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# A study on Pharm D Students Present Views and Future Plans

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#### **ABSTRACT**

Objective- This study aims to evaluate reasons for joining the Pharm D program among the graduates and students, their levels of satisfaction regarding choice, their perception towards the program and future career plans.

Methods- All students and graduates under the Kerala University of Health Sciences, KUHS were invited to participate in the study conducted using the online portal- Google forms.

Results- A total of 199 participants responded to the questionnaire, where the main reasons for choosing the program were to serve the society (88.4%), he/she is good at science (81.4%) and to settle and work abroad (70.9%). Working as hospital Clinical Pharmacist (87.9%) and Pharmacovigilance(80.4%) were the most preferred future career plans. About 59.8% respondents were ambitious towards pharmacy field.

Conclusion- More than half of the respondents were satisfied to choose pharmacy and their reason for choice was to serve the society which outstood other factors and were more inclined to depict their skills in the field of pharmacovigilance and as clinical pharmacists.

Key words:

Pharm D, Pharmacy, Motivation, Choice, Future Career plans, Clinical

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# **INTRODUCTION**

Pharmacy holds an unparalleled role in the field of healthcare. From the roots of compounding and dispensing it has overtaken the perspective of the profession into a wider angle which includes hospital, community, and clinical pharmacy. The evolution being prominent in the last few decades, pharmacists play a vital role in the health care system. The stamped term "Seven Star Pharmacist" by WHO in 1997 describes it in terms of caregiver, decisionmaker, communicator, leader, manager, lifelong learner, and teacher.1 Pharmacists also play an inevitable role in other emerging medical fields to work for the betterment of the society and the world in a broader perspective [1].

The students in 10+2 are unaware of Pharm D as a profession, its relevance in the health profession, and the role of clinical pharmacists. There are multitudes of reasons for the students to take up Pharm D as a program after the completion of their 10+2 boards. Of which some may choose Pharm D as a profession to settle and work abroad, while some may opt for high-income potential and prominent social status. As students, their families, friends, mentors, or various career guidance can also have a colossal impact on their Herculean decision making [2].

The choice of Pharm D as a profession by the students, their views after the choice of program, and questions regarding the future plans are the core points discussed in this paper. Doctor of Pharmacy (PharmD) is a professional doctorate in pharmacy and is concerned mainly with the clinical pharmacy practices and counseling of patients. PharmD course in Kerala, India is

offered by Kerala University of Health Sciences, KUHS, and regulated by the Pharmacy Council of India, PCI2 [3]. India is a developing country wherein the framework of Pharm D as a course is foggy and has not reached the majority of the populations, the roles, responsibilities, and lifelong commitments of this course and their wide application in patient's health and related aspects can be highlighted through this work. Awareness about the different possibilities of the path chosen by the students can be spotted. A survey conducted in the country especially in Kerala and the results obtained are expected to motivate more students to undertake their field of study and incline towards this course. Many studies have been conducted all over the globe3 and India4, 5to investigate the factors, reasons to choose pharmacy as a profession, and Pharm D as a course of study. This paper aims to aims to evaluate reasons for joining the Pharm D program among the graduates and students, their levels of satisfaction regarding choice, their perception towards the program and future career plans for nurturing scope of Pham D profession in India and create an impact on public regarding its importance and transform PharmD as a well recognized and respected profession [4].

# **MATERIALS AND METHODS**

# STUDY DESIGN

A study was carried out at Nirmala College of Pharmacy, Muvattupuzha, Kerala. Around 200 sets of Questionnaires were circulated to Pharm D students and Graduates in the state of Kerala, India to conduct the research survey.

#### **DATA COLLECTION TOOL**

The questionnaire was prepared after extensive literature review-6, 7, 8, 9, 10, 11, 12. The questions were validated and verified by an expert from the Pharmacy Practice Department at Nirmala College of Pharmacy. A pilot study was conducted on 30 students. The questionnaire is divided into 4 parts. The first part includes the year of study, place of residence, age, gender, and Higher Secondary Score of the respondent. The second part states the reasons for choosing the program that includes the interest of the student, plans on working abroad, to serve the society, budding interest in research activities, and other specified reasons if any. The third part consists of the student's perception towards the choice of the program that includes the working hours offered and the satisfaction levels with taking the course. The fourth part indicates the future career plans of the students or the graduates that gives an elbow room for hospital clinical pharmacist, faculty member, researcher, community pharmacy, sales, pharmacovigilance and as specified if any.

