

Factors influencing career choice among undergraduate pharmacy students at a private university in Jordan

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Abstract

Background: Studies have explored potential reasons given by students in selection of the pharmacy profession as a career. These include the determination to help people, desire to be involved in the healthcare system and an interest in science subjects. There is a dearth of literature pertaining to the subject in Jordanian pharmacy students.

Aim: The study explored students' perceived reasons for selecting pharmacy as a career, factors affecting career preferences and the role of university in decision-making regarding career.

Method: A cross-sectional study was conducted in randomly selected undergraduate students studying the pharmacy degree programme at the Applied Science Private University, Amman, Jordan. The study used a specially designed and validated questionnaire that documented the reasons given by students for choosing pharmacy degree as a major, most preferred career option, and factors affecting students' career preference. Data were analysed using SPSS.

Results: A total of 250 students responded to the survey. The mean age of respondents was 21.96±5.38 years and 68.8% were females. Students mentioned family support (60%) and willingness to work in reputable profession (83.5%) as reasons to study pharmacy. Female students (30.8%) preferred to work in academia and hospital ($p=0.043$) while male students preferred working as medical sales representative (16.7%) and in the pharmaceutical industry (14.1%). Almost 50% agreed that the university provided sufficient information and work experience that influenced their career selection.

Conclusion: Several factors influenced students' choice to study pharmacy and select a career. Students became more decisive about their career over the five-year curriculum. Students mentioned university education in defining their career selection. Gender was a determinant of students' pharmacy career preferences.

Keywords: Career Choice, Jordan, Pharmacy, Undergraduate

Introduction

The pharmacy profession has transformed itself from a product-focused to a patient-focused and service-driven profession (Cipolle, Strand & Morley, 2012; Hanna, Askin & Hall, 2016). Identifying reasons behind choosing pharmacy has been investigated by a number of international studies (Harland, Pitt & Saunders, 2005; Savage, Beall & Woolley, 2009; Keshishian, Brocavich, Boone & Pal, 2010; Sadia Shakeel, 2013; Ubaka, Ochie & Adibe, 2013; Gebretekle *et al.*, 2014; Sharif & Sharif, 2014; Abduelkarem & Hamrouni, 2016). Studies have explored potential reasons given by students in selection of the pharmacy profession as a career. According to Henna *et al.* (2016) studying science at school, willingness to improve people's health, and a desire to serve in healthcare were the most common reasons for choosing the pharmacy profession. The desire to be involved in the healthcare sector and the satisfaction in

studying science-based courses were major determinants (Davey, M. Evans & Stupans, 2006; Keshishian *et al.*, 2010). A study in United Arab Emirates identified students' interest in science subjects and a desire to help people as determinants (Sharif & Sharif, 2014). Similar findings were reported in Ethiopia (G Beedemariam, 2014) and the United Kingdom (Jesson, Langley & Wilson, 2015). In addition, a study in Australia reported that the desire of being a part of the healthcare system was one of the most common determinants of choosing pharmacy education (Davey *et al.*, 2006). Gender was also reported as a factor that affected students' choice of pharmacy (Keshishian, 2010).

Selecting a career domain within the pharmacy profession is not straightforward, as there are many factors that affect decision-making. These include family influence, job opportunities, personal interest, striving for a highly paid career domain, gender, determination to

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graduate in medicine and allied health sciences (Keshishian, 2010; Sharif & Sharif, 2014; Abduelkarem & Hamrouni, 2016). Nevertheless, these choices may sometimes be made without full knowledge of the pharmacy profession as well as implications of selecting it as a career (Keshishian, 2010). In view of the role of the pharmacist in society at present, it is important for pharmacy programmes to identify factors influencing students' motivation for choosing pharmacy as their academic major (Keshishian *et al.*, 2010).

