

Students' Perceptions of Pharmacy as a Specialization and their Future Career, a Cross Sectional Study of Final Year Pharmacy Students in Jordan

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ABSTRACT

This study aimed to establish a baseline understanding of the career aspirations, motivations and expectations of students within undergraduate pharmacy education in Jordan and to examine students' incentives to select pharmacy and how they feel about their choice as they are approaching graduation.

A draft survey instrument was designed to collect the required information. The questionnaire was administered to final year pharmacy students (B.Sc. Pharmacy and PharmD) at the University of Jordan and the Jordan University of science and Technology. The questionnaire was administered at the end of all lectures at both universities. Following data collection, responses were coded and entered into a customized database in SPSS, version 17, for statistical analyses. Chi-square and Fisher exact tests were used to test for significant differences between groups

A total of 240 final-year pharmacy students took part in the present study. The majority of respondents (n=147, 61.3%) indicated that pharmacy was not their first choice of study at the time of application to universities. More than half (n=138, 57.5%) the respondents claimed that they were optimistic regarding the future of pharmacy as a profession. When asked to rank pharmacy among different suggested professions, the majority of respondents (n=95, 39.58%) ranked pharmacy second after medicine and before dentistry. The majority of respondents (n=202, 84.17%) thought they had a positive self image.

Students studying pharmacy seem to have optimistic aspirations of their future career and a positive image. Further qualitative research is needed to gain more in-depth understanding of this issue and to create a realistic connection between market needs and pharmacy education outputs.

Keywords: Future Career, Jordan, Pharmacy Students, Pharmacy Education, School of Pharmacy, Self Image.

1. INTRODUCTION

The profession of pharmacy and pharmacy education in Jordan has seen an enormous advancement over the

past few decades.¹ During the early eighties only two pharmacy schools (public) existed, while today ten (public plus private) schools of pharmacy are present.² In addition, career options for pharmacy graduates has evolved from just a few choices; mostly community pharmacies and governmental jobs, to the field of clinical pharmacy as PharmD programs being established, and

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role of pharmacists in the clinical setting being recognized. Also the number of students seeking and being accepted into pharmacy programs has increased tremendously²; this ought to have an influence on the profession.

As more students, specially females are opting for pharmacy schools, it is important to find out their reasons for this choice, and their expectations for their future and the future of the profession, as well as their self image of the profession of pharmacy (Self image: the way an individual view's him/her self regarding and aspect of their life). Surfing the literature revealed very few studies that were conducted to explore students' motives to choose pharmacy, or their career choices after graduation³⁻⁶. Desire to help others, more career opportunities and providing an entry-level doctorate were cited as motives for pursuing pharmacy.⁷ A study in Malaysia exploring career preferences of fourth-year bachelor of pharmacy (BPharm) students, showed interest in pharmacy as the reason for undertaking pharmacy degree studies among 35% of students; while 40.4% of public and 19.8% of private university respondents stated that they would enter a nonpharmacy-related career upon graduation if given the choice. Students at public universities first career choice after graduation was hospital pharmacy practice, whereas private university students were most interested in community pharmacy. Income, benefits, and geographical location ranked as the most significant extrinsic factors influencing selection of a career goal by these students.⁶ A study that looked at factors effecting career goals of pharmacy students⁴ demonstrated that overall work environment is a highly important job consideration in a pharmacy career. An appropriate benefits package (eg, vacation time, health insurance policies, and bonuses) was also a significant factor for pharmacy job consideration, as well as flexible work schedule. A report published by the Royal Pharmaceutical Society of Great Britain based on a research that examined pharmacy students' expectations and career choices; most important extrinsic influence factor was employment opportunities, while pharmacy

work experience, parents and family were the most important personal factors influencing the decision to study pharmacy.³ In the previous study, students' image of their future career was that of being proud, females more so than males, only 5% regretted going into pharmacy. The study also showed gender differences in terms of full time versus part time work as well as taking time from work for family issues; females three to four times more than males.