#### STUDY POPULATION

The Pharm D students and Graduates were eligible to participate in this study from various pharmacy colleges in Kerala, a total of 199 students responded.

# **DATA COLLECTION TECHNIQUE**

A group of three 3rd year Pharm D students collected the data from the study population. An online platform- Google form was utilized to circulate it within the students. The data collectors introduced themselves, the objective of the study, and the link to the questionnaire was distributed. The students were informed to voluntarily fill out the form; it took ≤5 minutes to complete their response.

# STATISTICAL ANALYSIS

The data was collected using the Google forms sheet. The responses were recorded in percentages and frequency using the SPSS statistics software. Fischer exact values and Chi-square values were interpreted using the software. Exact values were taken as two-sided.

#### RESULTS

The number of respondents was 199 in the study. The majority of respondents were females (83.9%) including graduates (20.6%) and students from 1st year (17.1%), hailing from rural areas (55.3%), opting for pharmacy as their second choice of program (70.4%) and with an HSS score above 80 %(48.7%). Below are the tabular representation of the same. Table 1 is the demographic details of the respondents.

TABLE 01:**DEMOGRAPHIC DETAILS** 

DEMOGRAPHIC CHARACTERISTICS		FREQUENCY	PERCENTAGE(%)	
Gender	Male	32	16.1	
	Female	167	83.9	
	1st year	34	17.1	
	2nd year	32	16.1	
	3rd year	29	14.6	
Year of study	4th year	30	15.1	
	5th year	33	16.6	
	6th year	41	20.6	
Place of residence	Rural	110	55.3	
	Urban	89	44.7	
Grade XII Score	Above 90%	81	40.7	
	Above 80%	97	48.7	
	Below 80%	21	10.6	

## Research Article

Table 02 summarizes the reason for choosing Pharm D as a program. More than half the respondents were persuaded by the family to join the course (57.8%) and friends (21.6%), while 55.8% chose this program because their HSS scores permitted them to take up this course. Another marked intentions to choose the course were to develop scientific knowledge (81.4%), failed attempt in UG-NEET (47.8%), an interest to work/settle abroad (70.9%), wishing to pursue research activities (58.8%), to work for the society (88.4%) and other specified reasons (21.1%).

Table 03points out the participant's perceptions towards the choice of the Pharm D as a course. More than half the respondents chose for the fixed working hours (53.3%), Around 59.8% of respondents were ambitious to choose Pharm D as a course, and 61.3% students were satisfied after choosing Pharmacy as a profession. Only 45.7% were willing to choose the same profession if given another chance. The student's future career plans were also a part of the study conducted. Table 04 gives a summary of the future plans. Around 87.9% would consider working as clinical pharmacists, 66.3% in research-oriented fields, 66.8% in regulatory and drug affairs, 85.9% to work outside India, 80.4% consider work in Pharmacovigilance, in Pharmaceutical sales and managing(23.6%), as a faculty member(41.7%), in the pharmaceutical industry(54.3%), in community pharmacy(44.2%), dispensing Pharmacist(19.6%0 and other plans that include Quality assurance, Medical writing, Pharmacoeconomics, Hospital Administration and Cosmetovigilance.