Students may use different information sources and a variety of experiences to be able to make decisions about their careers (Silverthorne *et al.*, 2003). For instance, university education may help students to identify a suitable career path by exposing them to different pharmacy work settings *i.e.*, community pharmacy, hospital pharmacy and pharmaceutical industry, from an early stage in their pharmacy study years (Silverthorne *et al.*, 2003; Qais Alefan, 2016). In Jordan, there are 15 universities offering a five-year degree of Bachelor of Science (B.Sc.) in Pharmacy. In addition, two public pharmacy schools offer a six year Doctor of Pharmacy (Pharm.D.) degree (Nazer & Tuffaha, 2017). Hence, pharmacy schools would benefit from offering career information to students by organising a career day or alumni meeting with undergraduate students ((Silverthorne *et al.*, 2003). This can be achieved *via* both practicing pharmacists as well as taught materials ((Silverthorne *et al.*, 2003; Qais Alefan, 2016). Hence, it is important that students receive appropriate experience and adequate information to enable them to make an informed decision about their career choice ((Silverthorne *et al.*, 2003).

This study was conducted in pharmacy students studying in a private university in Jordan, and aimed to explore students' perceived reasons for choosing pharmacy as a career, factors affecting post-graduation career preferences, and the role of the university in students' decision-making regarding their career.

Methods

Study design, setting and population

This was a cross-sectional study conducted over four months during September – December 2017. It involved randomly selected undergraduate pharmacy students studying in first year to fifth year in a five-year pharmacy degree programme at Applied Science Private University in Amman, Jordan. Students were randomly selected from a list of all undergraduate pharmacy students using college enrolment records. A list of students' university identification number was used to randomly allocate the students who would be approached to participate in the study, using the computer-generated randomisation programme (www.randomizer.org). Students were then contacted by the research team and invited to complete the online form or the hard copy available in the office of one of the research team members (RA).

Study instrument

A structured questionnaire was adapted for this study that was based on previous studies (Silverthorne *et al.*, 2003; Savage *et al.*, 2009; Ubaka *et al.*, 2013 Gebretekle *et al.*, 2014) and was modified to suit pharmacy education and practice in Jordan. This modification was done to accommodate the differences in practice settings as well as pharmacy curriculum. The questionnaire consisted of 31 questions, separated into three sections, and was validated within two months.

In the first section, respondents were asked to provide demographic data to include age, gender, year of study, type of high school attended, and relationship status. In the second section, respondents were asked to rate their satisfaction and provide reasons for choosing pharmacy as a career. They were also asked whether they preferred to work in private or public sectors. The third section asked respondents about factors influencing their preference regarding pharmacy career domain and the role of university. For questions or statements in section three, the respondents were asked to rate their response using the options “very high importance”, “high importance”, “neutral”, “low importance”, and “very low importance”.

Face validity and translation of questionnaire

To establish face validity, the questionnaire was peer reviewed by two faculty members (Ph.D. holders) with experience in survey design. Moreover, three pharmacy students were also asked to read the survey and give their feedback. All comments were taken into consideration and were incorporated in the final version of the questionnaire. The questionnaire was then translated into Arabic and back translated to English. Students were given the option to complete the survey either online, using a user-friendly internet based commercial survey software, or as paper-based in Arabic or in English.

Sample size

The sample size was calculated based on the current student intake approved by the Ministry of Higher Education and Scientific Research, Jordan. The population of undergraduate pharmacy students was 1000. The sample size was then calculated using online sample size calculator by taking confidence level at 95% and 5% margin of error. The minimum recommended sample size was calculated to be 278.

Data analysis

The participants' responses were coded, and the data were entered and analysed using Statistical Package for the Social Sciences (SPSS, version 21, Chicago, IL, USA). Descriptive statistics was used to calculate the proportion of each group of respondents. *Chi-square* test was used with a significant level of $p < 0.05$ to identify any significant difference among the participants' responses.

Ethics review and consent

Participation in the study was voluntary and did not pose any risk to respondents. A verbal consent was sought from students. Those who consented to participate were handed the questionnaire. Also, for those who completed the questionnaire online, a consent form was provided electronically before they started the online questionnaire. This study was exempted from full ethics review by Institutional Review Board of the University.

