

INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH

2023, Vol. 4, No. 2, 663 – 670

<http://dx.doi.org/10.11594/ijmaber.04.02.32>

Research Article

Factors that Influence Career Choice of Graduating Pharmacy Students

Charles Angel G. Gargalicano^{1*}, Hernane Jr. S. Galicia¹, April Aileen Mae Arosa¹, Shania Tyne A. Radadon¹, Florida G. Gargalicano², Phillip Raymund R. De Oca³

¹Pharmacy Department, Riverside College Inc., Negros Occidental, 6100 Philippines

²Science Department, Handumanan National High School, Negros Occidental, 6100 Philippines

³Science, Technology, and Engineering Program, Bacolod City National High School, Negros Occidental, 6100 Philippines

Article history:

Submission October 2022

Revised February 2023

Accepted February 2023

*Corresponding author:

E-mail:

charlesangel1813@gmail.com

ABSTRACT

The adoption of the “nine-star pharmacist” concept by the International Pharmaceutical Federation has transformed the pharmacy practice from a drug and quality control-focused profession to a multifaceted field. However, there is still inequitable pharmacist distribution among career sectors. Also, alarming is the exceeding interest in a specific pharmacy field. Hence, it is crucial to assess pharmacy students' attitudes and preferences toward various pharmaceutical sectors. This descriptive research determined the career preference of 4th- year Pharmacy students of a Private College for Academic year 2021- 2022. It also determined the factors that influence their choice. Data analysis was done using frequency, percentage, mean, Standard Deviation, and Kruskal-Wallis in SPSS. Results revealed that most graduating prefer community pharmacy as their career choice. It also highlighted that experience of the curriculum course, training, influence of family & friends, and knowledge of the career opportunities in various pharmacy fields are factors that influence their career choice. Lastly, career preference alone is not a sufficient indicator to measure influence on choice of pharmacy graduates, and other variables for demographic profiling should be included. Moreover, a support program in the pharmacy curriculum for systematic delivery of information and skills pertinent to effective development of competent professional pharmacists is encouraged.

Keywords: *Career Choice, Faculty-related influence, Job-related influence, Nine Star Pharmacist, Personal-related influence, 4th Year Pharmacy Students*

How to cite:

Gargalicano, C. A. G., Galicia, H. Jr. S., Arosa, A. A. M., Radadon, S. T. A., Gargalicano², F. G., & De Oca, P. R. R. (2023). Factors that Influence Career Choice of Graduating Pharmacy Students. *International Journal of Multidisciplinary: Applied Business and Education Research*. 4(2), 663 – 670. doi: 10.11594/ijmaber.04.02.32

Introduction

The field of Pharmacy is not exempted from strategic economic transformation, changes in the labor market, and the educational system (Alhomoud et al., 2019; Alruthia et al., 2018). The advancement of scientific and technological and knowledge, socioeconomic and political changes, the growth and development of National Health Systems, and the birth of clinical pharmacy and pharmaceutical care have all contributed to the evolution of the pharmaceutical profession (Perri, 2017; Zebroski; 2015).

Pharmacists' responsibilities were initially confined to compounding, quality control, and dispensing until the twentieth century (Arbab et al., 2022). But the professional practice has adapted itself to changes in the health care system and social needs expanding into new areas such as community pharmacy, hospital pharmacy, pharmaceutical industry, regulatory control, drug management, and academic activity (Ilardo and Speciale, 2020.)

The World Health Organization (WHO) came up with the term "seven-star pharmacist" in 1997 to describe several tasks that a pharmacist must play, including caretaker, decision-maker, communicator, manager, lifelong learner, teacher, and leader. It was later turned into the "nine-star pharmacist" that covers roles pharmacist must perform (Arbab et al., 2022; Wiedenmayer, 2006). Later adopted by the International Pharmaceutical Federation (IPF), it transformed the practice from a drug and quality control focused profession to include patient case and service-drive profession (Arbab et al., 2022; Hanna, 2016; Savage, 2009; Wiedenmayer, 2006) With the adoption of the framework, the pharmacy field became multifaceted and different various career domains were established.

Now a multi-disciplinary sector, more career opportunities are opened for work among pharmacy graduates. It provided many opportunities for pharmacists from the pharmaceutical industry, (e.g. sales and marketing, scientific office, manufacturing site, or licensing and regulation department), regulatory activities (Food and Drug Authority for drug evaluation, Good Manufacturing Practice [GMP] inspection, customs release, and pharmacovigilance), academia and traditional settings, such as

hospital and community pharmacies (Al-jedai, 2016).

However, despite the regulation of the profession, there is still workforce shortage in Abstract different pharmacy fields (Alhomoud et al., 2019). Pharmacists in the field are not equally activated. Factors like salary, allowance benefits, advanced services, and high job satisfaction notably attract graduates only in selected fields (Raja'a et al., 2019). High salaries and other allowance benefits have also drawn more graduates into sales and marketing jobs (Nazer and Tuffaha, 2017).

