



PERCEPTIONS AND CAREER PREFERENCES OF PHARMACY STUDENTS. A CROSS-SECTIONAL STUDY CONDUCTED IN PUBLIC SECTOR UNIVERSITIES OF PAKISTAN.

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Abstract

Background: The Pharmacy is a very well oriented profession worldwide. However, in Pakistan the satisfaction level of students is not up to the rank. Therefore, this study throws lights on various aspects that will reflect the satisfaction level of pharmacy students in Pakistan.

Objective: In this work there is discussion about the perceptions, career preferences and different factors which influence the selection criteria of pharmacy students.

Material and methods: The responses were collected from final year pharmacy students by circulating a survey form in pharmacy departments of different universities. The data was analyzed by using Excel sheet and Statistical Program for Social Sciences (SPSS).

Results: The majority of the students (i.e., N=191; 85.7%) decided to get admissions in Pharm-D because they could not secure admission in MBBS. The final year pharmacy students (i.e., 21.5%) wanted to become hospital pharmacist while fewer students still did not decide about their careers. Usually the students made their career decision according to appropriate job workload (i.e., N=86; 38.6%) and flexible timing (i.e., N=83; 37.2%). Furthermore, the students (i.e., N=102; 45.7%) considered pharmacy profession as a part of national health care system (NHS).

Conclusion: The students keep pharmacy profession at second priority. They consider this profession as a part of NHS and the majority wanted to become hospital pharmacist.

Keywords: Perceptions, Career Preferences, Selection criteria, NHS, job workload, Hospital pharmacist.

Introduction

Pharmacy profession can associate medical sciences with chemical sciences. This profession also ensures the safe consumption of medicine (1). Fewer researches have explained the factors which can affect the selection of pharmacy profession as a major at various stages. However, Booth *et al*, (2) have tried to explain about the influencers which motivate students to take admissions in pharmacy school. Furthermore, this study also through light on different factors which determined the selection criteria including school characteristics, sources of influence, and many other career alternatives. Other authors have also determined the influence of intrinsic and extrinsic motivators (3). As far as, the background of this study is concerned, the Pharmacy is a very well oriented profession worldwide. However, in Pakistan the satisfaction level of students is not up to the rank. Therefore, this study throws lights on various aspects that will reflect the satisfaction level of pharmacy students in Pakistan. No doubt the other countries of the world have done a lot of studies on this topic in order to bring revolution in pharmacy profession (4-7). However, limited studies have been conducted, on this topic in Pakistan. The aim of this study is to develop a baseline consideration about career preferences, selection criteria and perceptions of Pakistani pharmacy students regarding to their profession while adopting it as a major at graduation level.

Material and methods:

Study location and design

This cross-sectional study was conducted in pharmacy departments of six Government universities. The pharmacy program of these universities was registered in Register-A of Pakistan Pharmacy council (PPC). These government sectors include University of Punjab (UOP), Government college university Faisalabad (GCUF), University of Sargodha (UOS), Bahauddin Zakariya University Multan (BZU), University of veterinary and animal sciences (UVAS) and university of Jamshoro (UOJ). The private sectors were not included in this study. Most of the pharmacy students did their graduations from these government sectors. Therefore, this cross- sectional study was conducted in only government sectors.

Inclusion criteria

In this study the responses were collected only from the final year pharmacy students. The pharmacy students of only government sector universities were included in this survey.

Exclusion criteria

The responses were not collected from pharmacy students of private institutes or those having no affiliation with pharmacy council of Pakistan.

Participants and duration of study

The final year pharmacy students of all six universities willingly participated in this study. Overall two hundred and twenty three (223) responses were collected and the students of Punjab University offered a lion share in this regard. The study was completed in 6 months as shown Gant chart in figure 1.

Figure: 1 Gant chart showing study conduction plan.

	December 2018	January 2019	February 2019	March 2019	April 2019	May 2019
Data Collection						
Evaluation						
Re-evaluation						
Documentation						

Study Device

The study device was consisted of a questionnaire which contained different Questions. The questionnaire was subdivided into different domains carrying multiple questions. The questionnaire was filled up from students either physically or electronically through Google form. A number of pharmacy students of different universities willingly participate in survey. First the datais organized on Microsoft excel sheet and, at the end, the analysis of responses was done by usingwell known statistical software SPSS

Result

Demographics of respondents

The total number of students who participated in survey were 223 having a response rate of 74%. The majority of the students were females (i.e., n=135, 60.5%) between an age of 20-25. Only (i.e., n=11, 4.9%) students were married while (i.e., n=212, 95.1%) were single. Most of the respondents were resident of Punjab (i.e., n=194, 87%). The survey form was circulated in six nominated universities of Pakistan. Among these universities the Punjab university (PU) studentscovered a lion share (i.e., n=72, 32.3%). The students usually lived in hostels (i.e., n=121, 54.3%)while only (i.e., n=4, 1.8%) were foreigners as shown in table1.