The aim of the present study was to establish a baseline understanding of the career aspirations (Hopes for future career), motivations (the goal or object of a person's actions) and expectations of students within undergraduate pharmacy education in Jordan. Also to examine students' incentives to select pharmacy and how they feel about their choice as they are approaching graduation.

METHODS

After an extensive literature review, a draft survey instrument was designed to collect the required information. The draft questionnaire was examined for fitness for purpose and face validity in two focus group involving ten postgraduate pharmacy students at two public universities: Jordan University of Science and Technology and the University of Jordan which are the only public universities that grant a pharmacy (BSs Pharmacy, PharmD) degree in Jordan. Following this review, the final version of questionnaire was piloted in a sample of 30 final year pharmacy students at both universities prior to moving on to main survey. There was no need to amend the survey after the pilot study.

The questionnaire was administered to final year pharmacy students (B.Sc. Pharmacy and PharmD) at the two public universities: The questionnaire was administered at the end of all lectures at both universities during December 2011/January 2012. In order to avoid duplication, students who had completed the questionnaire in a previous lecture were asked to leave the room. Complete questionnaire were collected at the

time of administration allowing a 100% response rate of those respondents who agreed to take part in the study. Both B.Sc. Pharmacy students and PharmD students are referred to as pharmacy students throughout this study.

The questionnaire consisted of 20 questions and was divided into four sections; the first section (Questions 1 and 2) focused on the reasons behind choosing pharmacy as a specialty of study, while section two (questions 3 to 9) aimed at exploring respondent's perceptions of their future career. The third section of the questionnaire (questions 10 to 15) explored respondents' views about pharmacy as a profession and their self image as pharmacy students. The fourth section of the questionnaire (questions 16 to 20) collected respondents' demographics (to allow examination of variability in responses according to participant characteristic).

Following data collection, responses were coded and entered into a customized database in SPSS, version 17, for statistical analyses. Chi-square and Fisher exact tests were used to test for significant differences between groups ($P < 0.05$). In a few cases, participants failed to answer every question, resulting in missing data. Missing data were not estimated or used in analyses.

RESULTS

Demographics:

A total of 240 final-year pharmacy students took part in the present study. Of the latter, 51 were male (21.25%) and 189 were female (78.75%); 196 (81.67%) were local students and 77 (18.33%) were international students. Most students were from Jordan University of Science and Technology $n=166$ (69.2%) and only 74 (30.8%) students were from the University of Jordan. Of the total sample 116 (48.3%) were PharmD students while 123 (51.7%) were B.Sc. Pharmacy Students.

Reasons for Studying Pharmacy

Surprisingly, the majority of respondents ($n=147$, 61.3%) indicated that pharmacy was not their first choice of study at the time of application to universities. Larger number of B.Sc. Pharmacy Students ($n=55$, 45.83%) had reported that pharmacy was their first choice of study compared to PharmD students ($n=35$, 30.17%; $p<0.05$). More female students ($n=72$, 62.07%) reported that pharmacy was their first choice of study when compared to male students ($n=18$, 36.30%; $p<0.05$). Respondents claimed various reasons for studying pharmacy; those are displayed in Table 1.

Table 1. Respondent's reasons for choosing to study pharmacy (n=240)

Reason for studying pharmacy:	n	Percentage
Because pharmacists are key members of health care team.	99	41.3%
Because pharmacists are socially respected.	99	41.3%
Because of the financial benefits of pharmacy	90	37.5%
Pharmacy was the only available choice for you	56	23.3%
You want to helping others, and pharmacy is a service oriented profession	107	44.6%
You want to find a cure for diseases	61	25.5%
Your dream was to be a pharmacist	33	13.8%
Pharmacy assures you many career opportunities	74	30.8%
Because my family wants me to be a pharmacist (family pressures)	96	40%

Perceptions of the future pharmacy career:

More than half (n=138, 57.5%) the respondents claimed that they were optimistic regarding the future of pharmacy as a profession. When asked about their perceptions of their future career the majority of respondents (n=205, 85.4%) indicated that they would like to work closely with other healthcare professionals. This was obviously higher among PharmD students as 108 (93.10%) of the latter reported that they would like to work more closely with other healthcare professionals when compared to B.Sc. Pharmacy students (n=95, 76.61%; p<0.05).