Table 02: Reason For Choice Of The Program

RESPONSES	YES	NO	GENDER	RESIDENCE	Grade XIISCORE <sup>m</sup>
Motivated by family	57.8	42.2	-	-	-
Motivated by friends	21.6	78.4	0.097	0.388	0.556
My higher secondary performance	55.8	44.2	0.695	0.475	<0.001
I am good at science and wanted to do a science based course	81.4	18.6	0.314	0.857	0.123
Failed attempt for UG- NEET	48.7	51.3	0.246	>0.999	0.156
To settle and work abroad	70.9	29.1	0.672	0.158	0.178
To serve the society	88.4	11.6	0.001 <sup>m</sup>	0.182	0.316
To pursue research activities	58.8	41.2	0.844	0.313	0.506
No specific reason	21.1	78.9	0.009	0.728	0.717

Table 02 summarizes the various reasons that led to the choosing of the pharmacy profession. More than half of the respondents were motivated by their social circle to take up the profession. The interest towards pursuing in the medical field was another choice. Fischer exact values, m(Chi-square values)

Table 03: Students's Pereception Towards Choice of Program

RESPONSES	YES	NO	GENDER	RESIDENCE	Grade XII SCORE(Chi)	CHOICE <sup>m</sup>
Pharmacy offers fixed working hours	53.3	46.7	0.177	0.201	0.522	0.756
I would choose the same profession if given an other chance	45.7	54.3	>0.999	0.476	0.262	<0.001
My ambition towards pharmacy field	59.8	40.2	0.884	0.468	0.772	<0.001
I am unsatisfied that I chose pharmacy	38.7	61.3	0.841	0.558	0.073	0.266

Table 03:- summarizes the perception of the respondents towards choosing the program. More than half has responded to the ambition towards the field (59.8%) and to the advantage of fixed working hours (53.3%). Fair satisfaction levels (61.3%) of their choice by the respondents was observed. Only 45.7% consider turning back on choosing the program. Fischer exact values,  $m(Chi-square\ values)$ 

Table 04: Student's Future Career Plans/Present Career Fields

RESPONSES	YES	NO	GENDER	RESIDENCE	GradeXII SCORE <sup>m</sup>
Hospital dispensing pharmacist	19.6	80.4	0.335	>0.999	0.204
Hospital clinical pharmacist	87.9	12.1	0.546	>0.999	0.208
Community Pharmacy	44.2	55.8	>0.999	0.390	0.213
Industry Oriented	54.3	45.7	0.437	0.775	0.125
Faculty member	41.7	58.3	0.322	0.389	0.649
Research	66.3	33.7	0.409	0.451	0.350
Pharmaceutical sales and marketing	23.6	76.4	0.009 <sup>m</sup>	0.615	0.748
Regulatory affairs and drug registration	66.8	33.2	>0.999	0.295	0.934
Work outside India	85.9	14.1	>0.999	0.218	0.720
Pharmacovigilance	80.4	19.6	0.628	0.375	0.706

Table 04 summarizes the future career plans of the respondents of which majority are interested in hospital clinical pharmacy(87.9%), moving abroad(85.9%) and pharmacovigilance(80.4%). A fair interest to regulatory affairs(66.8%), research(66.3%), industrial pharmacy(54.3%) and academics(41.7%). Only few were interested in dispensing pharmacy (19.6%) *Fischer exact values, m(Chi-square values*)

## DISCUSSION

Pharmacy has a lot of academic workload during the study period. So, the students have to be clear about completing the course and an unambiguous picture of the various opportunities awaiting them. It was evident from our study that only 29.6% of respondents chose pharmacy as their first choice of program. It is a preference among the crowd that students who obtain high scores in their Higher Secondary Exams 55.8% apply for medicine as their field and those who are unable to secure a seat for medicine enroll for Pharm D or other professions under medicine. As it is seen in our study that 48.7% of respondents have failed to secure a seat through the UG-NEET Entrance exam. In our study it was found that 57.8% and 21.6% of the respondents were influenced to choose Pharm D as their program by their family and friends respectively. 88.4% exhibited an interest to showcase empathy and maintain health welfare for the society. In a similar study conducted in the UK indicated that students were motivated to study pharmacy because it was a science-based field, had a financial reward, as well as it also included personal qualities, experiences, intentions, and values such as wanting to help people.7The above result from our study indicates the interest & knowledge of the family concerning health-oriented fields and the lack of popularity about the course among the young population. In our study it was evident that 81.4% of respondents were passionate to take up science-based courses irrespective of the subject. A similar result was also cited in a study conducted at TaifUniversity, KSA wherein 71.1% of respondents showed the same interest13. From our study it was seen that 58.8% of candidates wanted to pursue the research field and a similar growing trend was observed at a summer research training program in USA [9]. A keen interest

to work and settle abroad was indoctrinated among the respondents with an affirmation of 70.9%, and a similar kind of result was obtained in another study conducted in India [4].