Table 1: Showing the demographics of respondents

Variables		Frequency (N)	Percentage (%)
Gender	Male (Respondents)	88	39.5
	Female (Respondents)	135	60.5
Martial Status	Single (Bachelor)	212	95.1
	Married	11	4.9
Province	Punjab	194	87.0
	Baluchistan	1	3.1
	Sindh	7	0.4
	KPK	13	5.8
	GB (Gligit-Baltistan)	6	2.7
	AJK (Azad Jammu Kashmir)	2	0.9
Income status	High (> 50,000)	119	53.4
	Medium (30,000 to 50,000)	62	27.8
	Low (15,000 to 30,000)	42	18.9

Student's reaction towards major medical professions

Out of 223 respondents, only 35 students choosed pharm-D as a first choice while 188 preferred itas second choice. Overall the respondents gave priority to MBBS (i.e., n=157, 70.4%). The other professions gained minor preferences from respondents.

Factors affecting the selection criteria of Students

The majority of the students (i.e., N=191, 85.7%) wanted to secure admission in surgery but they could not do so. Therefore, they took admission in Pharm-D. Furthermore, the attractive salary packages of different professions in pharmacy also motivated them to take admission in Pharm-D. The students also felt proud when people called them doctor. So, after failing in medical entrance examination they got admission in Pharm-D just for obtaining the title of a doctor (Dr). A numberof students (i.e., N=129. 57.8%) choosed Pharm-D as a major at graduation level because they wanted to run their own pharmacy businesses. The students also believed that this profession would offer more opportunities in future life. In addition, peer recommendations also have a lion share in the selection of pharmacy profession as shown in table 2.

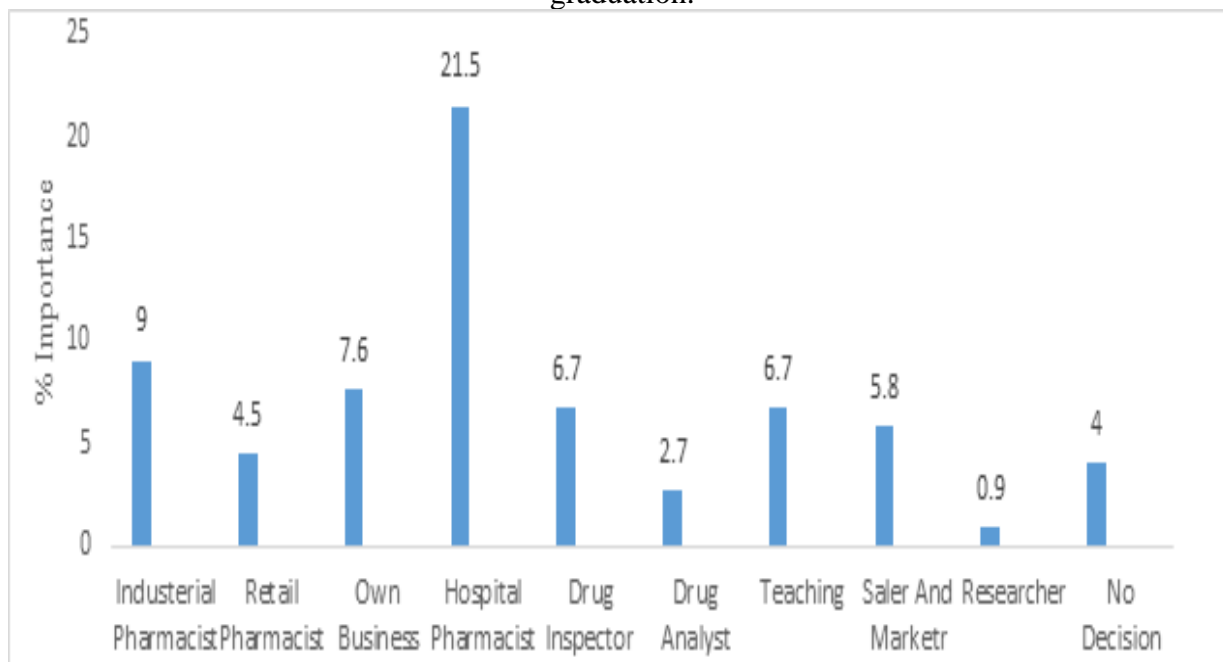
Table 2: Showing different factors that can affect the selection criteria of students