Results

Demographic of study participants

Three hundred students were contacted to participate in the study. Fifty students refused to participate, and two hundred and fifty students completed the survey either online (n=130) or *via* completing the hard copy (n=120). Of the total 250 respondents, 68.8% were females. A mean age of 21.96±5.38 years was reported. Most students (93.6%) were single. Almost thirty five percent (34.8%) were in fifth year, 19.2% in fourth year, 32.8% in third year, 10.8% in second year, and 2.4% in first year of study (Table I).

Table I: Demographic characteristics of study sample (n= 250)

Age (years) mean (SD)	21.96±5.387
Gender	N (%)
• Male	78(31.2)
• Female	172(68.8)
School	
• Public	71(28.4)
• Private	179(71.6)
Relationship	
• Single	234(93.6)
• Engaged	7(2.8)
• Married	6(2.4)
• Divorced	3(1.2)
Study year	
• 1 st Year	6(2.4)
• 2 nd year	27(10.8)
• 3 rd year	82(32.8)
• 4 th year	48(19.2)
• 5 th year	87(34.8)

Reasons for choosing pharmacy as a career

Most students (77.0%) were happy with their choice of pharmacy as a career. Also, the majority (65.6%) felt that they had a good understanding of available options for pharmacy career domains *i.e.*, hospital, community,

industry, research, academia and insurance. Of the study sample, 64.8% indicated their preference to work in private sector.

More than 60% of the students were encouraged by their families to enrol in pharmacy while 83.5% enrolled in pharmacy degrees as they desired to work in a reputable profession. Moreover, most students (82.7%) enrolled in pharmacy as they sought employment with more career opportunities. In addition, more than 70% percent of students indicated their willingness to be involved in patient-care. The majority (80.6%) wanted to enrol in pharmacy because of more continuous advancement opportunities in the field. Most students (61.3%) agreed that pharmacy is a well-paid profession. Also, more than half (58.1%) of the students agreed that pharmacy has flexible working hours (Table II).

Table II. Student reasons for choosing pharmacy as a career n (%)

Statement	Yes N (%)
My family encouraged me	189 (67.7)
I wanted to work in a reputable profession	207 (83.5)
I wanted a job with good and more career opportunities	205 (82.7)
I wanted to work with patients	179 (72.2)
I wanted flexible working hours	144 (58.1)
Pharmacy graduates are well respected by the general public	174 (70.2)
Pharmacy is a well-paid job	152 (61.3)
Advancement opportunities	200 (80.6)

Preferred career options

Students were more aware of their preferred career options at the end of their university years (Figure 1). A majority of students chose community pharmacy, hospital pharmacy and medical sales representative as career domains while some students chose insurance or regulatory affairs and drug registration as career options. A significant difference ($p<0.05$) between female and male students was reported pertaining to preferred career. Females preferred to work in academia and in the hospital setting whilst males preferred to work as medical sales representatives or in the pharmaceutical industry (Figure 2).

It was observed that only 35.9% of the students knew about possible career options at the beginning of their university life (first three years). However, this proportion increased to 71.2% in the last year of study (Figure 3).

Figure 1: Career choices selected by students (n=250) at the beginning (first three years) and the end (last two years) of their Bachelor of Pharmacy degree

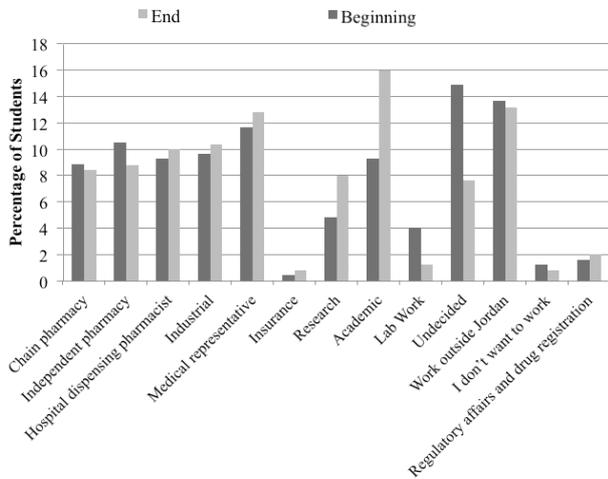


Figure 2: Career choice selected by students showing gender differences (females n=172; males n=78)