Pharmacy students have various reasons for involving in this course and it is very important to measure the satisfaction of students with their decision to choose Pharmacy. It was clear from the study that 53.3% of the respondents chose pharmacy as it offers fixed and flexible working hours and a related trend was also depicted in the study conducted at Taif University, KSA13. From our study it was evident that 59.8% of respondents were ambitious towards Pharmacy. The genuine unalloyed interest and passion towards the course was showcased to be 45.7% of the respondents were asked whether they would choose pharmacy if given another chance. Apart from this, 38.7% of respondents reported their discontentment to choose Pharmacy. Possible explanations for this could be the unawareness among students about the obstacles and intense academic workloads that they must encounter to study Pharm D, or they considered career opportunities are bleak for Pharmacy graduates. Similar findings were recorded in Jordan regarding studentsfulfillment with their choice of Pharmacy [6].

In the given study 87.9% of respondents were interested to work as hospital clinical pharmacists19.6% as dispensing Pharmacists, in research academia 66.3%, to work outside India 85.9% and few as a faculty member 41.7%. A similar finding was observed at a study conducted for undergraduate pharmacy students at College of Pharmacy, Taif University, KSA which found that a large proportion expressed interest to work as clinical pharmacists 83.2%, 51.3% respondents were

## Research Article

inclined to work as hospital dispensing pharmacist, 60.2% were interested to work in Academia,65% to work outside KSA and 56.4%in research.13In our study the respondents have exhibited an interest to work in a community pharmacy 44.2% and serve as responsible members of the health team. A study was aimed to identify pharmacy student's perceptions towards the value and scope of community pharmacy in Pakistan out of the 85.7% respondents. More than 50% of the respondent realized that working as a community pharmacist is a great responsibility. As the pharmacists have a significant impact on public health and on improving patient's quality of life, therefore the current practice of community pharmacists needs further improvement.14This difference states the willingness of graduates and the students in Kerala, India to work as members of the health care team in a hospital-based setting in patient care, ADR reporting and with pharmacotherapeutic management, in contrast to respondents in the above study wherein working as community pharmacist was preferred. In our study it was found that only 23.6% of the respondents considered working in the pharmaceutical sales and managing, 54.3%in industry, and a greater fraction of 66.8% interested in regulatory affairs and drug registration. A study questionnaire-based about, Pharmacist, pharmaceutical industry and pharmacy education in Saudi Arabia got findings similar to the current study wherein out of the 93.8% respondents, majority of the students (66.7%) chose clinical pharmacy as their future career field while only 10.9% indicated a willingness to work in a pharmaceutical industry career. But 8.2% selected working in the pharmaceutical industry in contrast11. An interest to work in an industry was comparatively higher among the respondents in the given study, but a common view of preferring clinical pharmacists over pharmaceutical sales and marketing was also observed. An increasing trend among the respondents was evident in the given study to undertake Pharmacovigilance 80.4% as their future career choice. A minor portion of the respondents also considered medical writing, cosmetovigilance, pharmacoeconomics, hospital administration, to set up a chain pharmacy and as a hospital clinical analyst as their future career options.

# CONCLUSION

The most influencing factors among the participants regarding the choice of pharmacy were to serve the society, work and settle abroad and to take a science based course. The respondents were more inclined to work as hospital clinical pharmacists particularly outside India and also indulge in Pharmacovigilance which is an affirmation towards the development of Pharm D as a course on a National platform. A keen interest in Research activities were also displayed by the respondents, indicating a new face to emerging new ideas and skills. Willingness to work in a community pharmacy was highly accepted by the respondents irrespective of the gender differences. Regarding the respondent's perception towards the choice of program more than half of the study populations were ambitious towards the Pharmacy field and were satisfied to choose pharmacy as it offers fixed and flexible working hours.

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