When asked about their perceptions about the financial situation of their career in the future, 152 (63.3%) respondents indicated that they expect their career as a pharmacist to be financially satisfying with the majority expecting a salary between 500-999 Jordanian Dinar (JOD; n=112, 46.7%); other expectations were as follows: 100-249 JOD (n=9, 3.75%), 250-499 JOD (n=78, 32.5%), and > 1000 JOD (n=41, 17.1%). Respondents who chose to work in the pharmaceutical marketing field expected higher salaries (85%; >1000

JOD) when compared to respondents who chose to work in other fields of pharmacy careers (P<0.05).

Regarding their perception of their future career, working as a clinical pharmacist was the most chosen career path (n=67, 27.9%). Other results are displayed in Figure 1. Comparing different groups of respondents yielded statistically significant difference in choosing the respondent's future career. For example more PharmD students wanted to work as clinical pharmacists while more B.Sc. students wanted to work in a community pharmacy (p<0.05). The complete results are displayed in Table 2.

Regarding their chosen future career, 98 (40.8%) respondents indicated that it would be a permanent job (they want to build a lifelong career in this field), while 36 (15.0%) respondents indicated that it would be a temporary job (they want to work for sometime then they have other career plans), and 107 (44.6%) respondents indicated that they have not decided yet if their chosen career in the present study would be either permanent or temporary.