Variables	Yes		No	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
More Opportunities	154	69.1	69	30.9
Fail to Secure admission in MBBs	191	85.7	32	14.3
Securing Title of Doctor (Dr)	116	52.0	107	48.0
Attractive Salary	62	72.2	16	27.8
Own Business	129	57.8	94	42.2
Recommended by Family	121	54.3	102	45.7
Recommended by Friends	112	50.2	111	49.8
Recommended by Teachers	104	46.6	119	53.4

Career Preferences among pharmacy students after doing graduation

According to data the students (i.e., 21.5%) wanted to become hospital pharmacist. The second most preferred career was industry (i.e., 9%). They also gave preference to other careers but these are at least priority such as retail pharmacist (i.e., 4.5%), drug inspector (i.e., 6.7%), drug analyst (i.e., 2.7%), teaching (i.e., 6.7%), sales and marketing (i.e., 5.8%). A number of students were also interested in doing their own business. The least preferred option was research field which was very disappointed. Only a few students wanted to go in research while some students still did not decide about career selection as shown in graph 1.

Graph 1: Showing the preferences of pharmacy students towards different careers after doing graduation.



Reasons behind choosing different pharmacy careers among pharmacy students

The data suggests that the students choose different careers due to appropriate workload and flexible timing. Handsome salary package and feasible job location also influence them to some extent. Unusual thing was that, few students still did not make any decision regarding to their careers. Hopefully, they would do selection according to their peer's recommendations. Therefore, this is at the lowest rank as shown in the table 3.

Table 3: Showing reasons behind choosing different profession after becoming pharmacy graduate.

Variables	Agree	Disagree	Not sure	RI	Rank
	Frequency (N)	Frequency (N)	Frequency (N)		
Handsome Salary	67 (30.0%)	32 (14.3%)	24 (10.8%)	0.749	3
Appropriate Workload	86 (38.6%)	23 (10.3%)	16 (7.2%)	0.883	1
Flexible Timing	83 (37.2%)	30 (13.5%)	14 (6.3%)	0.805	2
Feasible Job Location	62 (27.8%)	37 (16.6%)	23 (10.3%)	0.734	4
Recommended by Peers	56 (25.1%)	51 (22.9%)	15 (6.7%)	0.680	5

Perceptions of 5th year pharmacy students regarding to their field

Before securing admission in Pharm-D the students considered that the pharmacists can only run a retail pharmacy (i.e., n=48, 21.5%). The students also have limited knowledge at intermediate level about pharmacy field. About (i.e., n=165, 74.0%) students were not motivated by their teachers and any career-counseling event. But in final year they have totally different perceptions. From the data given in table one thing is clear that the students consider pharmacy as a part of national health care system. They also consider pharmacy as a secondary profession to MBBS. Secondly, this profession provides fewer opportunities as compared to other medical profession. The students also confessed that there are minimum chances of employment after doing pharmacy as shown in table 4.

Table 4: Showing the perceptions of pharmacy students towards their field

Perceptions	Agree	Disagree	Not Sure	RI	Rank
	Frequency (N)	Frequency (N)	Frequency (N)		
Employment after Degree	76 (34.1%)	22 (9.9%)	23 (10.3%)	0.809	3
well paid Job	46 (20.2%)	46 (20.6%)	27 (12.1%)	0.606	5
Secondary Profession to MBBS	94 (42.2%)	18 (8.1%)	10 (4.5%)	0.874	2
Part of NHS (National Health System)	102 (45.7%)	8 (3.6%)	10 (4.5%)	0.927	1
Few opportunities for career development	63 (28.3%)	37 (16.6%)	20 (9.0%)	0.738	4

Discussion

Pharmacist community is increasing day by day and now pharmacy has become an emerging field in Pakistan. As the time is being passed the scope of this field is becoming higher as it offers various opportunities for a bright future. The purpose of our study is to check the pharmacy student's mindset towards their profession. One thing was very surprising that the females have a lion share in this profession like various other health care professions. Another thing of great concern is that almost three-quarters of students have decided their career pathways while remaining one-quarter haven't yet decided. They will take decision according to their family members. In this study there is a flow of final year students who want to become hospital pharmacist and second preference is given to industrial setting, followed by Community/Retail Pharmacist and Drug inspector. On the other hand a recent study which is conducted in Lahore, Pakistan; the majority of students of Pharm D want to become clinical pharmacist, a best career option, followed by hospital pharmacist and drug inspector (8). Another study pertaining to career selection was done in Karachi, in which