Career satisfaction is also low in community pharmacies (Kheir et al., 2008; Al-jedai et al., 2016). In Saudi Arabia, most pharmacists prefer the hospital setting where pharmacy practitioners are well paid and services are well advanced (Al-jedai et al., 2016). Also, pharmacy graduates in Saudi tend to avoid the community pharmacy sector as remuneration and service facilities are not advance compared to hospitals (Alhomoud et al., 2019). In another study, Saudi pharmacists prefer career in hospitals followed by academia and research centers (Alhomoud et al., 2019).

In the literature review, the unequitable pharmacist distribution is highlighted among different career domains to satisfy community needs (Arbab et al., 2022). Exceeding interest to a specific field of pharmacy students is alarming. Thus, it is crucial to assess pharmacy students' attitudes and preferences toward various pharmaceutical sectors as a starting point for developing strategies in educational institutions to collaborate on various programs and lectures to expand pharmacy students' capabilities to meet the needs of various sectors and change their mindset about various pharmacy sectors. Since career preference is not established in a forthright process and is influenced by different factors, this study is proposed to increase graduating pharmacy students' awareness about their career planning in the field so they become successful.

The present study aims to determine the career preference of graduating students of a private college for Academic year 2021- 2022. It also aims to determine the factors that influence their choice. Specifically, it answers the following objectives:

1. To determine the demographic profile of students in terms of the variable career preference.
 - a) Post-graduate Study (Medical Doctor)
 - b) Clinical pharmacy
 - c) Manufacturing pharmacy
 - d) Community pharmacy
 - e) Hospital pharmacy
2. To determine the factors that influence the career choice of students when are grouped according to:
 - a) Faculty-related influence
 - b) Personal-related influence
 - c) Job-related influence
3. To determine the significant difference between the demographic profile of students and the factors that affect the preference of students in their preferred pharmacy-related field when grouped according to faculty-related influence, personal-related influence, and job-related influence.

Methods

Research Design

This study used a descriptive research method, which according to McCombes (2019), describes a population, situation, or phenomenon accurately and only observes and measures the variables. It sought to describe the influence of factors faculty-related influence, personal-related influence, and job-related influence on the career preference of graduating students of a private college. It also employed inferential statistics to analyze differences on influence of factors based on career preference.

Respondents and Sampling

Respondents of this study are the 64 graduating students of a private college. Total population sampling was used due to their limited number. They come from four sections with the distribution presented below:

Table 1. Distribution of respondents

Section	N	%
Statins A	19	30
Statins B	20	31
Sartan A	18	28
Sartan B	7	11
Total	64	100

Research Instrument

A researcher-made survey questionnaire with 4 parts was used. First part of the questionnaire gathered data on profile of respondents. The second, third, and fourth parts focused on determining the influence of factors: faculty-related influence, personal-related influence, and job-related influence on the career preference of 4th year Pharmacy students. Each part has 10 items with four-point scale. The instrument was subjected to face validity facilitated by experts in both research and pharmacy practice. Revisions were made based on the evaluation of experts. On the instrument's reliability, pre-administration was done among (30) students from a Pharmacy department of another school within the city. The questionnaire's validity was 1.22 overall, thus, it is brief, interesting and has items that can gather data fit to answer the objectives. While alpha coefficient was 0.821, interpreted as "Excellent", indicative that the items have greater internal consistency.

Data Gathering Procedures and Ethical Considerations

Permission letters were submitted to the program head of the Department of Pharmacy and the College Dean. Approval of the study was also secured from the ethics board of the school. Granted approval, and the validity & reliability of the instrument, list of students and their distribution in every section were requested. With the population identified, respondents were gathered via Messenger for orientation, and for them to receive the survey link in Google Forms with simplified instructions and partake in the study. A five-day timeframe in answering was set. The answers were categorized with frequency and percentage and statistically analyzed. After which, the tabulation of the mean and standard deviation was derived. Kruskal-Wallis was then used as inferential statistics.

Results and Discussion

As total population sampling is employed, all 64 graduating pharmacy students of a private college responded in the questionnaire

representing a 100% response rate. To the knowledge of researchers, this is the first attempt to evaluate preferred career domains

of pharmacy students in the region of the country.