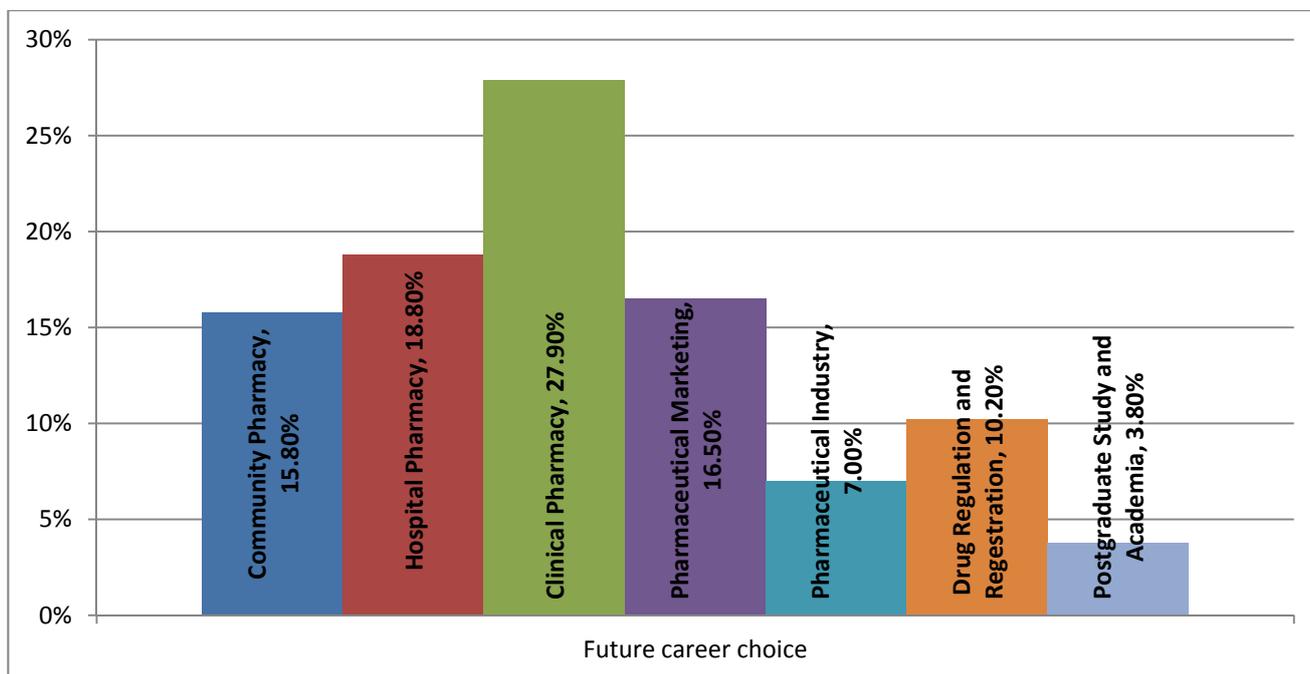


Figure 1: Respondents' choices for their future career

Table 2. Respondents' choices of their future career in relation to their course of study (B.Sc. Pharmacy and PharmD)

	PharmD N (%)	Pharmacy N (%)	Significance
Community Pharmacy	5(4.50)	35 (28.23)	P<0.001
Hospital Pharmacy	12 (10.34)	36 (29.03)	P<0.001
Clinical Pharmacy	96 (82.76)	22 (17.74)	P<0.001
Pharmaceutical marketing	6 (5.17)	27 (21.77)	P<0.001
Pharmaceutical Industry	2 (1.72)	19 (15.32)	P= 0.002
Drug Regulation and Registration	6(5.17)	21 (16.93)	P=0.013
Postgraduate Study and Academia	19 (16.38)	21 (16.93)	P=0.750
Medical Insurance	0 (0)	12 (9.68)	P=0.003

Self image to pharmacy:

When asked to rank pharmacy among different suggested professions, more than one third of respondents

(n=95, 39.58%) ranked pharmacy second after medicine and before dentistry. Ranking of various professions according to pharmacy students is displayed in Table 3.

Table 3. Respondents' ranking of different professions including pharmacy

Profession	Rank	Number of respondents giving rank	Percentage
Medicine	1	153	63.75%
Pharmacy	2	95	39.58%
Dentistry	3	65	27.08%
Engineering	4	68	28.33%
Teaching	5	95	39.58%
Nursing	6	104	50.98%

Table 4. Respondents' different ranks of pharmacy among a list of suggested professions

Rank	Number of respondents giving rank	Percentage
1	34	14.17%
2	95	39.58%
3	68	28.33%
4	29	12.08%
5	10	4.17%
6	4	1.67%

Furthermore, only 34 respondents (14.17%) ranked pharmacy as first among different suggested professions.

Respondents' ranking of pharmacy is displayed in Table 4. This ranking was not influenced by demographic

parameters including B.Sc. Pharmacy vs PharmD and students studying at the Jordan University of Science and Technology vs The University of Jordan ($P > 0.05$).

When asked if they would choose to study pharmacy again, considering they had a choice to change their specialty, only 114 (47.55) respondents indicated that they will choose to study pharmacy again, while 76 (31.67%) respondents indicated that they would prefer to choose another specialty, and 44 (18.33%) were neutral regarding choosing pharmacy again or another different specialty. The latter was significantly more obvious among B.Sc. Pharmacy students ($n=77$, 62.1%) when compared with PharmD students ($n=44$, 37.93%; $P < 0.05$). Furthermore, 99 (41.25%) respondents indicated that they would advice other students to study pharmacy, while 52 (21.67%) indicated that they would not advice other students to study pharmacy, and 83 (34.98%) were neutral regarding advising other students to study pharmacy. Again more B.Sc. Pharmacy students ($n=67$, 54.03%) indicated that they would advice other students to study pharmacy when compared to PharmD students ($n=36$, 31.03; $P < 0.05$)

The majority of respondent ($n=217$, 90.4%) though that they would be active social members after graduation, however 107(44%) respondents thought that the Jordanian society did not have a positive image towards pharmacists.