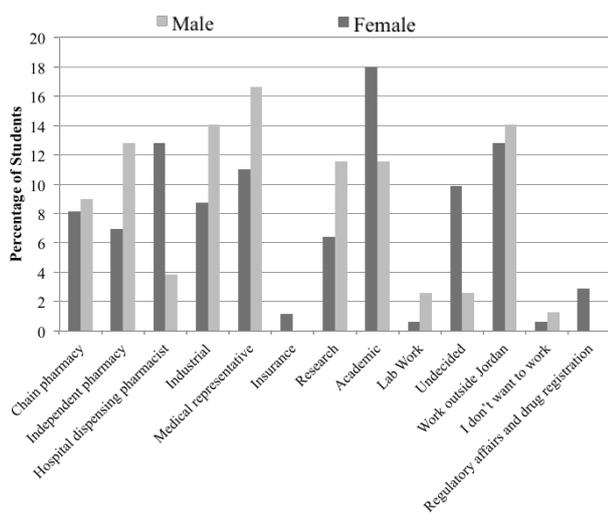
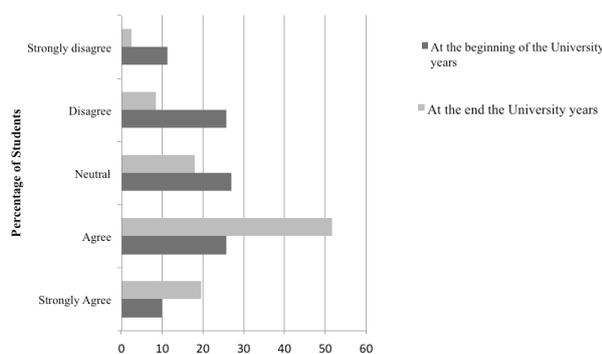


Figure 3: Comparing students' answers (n= 250) for the questions 'you knew about your future career options at the beginning of your university years' and 'you knew about your future career options at the end of your university years'



Factors influencing students' career preferences

Students indicated a "high" to "very high importance" of pharmacy practice course content (46.8%), faculty members' advice (46.8%) and visits to hospital or pharmaceutical industry during their pharmacy years (41.6%), in influencing their career choices. Many respondents reported that their interaction with practicing pharmacists influenced their career preference (53.2%). A third of the students (33.2%) believed that having a family member in the pharmacy field was a factor (Table III).

Figure 4: Student agreement (n=250) with the role of the University in providing sufficient information and work experience that help them in knowing their future career options

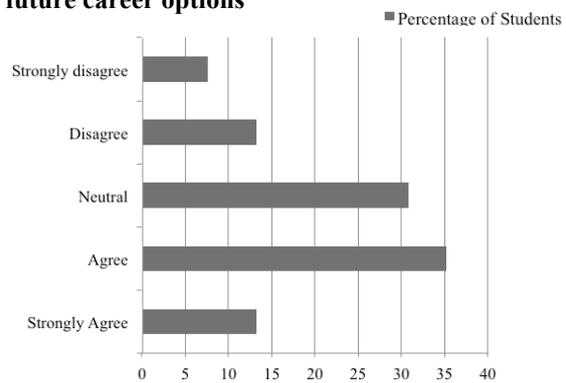


Table III: Identifying factors affecting students' career preferences n (%)

