agree

Q16 I believe I was valued for my role in patient monitoring.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q17 I believe I was valued for my role in patient education and public health.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q18 I believe I was valued for my role in medication counseling.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q19 I believe I was valued for my role in compounding.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q20 I believe I was valued for my role in drug administration.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q21 In the past, missions trips have challenged me to practice outside my comfort zone in a way that has helped me grow as a professional.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q22 In the past, missions trips have challenged me to practice outside my

comfort zone in a way that has made me feel uncomfortable.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q23 I believe I provided invaluable services on the healthcare team.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q24 I believe my pharmacy skills were utilized on the medical mission.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q25 I believe I have unique expertise to offer the medical mission team.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q27 Indicate the frequency in which you shared your Christian faith on a medical mission.

- Multiple times a day
- Daily
- Weekly
- Monthly
- Never

Q28 I felt comfortable sharing my Christian testimony during the medical mission.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q29 I felt comfortable praying with my patients on medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree

- Strongly agree

Q30 I felt comfortable telling my patients about Jesus on medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q31 Heavy workloads and limited free time have made sharing my Christian faith with my patients a challenge on medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q32 The language barrier has made sharing my Christian faith with my patients a challenge on medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q33 Lack of biblical or spiritual knowledge has made sharing my faith with my patients a challenge on medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q34 Nervousness or fear has made sharing my Christian faith with my patients a challenge on medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q35 I am likely to participate in a future medical missions trip in the next two years.

- Strongly disagree
- Disagree

- Neither agree nor disagree
- Agree
- Strongly agree

Q36 I would be interested in participating in a future medical missions trip.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q37 Which areas of the world are you most interested in serving?

- Africa
- Asia
- Central America
- Europe
- North America
- Pacific Islands
- South America
- Not interested in Any Area

Q38 Which areas of the world are you interested in serving?

- Africa
- Asia
- Central America
- Europe
- North America
- Pacific Islands
- South America
- Not interested in Any Area

Q39 Financial challenges have prevented me from participating in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q40 Challenges acquiring work leave have prevented me from participating in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q41 Personal responsibilities have prevented me from participating in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q42 Nervousness or fear has prevented me from participating medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q43 Lack of knowledge about opportunities has prevented me from participating in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q44 Indicate cultural challenges that have prevented you from participating in medical missions? (Choose all that apply.)

- Climate
- Food preferences
- In-country transportation/traffic
- Quality of housing
- Religious differences
- Other
- No challenges

Q45 I believe that my training in the United States has equipped me to practice pharmacy in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q46 The language barrier is an intimidating challenge for participation in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q47 Unfamiliar medications is an intimidating challenge for participating in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q48 Unfamiliar disease is an intimidating challenge for participating in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q49 Increased responsibility is an intimidating challenge for participating in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q50 Lack of diagnostic and treatment technologies are intimidating challenges for participating in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q51 Lack of medications and other limited resources are intimidating challenges for participating in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Q52 Heavy work loads are intimidating challenges for participating in medical missions.

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree