RESEARCH

Syrian Pharmacy Students' Intentions and Attitudes Toward Postgraduate Education

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Objective. To investigate Syrian pharmacy students' intentions and attitudes toward postgraduate study, and to determine and evaluate the factors that influence their preferences.

Methods. A questionnaire was developed and used to collect data from final-year bachelor of pharmacy (BPharm) students at Damascus University.

Results. Of the 265 students who responded to the survey, approximately 50% intended to work, 25% intended to pursue further study, and 25% were undecided. Personal fulfillment was the factor that most influenced students' intentions concerning future education. Men were more concerned over their financial future, while women's intentions were more influenced by scientific issues. The 3 most preferred pharmaceutical areas of further study were biochemistry and laboratory diagnosis, pharmaceutics and pharmaceutical industry, and clinical pharmacy. More students favored pursuing graduate school abroad rather than in Syria. The majority of those who intended to enroll in local graduate programs were interested in academic programs while less than a fifth favored residency programs.

Conclusions. The graduate programs in Syria do not appear to satisfy pharmacy students' ambitions or have the capacity to accommodate the growing demand associated with the rapid increase in the number of pharmacy graduates in the country. Consequently, a majority of students prefer to pursue postgraduate study abroad.

Keywords: postgraduate study, graduate programs, pharmacy, bachelor of pharmacy students

INTRODUCTION

In this new era of pharmacy practice, highly qualified pharmacists are needed and, as a result, more pharmacists may consider graduate study as a means to further their careers.[1] However, in many countries, only a small percentage of pharmacy graduates opt to pursue postgraduate study immediately after graduation.[2-5] A 2011 survey found that only about 2% of 2010 pharmacy graduates in the United Kingdom pursued full-time postgraduate study.[3] In addition, the majority of students (92.7%) at 14 British schools of pharmacy intended to begin their 1-year practical training immediately after graduation, which is a prerequisite to registering as a pharmacist in Britain.[4] Similarly, a study by the Graduate Careers Council of Australia, which surveyed pharmacy graduates from Australian universities who completed their preregistration training in 2004 and were registered by 2005, reported that only 3.6% were pursuing further full-time study, and 8.4% were pursuing further part-time study.[5] Additionally, only an estimated 8.3% of graduate students enrolled in pharmacy PhD programs in the United States obtained their pharmacy degree from a US university.[2] The decreased tendency to pursue further study in these countries is largely attributed to no requirement for a postgraduate qualification to practice as a pharmacist; thus, having a postgraduate degree may not be advantageous when applying for jobs within the profession of pharmacy. The decision not to pursue further study may also be related to exhaustion after prolonged years of higher education and to lack of financial incentives.[6,7] Increasing salaries, reducing the time necessary to complete graduate school, and increasing encouragement by faculty and staff members are among factors to be considered to increase the likelihood of pharmacy students pursuing graduate school.[8]

In Syria, numerous changes have taken place in pharmacy education and practice. Seven new private and 1 new public pharmacy schools have opened since 2003, raising the total number of schools in Syria to 12, with a few more expected to open in the near future. This has led to an unprecedented growth in the total number of pharmacy graduates each year from 650 to slightly more

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than 1,200 graduates between 2005 and 2010. In addition to graduates with a Syrian degree, many Syrians go abroad for study and come back home with a pharmacy degree from a foreign school. In 2011 alone, 340 graduates who had obtained an overseas degree in pharmacy passed the pharmacist licensure examination in Syria. As a result, the number of registered pharmacists increased from about 13,000 to more than 18,000 from 2005 to 2011, resulting in a pharmacist to general population ratio of approximately 1:1300.[9] These noticeable changes have created an increasingly competitive work environment that may encourage more graduates who are seeking better job opportunities to consider undertaking further studies. In countries where the density of registered pharmacists is larger than that recommended by the World Health Organization (WHO) (a pharmacist to population ratio of 1:2000) a similar situation to that in Syria may be experienced.

The pharmacy program at Damascus University, as well as all of the other Syrian public universities, is a 5-year semester-based program that leads to a bachelor of pharmacy (BPharm) degree. Similar BPharm programs are adopted by the private schools of pharmacy; however, these schools follow a credit-based system. All BPharm programs in Syria are accredited by the Ministry of Higher Education. Pharmacy-related graduate programs in Syria are available in 2 types: academic and residency programs. Academic graduate programs leading to master's and doctor of philosophy (PhD) degrees are provided by only 3 public schools of pharmacy: 11 different programs in various pharmaceutical areas at the Damascus school of pharmacy, 5 in the Aleppo school of pharmacy, and 2 in the Teshreen school of pharmacy. Also, the Ministry of Health manages residency programs at public hospitals and Ministry of Health centers around the country. These residency programs cover 2 areas of specialization: laboratory diagnosis, and drug manufacture and quality control. Both master's degree and residency programs are full-time and the minimum time for completion is between 3 and 4 years, depending on the program. The number of admitted students in local graduate programs is limited and comprises only a small percentage of pharmacy graduates. In the 2011-2012 academic year, 73 and 47 pharmacists were enrolled in academic and residency programs, respectively. These comprised only 9% of the total number of graduates from Syrian pharmacy schools in 2011. The main aim of this study was to examine students' attitudes concerning graduate studies and evaluate the factors that influence their preferences. Students' intentions upon graduation were also investigated.

METHODS

A questionnaire was developed and distributed to fifth-year (final-year) pharmacy students at Damascus University in the 2010-2011 academic year. The reason for selecting final-year students as a target sample for this cross-sectional study was because they were at a transitional stage where they had to choose between starting a career and pursuing further study. Logically, at this stage, students' opinions and attitudes concerning postgraduate study would be developed and contribute to their decision of whether to stay in college or start a career.

Seven final-year students were selected randomly and asked to voluntarily take part in the questionnaire development procedure. These students served as a representative sample of the expected study population. Based on their responses and comments to issues related to pursuing postgraduate study, a draft questionnaire was developed. The draft was then evaluated by the 7 students for clarity before the final version of the questionnaire was created. Because this group was treated as part of the study sample, they were asked to complete the questionnaire.

The questionnaire was designed to probe students' career and further study intentions upon graduation, preference of area of postgraduate study, preference to pursue postgraduate study in Syria or abroad, and the relationship of their intentions to future career plans. Personal data, including gender and age, were also gathered. The questionnaire consisted of multiple-choice and Likert-scale items.

Data collection was carried out in the second semester of the 2010-2011 academic year. Students from the fifth year were asked to complete the questionnaire. Estimated time to complete the questionnaire was approximately 10 minutes. The questionnaires were distributed in class during laboratory sessions and retrieved immediately after completion. Participation in this study was voluntary and all participants remained anonymous. Only fully completed questionnaires were included in the study and underwent further analysis.

The data were processed and analyzed by means of the statistical methods available in the Statistical Package for the Social Sciences, Version 17.0 (SPSS Inc, Chicago, IL, USA). The level of significance for all tests was set at a $p < 0.05$. A 4-point Likert scale ranging from low importance (1) to high importance (4) was used to rate factors that influenced students' postgraduate intentions, students' preference concerning areas of postgraduate study, preference to study in Syria or abroad, and preference concerning postgraduate study options available in Syria. A similar 4-point Likert scale was also used to evaluate the students' attitudes toward the influence of pursuing postgraduate studies in Syria or abroad on their personal profile aspects. The chi-square test was used to measure differences in the frequency of responses (categorical data). The Mann-Whitney U and Wilcoxon signed ranks tests were used to find the differences in mean

Table 1. Intentions of Final-Year Syrian Bachelor of Pharmacy Students Upon Graduation

Choice	Total, No. (%)	Male Students, No. (%)	Female Students, No. (%)
Postgraduate study in Syria	43 (16.2)	10 (18.5)	33 (15.6)
Postgraduate study abroad	25 (9.4)	11 (20.4)	14 (6.6)
Work in Syria	115 (43.4)	12 (22.2)	103 (48.8)
Work abroad	15 (5.7)	7 (13.0)	8 (3.8)
Not decided yet	67 (25.3)	14 (25.9)	53 (25.1)

values (ordinal data) in independent and related samples, respectively.

RESULTS

Two hundred sixty-five (out of 380) students completed the questionnaire for an overall response rate of 69.7%. Out of 265 respondents, 54 (20.4%) were male and 211 (79.6%) were female. The respondents' ages ranged from 21 to 28 years, with a mean age of 22.8 ± 0.9; 85% were aged 23 years and under, and only 3% were 25 to 28 years.

The following sections summarize the students' responses to the questionnaire in relation to the following categories: intentions upon graduation, preference of area of postgraduate specialization, preference of place of study (Syria vs. abroad), and pursuit of postgraduate studies in Syria/abroad and its relationship to future prospects.

Approximately half of the students (49.1%) reported that they preferred to stay in Syria and begin work after graduation; while a small percentage planned to travel abroad for work (Table 1). A quarter of the students wanted to pursue postgraduate study (16.2% in Syria and 9.4% abroad), and the remaining quarter (a relatively high percentage) were undecided. Comparison of responses between genders demonstrated significant differences ($p<0.001$), with 33.4 % of male students wanting to travel abroad either for work (13.0%) or study (20.4%), compared to only 10.4% of female students (3.8% for work and 6.6% for study, respectively). In addition, 38.9% of male students vs nearly half of female students (22.2%) were planning to pursue further study after graduation.

Factors influencing students' postgraduation intentions are listed in Table 2. The ranking of these factors based on the calculated means reveals that personal fulfillment comes first as the most influential factor, followed by funding capabilities, convenience, having the desire/opportunity to travel abroad, getting married, parents' desire, and finally, customs and traditions. In relation to intentions upon graduation, male students were significantly more influenced by having the desire/opportunity to travel abroad than were female students ($p<0.001$; Table 2). The order of the factors influencing students' paths, ranked according to the mean value of response, was also different between male and female students. The first 3 influencing factors on students' postgraduation intentions were personal fulfillment, having the desire/opportunity, and funding capabilities for male students; and personal fulfillment, picking the easy/available option, and funding capabilities for female students.

Figure 1 shows the pharmaceutical fields of postgraduate study that are mostly preferred by students. The 3 most-preferred fields were biochemistry and laboratory diagnosis (27.2%), pharmaceutics and pharmaceutical industry (20.0%), and clinical pharmacy (18.9%). Each of the remaining fields was preferred by 10% or less of the students. No significant difference was found between male and female students concerning preferred area of postgraduate study. The factors influencing students' preference regarding areas of study, ranked according to the mean value of responses, were scientific issues,

Table 2. Student Perspectives on Factors Influencing Post-Graduation Intentions Presented as Mean of Total Responses and Responses According to Gender

Factor	Total Responses, Mean (SD)	Responses According to Gender		*P*
		Male Students, Mean (SD)[a]	Female Students, Mean (SD)[a]	
Personal fulfillment	3.4 (0.9)	3.6 (0.7)	3.4 (1.0)	0.09
Funding capabilities	2.6 (1.1)	2.8 (1.1)	2.5 (1.1)	0.10
Picking the easy/available option	2.5 (1.2)	2.4 (1.3)	2.6 (1.1)	0.59
Having the desire/opportunity to travel abroad	2.2 (1.2)	2.9 (1.2)	2.0 (1.2)	<0.001
Getting married	2.1 (1.2)	1.9 (1.2)	2.3 (1.2)	0.08
Parents' desire	2.1 (1.0)	2.2 (1.1)	2.2 (1.0)	0.26
Customs and traditions	1.7 (1.0)	1.7 (0.9)	1.7 (1.0)	0.99

[a] Responses rated on a Likert scale of 1 to 4 on which 1 = low importance; 4 = high importance.

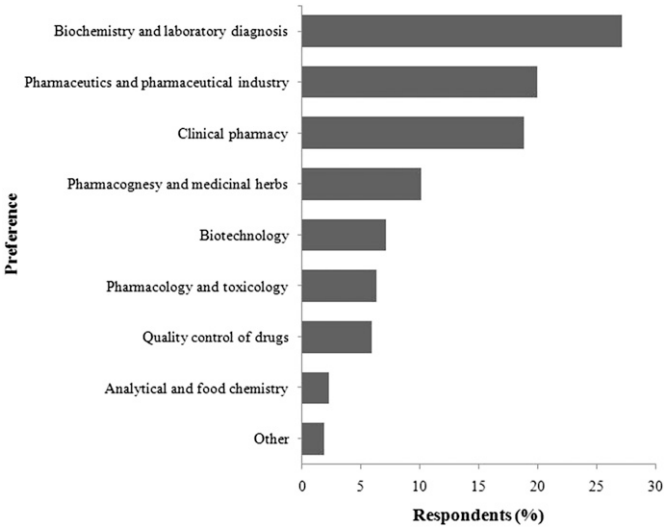

Figure 1. Students' preference concerning areas of postgraduate specialization.

better job opportunities, university grades, and picking the easy/available option (Table 3). Three of the 4 factors were ranked similarly by male and female students; however, female students rated scientific issues significantly higher than male students ($p<0.05$; Table 3).

If given the opportunity to choose between studying in Syria or abroad (Table 4), more students would prefer to pursue postgraduate studies abroad (58. 9% vs. 41.1%). As indicated in Table 4, no significant difference was observed between male and female students' response to this issue ($p=0.948$).

Table 5 presents the factors that influence students' preference to study in Syria or abroad, ranked based on the mean value. According to the total response of the whole sample, these factors were in the following order: funding capabilities, getting married, parents' desire, and customs and traditions. Interestingly, getting married was the most influential factor for students who favored to study in Syria, whereas funding capabilities was rated first by those who preferred to study abroad (Table 5). Students who preferred to study abroad were more influenced by funding capabilities ($p=0.004$) and less influenced by customs and traditions ($p=0.011$) than their peers who preferred to study in Syria. Funding capabilities and customs and traditions were rated first and last, respectively, by both male and female students as factors affecting their preference to study in Syria or abroad (Table 5). However, male students' second- and third-most influential factors were parents' desire and getting married while female students' second- and third-most influential factors were getting married and parents' desire.

Students reported that studying abroad would have a profoundly positive impact on their future career competences and rewards, including improved theoretical knowledge, improved practical experience, and better income. Whereas, students' responses to items related to further study in Syria showed that obtaining a postgraduate degree from a local institute was significantly less favored than acquiring a similar degree abroad ($p<0.001$ for all of the 3 personal profile aspects; Table 6).

When asked about the preferred postgraduate option available in Syria, the majority of students (79.6%) showed interest in academic postgraduate programs, whereas only 16.6% favored the residency program managed by the Ministry of Health, and less than 4% favored non-pharmacy related studies. Students based their preference on factors which were (based on mean rank) scientific issues, better job opportunities, student's university grades, and picking the easy/available option (Table 7). Unlike the former order, the first and second-rated factors were better job opportunities and scientific issues for male students (Table 7). Furthermore, there was a significant difference in male and female students' rating of the impact that scientific issues had on their preference to pursue further study in Syria or abroad ($p<0.05$; Table 7).

DISCUSSION

This study surveyed the attitudes of final-year pharmacy students within the pharmacy school at Damascus University concerning future intentions and further study. The sample included in this survey had a large female-to-male ratio of approximately 4:1. Several surveys of

Table 3. Factors Influencing Students' Preference Concerning Areas of Postgraduate Study

		Responses According to Gender		
Factor	**Total Responses, Mean (SD)[a]**	**Males, Mean (SD)[a]**	**Females, Mean (SD)[a]**	***P***
Scientific issues	3.6 (0.8)	3.3 (0.9)	3.6 (0.7)	0.02
Better job opportunities	3.1 (1.1)	3.2 (1.1)	3.0 (1.0)	0.27
University grades	2.7 (1.1)	2.6 (1.1)	2.8 (1.0)	0.16
Picking the easy/available option	2.0 (1.1)	2.0 (1.2)	2.0 (1.1)	0.64

[a] Responses rated on a Likert scale of 1 to 4 on which 1 = low importance; 4 = high importance.

Table 4. Students' Response Concerning Preferred Place of Postgraduate Study

	Total Respondents, No. (%)	Male Respondents, No. (%)	Female Respondents, No. (%)
Syria	109 (41.1)	22 (40.7)	87 (41.2)
Abroad	156 (58.9)	32 (59.3)	124 (58.8)

pharmacy student population over the last decade have reported substantially higher percentages of female students (up to 66%) than male students.[10-13] Also, a study conducted by Hassell and Eden in Britain indicated that almost twice as many women as men registered as new pharmacists in 2005.[14]

Syrian pharmacy students are relatively young compared to pharmacy students in many other nations because they can enter pharmacy school directly after graduating from high school. For example, in a French study by Perraudin and colleagues, the average age of fifth-year pharmacy students was 25.1 years,[15] whereas their Syrian peers, in the current study, were more than 2 years younger.

At the time of the survey, and even though the students were just a few months away from graduating, a surprising percentage (25%) of students were still undecided about the next step to take after graduation. By analyzing the factors influencing students' intentions upon graduation, we were able to conclude that these students had not yet reached a final decision about which future path would best fulfill their ambitions. One reason for this indecisiveness may have been that students felt such a decision would determine their entire professional future, especially given the many options for practice setting and study from which to choose. Similarly, a study carried out in the United Kingdom by Silverthrone and colleagues found that 43% of third-year students enrolled in the 4-year MPharm degree course, had not come to a final decision about their future careers 1 year prior to graduation.[16]

When choosing their destination upon graduation, Damascus University students appeared to base their decision to a large extent on personal fulfillment. Comparably, other factors seemed to have less influence. In a Middle Eastern society like that of Syria, people's general attitudes, intentions, and decisions are usually heavily impacted by social factors. A substantial percentage of Syrian youths live in their parents' home until marriage. However, in this study, parents' desire and customs and traditions were rated as the 2 least-influencing factors, which may imply that this cohort of students was more independent than expected. Similar to the outcomes of our study, Besier and colleagues reported that job satisfaction and self-fulfillment were the most important factors influencing US pharmacy students to choose their first job.[17] In contrast, a Malaysian report by Hasan and colleagues indicated that the top 3 factors impacting final-year pharmacy students in selecting career destination were salary, benefits, and geographical location.[18]

The higher percentage of male students compared to female students who wanted to travel abroad was associated with a significant difference in the order by which male and female students rated the influence of having the desire and/or opportunity to travel abroad on their postgraduation intentions. This may reflect male students having a more adventurous spirit compared with female students. In a survey performed by Hassell in 2006, 8.8% and 4.2% of 1,360 British pharmacists intended to work abroad on a temporal and permanent basis, respectively. Similar to our study, the survey found that male pharmacists (17.5%) were more likely than female pharmacists (10.8%) to consider work abroad.[19] Additional evidence for male students having a more adventurous spirit is that picking the easy or available option was the second-most influencing factor on female students' postgraduation intentions, whereas it was the fourth most-influencing factor on male students' postgraduation intentions, based on mean rank of student responses. A further comparison between responses of the 2 genders showed that a larger percentage of male students were planning to enroll in graduate school. Gagnon and Cocolas found that career opportunities, intellectual satisfaction, and more challenging work are important factors that motivate pharmacy students to pursue graduate study.[20] Getting a high-income job can be of particular

Table 5. Factors Influencing Syrian Pharmacy Students' Preference Concerning Favored Place to Pursue Further Study[a]

	Total, Mean (SD)	Syria, Mean (SD)	Preference Abroad, Mean (SD)	*P*	Male Respondents, Mean (SD)	Female Respondents, Mean (SD)	*P*
Funding capabilities	2.6 (1.2)	2.4 (1.2)	2.8 (1.1)	0.004	2.8 (1.2)	2.6 (1.2)	0.20
Getting married	2.4 (1.2)	2.6 (1.2)	2.3 (1.2)	0.13	2.2 (1.3)	2.5 (1.2)	0.18
Customs and traditions	2.4 (1.1)	2.3 (1.2)	1.9 (1.0)	0.011	1.9 (1.1)	2.1 (1.1)	0.31
Parents' desire	2.0 (1.2)	2.4 (1.2)	2.3 (1.1)	0.65	2.3 (1.1)	2.4 (1.2)	0.56

[a] Results are presented as mean of total responses and responses according to preference and gender. Responses rated on a Likert scale of 1 to 4 on which 1 = low importance; 4 = high importance

Table 6. Pharmacy Students' Attitudes Concerning the Potential Impact of Obtaining a Postgraduate Degree in Syria or Abroad on Their Personal Profile Aspects

Aspect	In Syria, Mean (SD)[a]	Abroad, Mean (SD)[a]	*P*
Improved theoretical knowledge	2.7 (1.0)	3.6 (0.9)	<0.001
Improved practical experience	2.3 (1.0)	3.6 (0.8)	<0.001
Better income	2.4 (1.0)	3.5 (0.9)	<0.001

[a] Responses rated on a Likert scale of 1 to 4 on which 1 = low importance; 4 = high importance.

importance to male students living in traditional societies where men are expected to take responsibility for their family's financial issues.

An obvious interest in postgraduate study is evident with about a quarter of the Syrian students having previous plans to pursue further study upon graduation, unlike the situation in many other countries, such as Britain,[3,4] Australia,[5] and the United States,[2] where the vast majority of graduates prefer to go to work immediately after graduation. While there are fewer incentives for students in these countries to pursue further study,[6,7] there are many factors that encourage Syrian graduates to undertake graduate school. Among these are the dramatic increase in number of pharmacy graduates, many of whom are seeking new practice settings with better income, such as those in academic settings. For example, the newly established private pharmacy schools offer an excellent salary package to highly qualified academic staff members. Sixteen percent of the students in this study intended to travel abroad, either for study or work. Out of the 25 students planning to pursue study abroad, 24 reported that personal fulfillment was an important factor in making their plans. The second most influencing factor was having the desire/opportunity to travel abroad; with a response mean value of 3.4. Whereas, for those who wanted to work abroad, personal fulfillment and having the desire/opportunity to travel abroad were equally important influencing factors, with a mean rating of 3.4 for both. A study by Patil surveyed the preferences of final-year BPharm students at 16 colleges and schools of pharmacy in India, for a place of work and found that going abroad was the students' first preference.[21]

Concerning the most preferred area of postgraduate study, biochemistry and laboratory diagnosis was selected by more than a quarter of the students. This preference was not unexpected because, according to Syrian regulations, a degree in laboratory diagnosis and related subjects entitles the holder to open a private laboratory for disease diagnosis purposes, whereas a degree in any of the other pharmaceutical specializations is not advantageous in terms of obtaining a license for a new area of practice. Additionally, a fifth of the students preferred to pursue postgraduate studies in pharmaceutics and the pharmaceutical industry, and a similar percentage showed an interest in clinical pharmacy. The remarkable interest in the pharmaceutical industry can be related to the considerable progress in the Syrian pharmaceutical industry during the last 2 decades, which witnessed the establishment of more than 60 pharmaceutical companies; while only 2 government-owned pharmaceutical companies existed before 1990. Clinical pharmacy, which is not yet properly established as a profession in the Syrian health system, seems to attract a substantial number of students. This may be due to the bright image of clinical pharmacy among Syrian students, who regard it as the emerging practice of the future. Generally, students appeared to be interested, to a large extent, in the scientific side of the area of study they prefer, with female students being significantly more influenced by this factor than male students.

Given the relatively limited resources that Syrian universities have, the small number of students admitted to local graduate programs, and students' beliefs that postgraduate studies abroad would improve their theoretical knowledge and practical experience and help them to find well-paid jobs, not surprisingly, a remarkable percentage of students prefer to carry out their postgraduate studies abroad. However, funding capabilities appear to be a critical factor that could prevent students, who cannot afford the costs of studying aboard, from considering such

Table 7. Factors Influencing Syrian Pharmacy Students' Preference for Academic Programs Over Residency Programs

Factor[a]	Total, Mean (SD)[b]	Male Respondents, Mean (SD)[b]	Female Respondents, Mean (SD)[b]	*P*
Scientific issues	3.3 (0.9)	3.2 (1.0)	3.4 (0.8)	0.02
Better job opportunities	3.3 (0.9)	3.4 (0.9)	3.2 (0.9)	0.27
Student's university grades	2.9 (1.0)	2.8 (1.0)	3.0 (1.0)	0.16
Picking the easy/available option	2.4 (1.1)	2.4 (1.1)	2.4 (1.2)	0.64

[a] Factors were reordered based on the highest mean value.
[b] Responses rated on a Likert scale of 1 to 4 on which 1 = low importance; 4 = high importance.

an option. This may be particularly true for graduates of public universities, such as Damascus University, who pay annual tuition fees of as little as $30. However, the situation may be different for graduates of private Syrian universities who pay up to $8,000 in annual tuition fees. Similarly, Davey and colleagues reported that the relative costs of study programs were a major influence on the postgraduate education decisions of Australian pharmacy students.[22]

Getting married may make settling in a new country more challenging, which may justify its significant impact on students' decisions to stay in Syria or travel abroad for the purpose of study. Because of the cultural differences and barriers encountered when settling in new societies, some students may not have the desire to travel abroad for study, especially to western countries. This was evident by the significant difference in responses concerning the influence of customs and traditions between students who preferred to study in Syria and those who preferred to study abroad.

Although the present study was carried out in only 1 of the 12 schools of pharmacy in Syria, the findings may be an indication of students' intentions and attitudes in other schools, too. A much higher number of female students participated in the survey, which suggests that the results may be biased toward female students' opinions. Furthermore, comparing responses of a relatively small group of male students with 4-times as many female students may also limit the findings of this study. However, the results can still be considered acceptable because the female-to-male ratio of the study sample was similar to the average gender distribution across all of the 5-year classes of the BPharm program at Damascus University. In addition, female students generally outnumber their male colleagues as confirmed by several surveys of pharmacy student population in the United States.[10-13] Many of the survey items dealt with expectations of future events and perceptions of future environments; thus, follow-up investigations several years after graduation would be beneficial to find out whether anticipated findings match actual findings.

The development of high-quality graduate programs and attracting graduates to apply to these programs is extremely important for several reasons. A considerable proportion of research activities worldwide are carried out by postgraduate students. In addition, new graduates are at an age of high productivity and recruiting them into research would be of great value to the advancement of the profession. Furthermore, highly qualified graduates have the potential to effectively contribute to the advancement of science and the development of nations. For these reasons, it is time for universities and higher education authorities to establish a strategic plan and provide all of the necessary resources to develop new graduate programs, raise the quality of existing programs to international standards, and increase the admission capacity of each program, especially given predictions that the number of pharmacy graduates will continue to increase.

CONCLUSIONS

While universities and research centers in many western countries have few domestic pharmacy graduates enrolled in their postgraduate programs, a significant percentage of Syrian final-year pharmacy students have intentions and incentives to pursue further study. Syrian graduate programs do not appear to satisfy students' ambitions nor have the capacity to accommodate the growing demand resulting from the rapid increase in the number of pharmacy graduates. Consequently, a majority of students prefer to pursue their postgraduate study abroad. However, the unaffordable costs of studying and living abroad present a major obstacle in achieving their goal.

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