Factors	Very low Imp.	Low Imp.	Neutral	High Imp.	Very high Imp.
Pharmacy practice course contents	24 (9.6)	47 (18.8)	62 (24.8)	73 (29.2)	44 (17.6)
A faculty member advice	29 (11.6)	37 (14.8)	67 (26.8)	67 (26.8)	50 (20.0)
Hospital pharmacy visit	38 (15.2)	45 (18.0)	63 (25.2)	64 (25.6)	40 (16.0)
Pharmaceutical industrial visit	41 (16.4)	52 (20.8)	50 (20.0)	67 (26.8)	40 (16.0)
Experience of Internship (pharmacy training)	28 (11.2)	37 (14.8)	57 (22.8)	65 (26.0)	63 (25.2)
A friend's career choice	43 (17.2)	52 (20.8)	74 (29.6)	58 (23.2)	23 (9.2)
Interaction with practicing pharmacists	29 (11.6)	37 (14.8)	51 (20.4)	76 (30.4)	57 (22.8)
The recruitment sector in the pharmaceutical companies and community pharmacies	33 (13.2)	42 (16.8)	63 (25.2)	79 (31.6)	33 (13.2)
The recruitment sector in the community pharmacies	33 (13.2)	42 (16.8)	63 (25.2)	79 (31.6)	33 (13.2)
Family connections in the pharmacy area	39 (15.6)	52 (20.8)	76 (30.4)	55 (22.0)	28 (11.2)

Imp. = Important

About half of the students (48.4%) “agreed” or “strongly agreed” that the University had a role in providing sufficient information and experience that influenced career selection. Some students (30.8%) were uncertain about the role of University (Figure 4).

Discussion

This was a novel study conducted with pharmacy students of Jordan that aimed to explore students' perceived reasons for choosing pharmacy as a career and the factors that influenced career preference, as well as the role of university in student decision-making. It was necessary to investigate factors and motivations for choosing pharmacy as a career (Keshishian *et al.*, 2010). Healthcare and pharmacy practice in Jordan have advanced over the years, however several aspects are need to be addressed for further enhancement (Nazer & Tuffaha, 2017).

A study by Keshishian and colleagues (Keshishian *et al.*, 2010) reported that more career opportunities and helping others were the most important reasons for pursuing a pharmacy degree. Also, a study conducted in Australia cited extrinsic factors such as future job prospects and the need to be part of the healthcare delivery system as the most important reasons for studying pharmacy (Davey *et al.*, 2006). Similar findings were found in this study; reputation and career opportunities contributed to students' motivation to study pharmacy. This indicates that students were aware of the various career paths that the pharmacy profession may offer. Moreover, working alongside patients or being involved in patient-care was an important motivator, as reported by students. Results indicated that only 35.9% of the students knew possible career options in pharmacy at the beginning of their university life (first three years). This proportion increased to 71.2% of students enrolled in the last year of their study. Such results indicate that students became more knowledgeable and decisive regarding future career options in pharmacy across the five-year curriculum. Family support and encouragement was also reported to be a strong motivation. This finding is supported by previous research (Anderson *et al.*, 2008; Jesson *et al.*, 2015; Abduelkarem & Hamrouni, 2016). This establishes the importance of parental guidance in career selection. Contrastingly, some students reported not being influenced by their parents in their decision to study pharmacy (Keshishian *et al.*, 2010; Sharif & Sharif, 2014). This may be indicative of self-motivation.

Results of the study highlighted a high female to male ratio with an average age of 22 years. This is similar to many studies (Sharif & Sharif, 2014; Jesson *et al.*, 2015; Abduelkarem & Hamrouni, 2016). The number of female pharmacists is much greater than males (Hawthorne & Anderson, 2009). This could be due to the proposition that pharmacy has been a female-friendly profession (Janzen *et al.*, 2013). Female applicants to pharmacy schools have outnumbered males since 1985 in the United State (Taylor & Patton, 2008), highlighting the

influence of gender on pharmacy career choices. It requires further investigation.

There was a significant association between gender and the response to the most preferred career options ($p < 0.05$). A large proportion of females preferred to work in academia or a hospital setting. Being a female in an Arab community and in a conservative Jordanian society requires flexible work hours and little or no day/night shift system. Academia is considered an attractive field for females to occupy as it provides an ideal work environment. According to the American Association of Colleges of Pharmacy, female participation in pharmacy academia is rising due to an increase in positions for assistant and associate professors (American Association of Colleges of Pharmacy, 2009). In other studies, flexible work scheduling was also found to be of importance and a key influencer for female students' career choices as compared to male students (Savage *et al.*, 2009; Ubaka *et al.*, 2013).

Males indicated a preference for work as medical sales representatives or in the pharmaceutical industry. Medical sales representative positions are usually occupied by male candidates since these jobs are highly stressful and demanding. They require extensive travel, evening and weekend hours may be necessary to complete tasks, and it is field-based in nature which may not be felt to be appropriate for Jordanian women (Qais Alefan, 2016). High income is the most common attraction for males to seek a sales career path (Qais Alefan, 2016). Interestingly, students indicated least interest in insurance and drug registration careers. This could be attributed to lack of knowledge about job opportunities and awareness of pharmacists' role in these fields. In a study conducted in Pakistan, working in the pharmaceutical industry field was the highest preferred career choice followed by clinical and hospital pharmacy (Naqvi *et al.*, 2017), which was in line with the finding of this study. Furthermore, more than half of students reported that pharmacists influenced their career preference. This was in accordance with Anderson and colleagues' findings that more than 60% of students highlighted a pharmacist who influenced them to pursue pharmacy education (Anderson *et al.*, 2008). This study's findings were in contrast to those reported by others that pharmacists' influence on students' career selection was minimal (Keshishian *et al.*, 2010; Sharif & Sharif, 2014; Jesson *et al.*, 2015).

It is worth mentioning that almost half of the students agreed on the University's role in exploring several career paths through providing sufficient information and experience. This finding shed light on the University's responsibility in helping students in decision-making regarding their career according to their interests as well as the pharmaceutical market (Nazer & Tuffaha, 2017). Moreover, bridging the gap between education and employment through a collaborative network with competent health authorities, pharmacy associations and private sector can further steer students towards selecting better career options (Bader *et al.*, 2017; Nazer & Tuffaha, 2017).

Conclusion

This study highlighted important factors that influenced students' choice to study pharmacy and to select a career domain. Students became more knowledgeable across the five-year curriculum with regards to their career and mentioned the role of the University in this endeavour. Gender was a major factor in defining student career preference. Identification of these factors can provide insights for optimised experiential curriculum planning and development.

Conflict of interest

No conflict of interest was found.