Industrial settings were given the top priority by pharmacy students (7). While a previous study which is conducted in KPK revealed that the majority of responding students had decided to play a role in drug regulation while clinical and hospital settings were at least priority (10). These are some studies which are conducted in Pakistan. On the other hand if we compare it worldwide with other similar studies we shall come to know that most of the pharmacy students want to become hospital pharmacist. (9). In short the students who have decided to become a clinical and hospital pharmacist actually, they want a direct participation in patient care. On the other hand those who decided to become drug inspectors they want to bring remarkable reforms in drugs regulation. According to this study 68% students consider pharmacy as an ideal profession. Similarly, a large number of students feel proud to tell others that they are pharmacy students. About 96% of students have a opinion that pharmacy profession is very important for healthcare system. For the utilization of pharmacist to maximum extent the proper reforms should be brought in healthcare system so that the patient oriented care can be improved. The pharmacy students should gain qualitative knowledge of medicine so that they can improve patient's quality of life. This is actually a race for pharmacist in which they have to excel by finding and improving their shortcomings.

Conclusion

The study reveals that students don't select the field of pharmacy on top priority. They select pharmacy profession because they failed to secure admission in other major medical professions. The perceptions of Pakistani students are different as compared to the students of other countries but they consider pharmacy profession as a part of health care system. Due to lack of information about the field of pharmacy, students are confused to choose their careers. However, majority of the students wanted to work as a hospital pharmacist.

Future Recommendations

The government should take following steps in order to promote the status of pharmacy profession in Pakistan.

1. Proper counseling events in term of research seminars and workshops should be conducted on regular basis in universities.
2. Not only the university students but also the public should be allowed to participate in these events.
3. The universities conducting pharmacy program should be furnished with proper pharmaceutical labs containing all necessary equipment.
4. To elaborate the role of pharmacist in society, the government should develop community pharmacies all over the Pakistan.

Conflict of interest

The author has no conflict of interest

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Ethical approval

The study was ethically approved from research review committee of government college university of Faisalabad.

References

1. Merlin NJ. Pharmacy careers-an overview. Asian Journal of Research in Pharmaceutical Science. 2011;1(1):1-3.
2. Booth TG, Harkiss KJ, Linley PA. Factors in the choice of pharmacy as a career. Pharmaceutical Journal. 1984 Oct;233(6298):420.
3. Greenhalgh T, Seyan K, Boynton P. "Not a university type": focus group study of social class,

- ethnic, and sex differences in school pupils' perceptions about medical school. *Bmj*. 2004 Jun 24;328(7455):1541.
4. Kiersma ME, Plake KS, Newton GD, Mason HL. Factors affecting prepharmacy students' perceptions of the professional role of pharmacists. *American journal of pharmaceutical education*. 2010 Nov 1;74(9).
 5. El-Hammadi M. Career preferences of Syrian students and their attitudes toward a number of practice areas: Will community pharmacy continue to dominate the profession?. *Currents in Pharmacy Teaching and Learning*. 2013 Sep 1;5(5):373-80.
 6. Ubaka CM, Ochie UM, Adibe MO. Student pharmacists' career choices: a survey of three Nigerian schools of pharmacy. *Pharmacy Practice*. 2013 Jul;11(3):149.
 7. Shakeel S, Iffat W, Yasmin R, Ali H. Prospective career preferences of imminent pharmacist. *IOSR J Pharm*. 2013 Sep;3(8):38-43.
 8. Saleem Z, Saeed H, Azhar F, Shafaqat I, Shahzadi S, Salman M, Hashmi FK, Hassali MA. Career Preferences, Leadership Attitudes, and Research Interests among Pharmacy students of Lahore, Pakistan. *Journal of Applied Pharmaceutical Science*. 2018 Jun 29;8(6):178-84.
 9. Beedemariam G, Ebro M, Ageze H, Weldegerima B, Legesse B, Tilahun G. Pharmacy students' attitude and future career choices: a survey of four public schools of pharmacy in Ethiopia. *Ethiopian Pharm J*. 2014 Aug 25;30(1):57-63.
 10. Saad S, Sumbal A, Mohammad I. Attitude of fourth year Doctor of Pharmacy students towards pharmacy profession and their career preferences. *Archives of Pharmacy Practice Vol*. 2012 Oct 1;3(4).