Regarding their role in treating patients, 184 (76.67%) respondents thought that pharmacists have a major role in the healthcare process, 114 (60.0%) thought that pharmacists were the best to know about drug therapies, 180 (75.0%) respondents thought that pharmacists had a great role in minimizing drug related problems, and 120 (50.0%) respondents thought that patients believed that pharmacists played an important role in the healthcare process. B.Sc. Pharmacy students reported higher rates of confidence regarding their role as healthcare professionals when compared to PharmD students ($p < 0.05$). The results of the latter comparison are displayed in Table 5. Regardless of the latter, the majority of respondents ($n=206$, 85.83%) thought that pharmacy students need more training and practice before graduating.

Table 5. Respondents' perception about their role as healthcare professionals (B.Sc. Pharmacy and PharmD)

	PharmD N (%)	Pharmacy N (%)	Significance
Pharmacists have a major role in the healthcare process	81 (69.82)	109 (87.90)	P=0.002
Pharmacists are the best to know about drug therapies	48 (41.38)	72 (58.06)	P=0.049
Pharmacists have a great role in minimizing drug related problems	89 (76.72)	98 (79.03)	P=0.094
Patients believe that pharmacists play an important role in the healthcare process	56 (48.28)	71 (57.26)	P=0.164
The Jordanian society have a positive image towards pharmacists	26 (22.41)	51 (43.22)	P=0.21

Finally, and when asked about their self image as pharmacy students the majority of respondents ($n=202$, 84.17%) had a positive self image, a minority of respondents ($n= 21$, 8.75%) had a negative self image, and only 17 (7.08%) respondents were neutral regarding their self image. Self image was simply measured by asking respondents if the thought they had a positive,

negative, or neutral self image towards pharmacy. Respondents self image as pharmacy students was not influenced by demographic parameters including B.Sc. Pharmacy vs PharmD and students studying at the Jordan University of Science and Technology vs The University of Jordan ($P > 0.05$).

DISCUSSION

Previous studies in the Middle East area have explored pharmacy students' perspectives of the curriculum and future careers.^{1,8-10,13} To the best of our knowledge, this is the first study in the Arab World and the Middle East to explore pharmacy students' motives for studying pharmacy (B.Sc. Pharmacy and PharmD) and their aspirations towards their future career along with their self image toward pharmacy.

The majority of respondents indicated that majoring in pharmacy was not choice number one form them at the time of college applications., this was similar to the findings of a previous study that took place in Jordan and explored final year pharmacy students' (n=308) experiences and expectations of pharmacy education and curriculum; were the majority of respondents (55.6% vs 61.35% in the present study) indicated that pharmacy was not their first choice when they were deciding on which degree course to study.¹¹ The later study indicates that the majority of students who enrolled in pharmacy colleges did not plan to study pharmacy which may have serious implications on their seriousness during, and their commitment toward their studies. This may also have more serious implications on the practice of pharmacy in the future. Even in more developed countries, a sizable portion of students studying pharmacy programs indicated that pharmacy was not their first choice. For instance, a report published by the Royal Pharmacy Society of Great Britain indicates that almost 25% of pharmacy students in the UK did not select pharmacy as their first pick.³ Previous studies indicated that a lot of students who study pharmacy choose Pharmacy as a major because its resemblance to medicine particularly those students whom high school GPA did not allow them the chance to enroll in medical colleges.¹¹ This may have drastic effects on the practice of pharmacy in the future, especially with the new patient-centered role of the pharmacist and with implementing the aspects of pharmaceutical care in practice; as one drawback of the current developments in pharmacy practice is that pharmacists cross their professional boundaries and try to

practice pharmacy in a way similar to medicine.¹² International research indicates that almost one third of pharmacy students do not receive any profession or career related advice before commencing their university studies, which may suggest that many students choose to study pharmacy only because it's a medical related profession and without having the basic understanding of it as a profession.¹³ It is very important for pharmacy students to understand that pharmacy is a service profession,¹⁴ and they need to have a true motive to assist patients seeking their help genuinely and unconditionally, and this is reliant on believing in their abilities and knowledge and not in trying to imitate other medical professions.¹⁵

Regarding the reasons for studying pharmacy, the results of the present study were different than those published in previous studies. A study that sought student's views towards improving pharmacy education in Jordan indicated that students have chosen pharmacy because they liked pharmacy or related subjects (31.2%), because they had no other options due to university entrance requirements (19.9%), because they wanted to study a specialty that is close to medicine (19.2%), because of family related purposes (11.7%), because pharmacy unlocks versatile career opportunities, because pharmacy is most suitable for females (3.8%), and because of the social status of a pharmacist (3%).¹¹ In contrast the present study indicated that students choose to study pharmacy because they thought that pharmacy is a service oriented profession and they want to help others (44.6%), because pharmacists are socially respected (41.35), because of the financial benefits of pharmacy (37.5%), and because of family pressure on them to be a pharmacist (40.0%), because pharmacy assures them many career opportunities (30.8%), because pharmacy was the only available choice for them (23.3%). It is obvious that respondents in the present study have different views about the future of pharmacy concerning its future financial benefits and social status making pharmacy an attractive choice of study. In Jordan pharmacy has witnessed many developments in the last five years; the basic salary for the pharmacists was raised by the Jordan Pharmacy Association, the PharmD program

was accredited by the Ministry of Health, chain pharmacies began to spread, in addition the curricula in many pharmacy schools evolved and started to introduce pharmacy practice courses. Pharmacy in Jordan is developing, and the profession is gaining an international status, the latter results come in context with a study carried out in St. John's University in the USA indicating six motivational factors that influence student's choice of pharmacy as a course of study; those were to have many career opportunities, helping others, wanting to find a cure for chronic disease, and perceiving a better chance of being accepted into pharmacy school than medical school.

A further difference between the present study and previous literature is the introduction of another factor affecting choice of pharmacy by students that is family-related issues. Students claim to study pharmacy due to family related reasons, the latter may be family pressure on females to study pharmacy as in Jordan and many Arabic country it is socially preferred that female students study pharmacy if they get the chance as pharmacy is a profession suitable for females.¹⁶ Over more, families may put pressures on their children to study pharmacy if they own a pharmacy business, as it is well known that pharmacy businesses move through different generations of the family and grow with time.¹⁷

Many responses regarding students' perceptions of their future career indicated that the practice of pharmacy may encounter positive developments in Jordan. The latter may seem to be a reflection of the development of the pharmacy curricula in public universities in Jordan to be more comprehensive, and to be more patient centered and to include more pharmacy care topics.¹⁵ The vast majority of respondents indicated that they would like to work closely with other healthcare professionals which may lead to an optimal practice environment in the future based on multidisciplinary healthcare collaboration towards the well being of patients.¹⁸ the later may also be a step forward to enhance the relation between various healthcare professionals especially doctors and pharmacists as this relation had encountered some drawbacks in the past.¹⁴ Not surprisingly, this willingness to work with other healthcare professionals was

significantly higher among PharmD students when compared to B.Sc. Pharmacy students as the description of their job involves more collaboration with other healthcare professionals.¹⁹

Respondents expected moderate to high salaries for their future careers, this may be unrealistic when compared to the average monthly income in Jordan²⁰, the minimum salary approved by the Jordan Pharmaceutical Association (200 JOD=300\$), and the actual salaries pharmacists earn working in various sectors. It may be well noted that pharmacy graduates who work as medical representatives get better salaries (500-1200 JOD) when compared to others who work in hospitals or community pharmacies⁸, this may explain why respondents who chose to work in the pharmaceutical marketing field expected higher salaries when compared to respondents who chose to work in another field of pharmacy. Such expectations may frustrate graduates and have negative influences on pharmacy practice, as a salary lower than the expected may have serious implications on the job satisfaction of an employee and his/her productivity.

A remarkable outcome of this study is that respondents ranked pharmacy second after medicine. Baring in mind that respondents are final year pharmacy students the latter classification of careers maybe a result of social views on medicine and doctors, as medicine is still considered the first choice for students who complete their secondary studies, besides in the Jordanian society an individual is considered privileged to study medicine and work as a doctor. This classical and social thought would of course influence pharmacy students who are part of the society especially that the majority of respondents indicated that pharmacy was not their first choice of study when they graduated from secondary school. In Jordan and similarly in many countries around the world medicine is still the most preferable choice of study for students entering universities, and practicing medicine has it excellent financial outcome on those who advance in their specialty and career. In Jordan, pharmacist may have less chances of career development and the market for pharmacists seems limited when compared to that of doctors.

The majority of respondents indicated that they would like to work as clinical pharmacists. This is not surprising, as with the recent advancements in pharmacy education and practice, pharmacists tend to adopt a more patient centered culture that is reflected more in the profession of clinical pharmacy²¹ the latter as well may be an obvious compensation for students trying to practice pharmacy in a way similar to that of medicine as they did not have the chance to go to medical school.¹¹

Finally, the majority of respondents thought they had a positive self image towards pharmacy. This may seem conflicting with other outcomes of this study; however it tells that pharmacy graduates have a positive view of the future of the pharmacy career. Recent developments in the pharmacy curricula in Jordanian universities, moving towards more patient-centered care, the change in the pharmaceutical market by the introduction of professional chain pharmacy firms, and with recent adoption of clinical pharmacy departments by the ministry of health, pharmacy in Jordan seems to be advancing quickly and students studying pharmacy may have better career opportunities in the future. This may have influenced the respondents' self image towards pharmacy.

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CONCLUSION

The present study sheds the light on the rationales behind students' choice of pharmacy and explores their perceptions of their future career. Despite not being their first choice of interest when applying to study at their universities, students studying pharmacy seem to have optimistic aspirations of their future career and a positive image. Further qualitative research is needed to gain more in-depth understanding of this issue and to create a realistic connection between market needs and pharmacy education outputs. Students should be made aware of pharmacy and their career chances when applying to the faculties of pharmacy and before the commencement of their study.

LIMITATIONS

Regardless of being anonymous, some parts of the questionnaire required self opinion leading to an opportunity for respondents to give false answers. Furthermore, students in Jordan are not regularly exposed to evaluative questionnaires and their first language is not English while the questionnaire was written in English.

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انطباعات الطلبة عن الصيدلة كتخصص ومهنة مستقبلية، دراسة مقطعية لطلبة السنة الأخيرة لتخصص الصيدلة في الأردن

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ملخص

تهدف هذه الدراسة إلى خلق فهم للأسباب التي تدفع الطلاب لدراسة تخصص الصيدلة واستكشاف مخططاتهم المستقبلية بما يخص خياراتهم الوظيفية. قام الباحثون بتوزيع استبانة معدة مسبقاً لجمع المعلومات من طلاب السنة الأخيرة في تخصصي الصيدلة ودكتور صيدلة وتم جمع عينة من 240 طالباً من كليتي الصيدلة في كل من الجامعة الأردنية وجامعة العلوم والتكنولوجيا الأردنية.

خلصت الدراسة إلى أن معظم دارسي الصيدلة لم يختاروا هذا التخصص كخيار أول عند التقديم للدراسة الجامعية إلا أن أكثر من نصف المشاركين في الدراسة كانوا متفائلين بمستقبل مهنة الصيدلة. وعبر معظم المشاركين أن لديهم نظرة إيجابية عن مهنة الصيدلة.

الكلمات الدالة: مهنة مستقبلية، دراسة الصيدلة، الأردن.