References

- American Association of Colleges of Pharmacy. (2009). Annual Report: A Global View of Pharmacy Education. *American Journal of Pharmaceutical Education*, **73**(Suppl), S3
- Abduelkarem, A.R. & Hamrouni, A.M. (2016). The choice of pharmacy profession as a career: UAE Experience. *Asian Journal of Pharmaceutical and Clinical Research*, **9**(4)
- Anderson, D.C., Sheffield, M.C., Hill, A.M. & Cobb, H.H. (2008). Influences on Pharmacy Students' Decision to Pursue a Doctor of Pharmacy Degree. *American Journal of Pharmaceutical Education*, **72**(2), 22
- Bader, L.R., McGrath, S., Rouse, M.J. & Anderson, C. (2017). A conceptual framework toward identifying and analyzing challenges to the advancement of pharmacy. *Res Social Adm Pharm*, **13**(2), 321-331. doi:10.1016/j.sapharm.2016.03.001
- Beedemariam, G., Ebro, M., Ageze, H., Weldegerima, B., Legesse, B. & Tilahun, G. (2014). Pharmacy students' attitude and future career choices: a survey of four public schools of pharmacy in Ethiopia. *Ethiopian Pharmaceutical Journal*, **30**(1)
- Cipolle, R.J., Strand, L.M. & Morley, P.C. (2012). Pharmaceutical Care as the Professional Practice for Patient-Centered Medication Management Services. In *Pharmaceutical Care Practice: The Patient-Centered Approach to Medication Management Services*, (Eds. R.J. Cipolle, L.M. Strand & P.C. Morley), 3rd ed. New York, NY: The McGraw-Hill Companies. Chapter 2.
- Davey, A., Evans, A.M. & Stupans, I. (2006). Pharmacy: Factors that influence the choice of career and study options. *Pharmacy Education*, **6**(1), 1-6
- Hanna, L.-A., Askin, F. & Hall, M. (2016). First-Year Pharmacy Students' Views on Their Chosen Professional Career. *American Journal of Pharmaceutical Education*, **80**(9), 150. doi:10.5688/ajpe809150
- Harland, J., Pitt, S. & Saunders, V. (2005). Factors affecting student choice of the undergraduate research project: staff and student perceptions. *Bioscience Education*, **5**(1), 1-19. doi:10.3108/beej.2005.05000004
- Hawthorne, N. & Anderson, C. (2009). The global pharmacy workforce: a systematic review of the literature. *Hum Resour Health*, **7**, 48. doi:10.1186/1478-4491-7-48
- Janzen, D., Fitzpatrick, K., Jensen, K. & Suveges, L. (2013). Women in pharmacy: A preliminary study of the attitudes and beliefs of pharmacy students. *Can Pharm J (Ott)*, **146**(2), 109-116. doi:10.1177/1715163513481323
- Jesson, J., Langley, C. & Wilson, K. (2015). Choosing to study pharmacy: measuring influences and motivations. *Pharmacy Education*, **10**(2), 79-84
- Keshishian, F. (2010). Factors Influencing Pharmacy Students' Choice of Major and Its Relationship to Anticipatory Socialization. *American Journal of Pharmaceutical Education*, **74**(4), 75
- Keshishian, F., Brocavich, J.M., Boone, R.T., & Pal, S. (2010). Motivating Factors Influencing College Students' Choice of Academic Major. *American Journal of Pharmaceutical Education*, **74**(3), 46
- Naqvi, A.A., Zehra, F., Naqvi, S.B.S., Ahmad, R., Ahmad, N., Usmani, S., Badar, S., Younus, I. & Khan, S.J. (2017). Migration Trends of Pharmacy Students of Pakistan: A Study Investigating the Factors Behind Brain Drain of Pharmacy Professionals from Pakistan. *Indian Journal of Pharmaceutical Education and Research*, **51**(2), 192-206
- Nazer, L.H., & Tuffaha, H. (2017). Health Care and Pharmacy Practice in Jordan. *The Canadian Journal of Hospital Pharmacy*, **70**(2), 150-155
- Qais Alefan, A.H. (2016). Pharmacy Practice in Jordan. In *Pharmacy Practice in Developing Countries*. (Eds. A.I. Fathelrahman, M.I. Ibrahim & A.I. Wertheimer). Elsevier, pp.211-232
- Sadia Shakeel, W. I. & Riffat Yasmin, Huma Ali. (2013). Prospective Career Preferences of Imminent Pharmacist. *IOSR Journal Of Pharmacy*, **3**(8), 2319-4219
- Savage, L.M., Beall, J.W. & Woolley, T.W. (2009). Factors That Influence the Career Goals of Pharmacy Students. *American Journal of Pharmaceutical Education*, **73**(2), 28
- Sharif, S.I. & Sharif, R.S. (2014). Choosing Pharmacy as a Major: Motivations and Influences. *Pharmacy Education*, **14**(1), 116-120
- Silverthorne, J., Price, G., Lyn Hanning, Justine Scanlan, Judy Cantrill. (2003). Factors that Influence the Career Choices of Pharmacy Undergraduates. *Pharmacy Education*, **3**(3), 161-167
- Taylor, D.A. & Patton, J.M. (2008). The Pharmacy Student Population: Applications Received 2006-07, Degrees Conferred 2006-07, Fall 2007 Enrollments. *American Journal of Pharmaceutical Education*, **72**(Suppl), S06
- Ubaka, C.M., Ochie, U.M. & Adibe, M.O. (2013). Student pharmacists' career choices: a survey of three Nigerian schools of pharmacy. *Pharmacy Practice*, **11**(3), 149-155