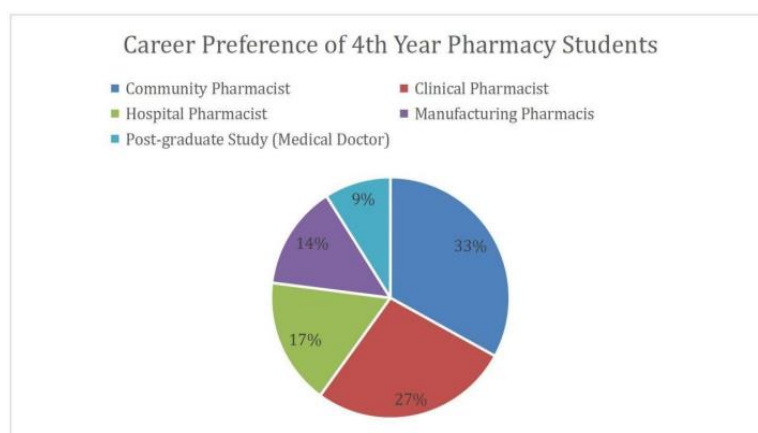


Figure 1. Career Preference of graduating students

A study done in Kingdom of Saudi Arabia found that pharmacy students prefer hospital pharmacy practice (Al-Wazaify et al., 2006; Bin Saleh et al., 2015). Likewise, a significant number of pharmacy students in the Southern and Northern provinces of Saudi Arabia chose hospital pharmacies as their preferred area of practice, since like clinical practice, they can enjoy good remuneration and job opportunities. It may be attributed to the fact that most of the pharmacy schools offer clinically oriented course content and curriculum focused towards hospital pharmacy administration, such may have a strong influence on students to select a clinical-based career in hospitals.

The pharmacy field is multi-disciplinary which is evident in the preference of other students selecting manufacturing pharmacy (N=11; 17%). According to Jarab et al. (2021), the pharmaceutical industry is booming. As a result, it strengthens the economy that can increase salaries of pharmacists working in the field. In the United States, the highest paid manufacturing sector pharmaceutical manufacturing. With high salary, it makes the sector attractive and influential to the career choice of pharmacy students (Rollins, 2014). Lastly, the least desired career direction for most pharmacy

students is the pursuit of a medical degree having (N=6; 9%). In the study of Hanna et al. (2016), pharmacy students enrolled in a pharmacy program were looking forward to a career in pharmacy with progressions in the same field, hence, any desire to advance in the medical field outside of the pharmacy profession is limited.

Table 2 shows the factors that influence career preference of graduating students were classified into 3 different categories, the faculty related choice, personal related influence, and job-related influence. Evaluation of factors are across all career preferences systematically identified in literature. Overall mean values indicate that graduating students regardless of their career preference agree that factors faculty related choice with (M=3.05; SD = 0.481), personal related influence with (M=2.82; SD = 0.657) and job-related influence with (M=3.14; SD = 0.538) all have influence in their career inclination in the pharmacy field. Results are similar to those studies conducted among pharmacy students in Jordan (Raja'a et al., 2019; Jarab et al., 2021), Saudi Arabia (Alhomoud et al., 2019), and Malaysia (Hasan et al., 2010; Maharajan et al., 2017).

Table 2. Factors that influence career preference of 4th year pharmacy students

Career Preference	Factors	N	Mean	SD	Interpretation
Post-graduate Study (Medical Doctor)	Faculty Related Choice	6	2.75	0.418	Agree
	Personal Influence	6	2.75	0.689	Agree
	Job-Related Influence	6	3.00	0.316	Agree
Clinical Pharmacy	Faculty Related Choice	17	3.06	0.429	Agree
	Personal Influence	17	2.82	0.611	Agree
	Job-Related Influence	17	3.11	0.650	Agree
Manufacturing Pharmacy	Faculty Related Choice	9	3.17	0.354	Agree
	Personal Influence	9	3.00	0.750	Agree
	Job-Related Influence	9	3.22	0.441	Agree
Community Pharmacy	Faculty Related Choice	21	3.11	0.522	Agree
	Personal Influence	21	2.81	0.680	Agree
	Job-Related Influence	21	3.14	0.573	Agree
Hospital Pharmacy	Faculty Related Choice	11	3.00	0.592	Agree
	Personal Influence	11	2.73	0.684	Agree
	Job-Related Influence	11	3.18	0.513	Agree
Mean of Means	Faculty Related Choice	64	3.05	0.481	Agree
	Personal Influence	64	2.82	0.657	Agree
	Job-Related Influence	64	3.14	0.538	Agree

Range of value for Interpretation:
3.26 to 4.00- Strongly Agree 1.76-2.50- Disagree
2.51- 3.25- Agree 1.01-1.75- Strongly Disagree

There is agreement among all respondents that selection of a pharmacy career is influenced by faculty related factors. One of the items with the highest response is on the ability of the program to assist students on the development of skills and capacity suited to relevant job prospects in the pharmacy field. When investigating motivational factors, Arbab et al., (2021) stated that training in the workplace, followed by a curriculum course, and trainings at partner hospitals had a significant impact on career choice of students. The findings on faculty related choice draws attention to the importance of workplace-based learning/training and curriculum support on students (Saleh et al., 2015). It highlights a workplace-based

learning that has been a serious concern in health professional education (Huyssteen and Bheekie, 2017).

Respondents also agree that their personal and family related influence are significant in their career choice. It corroborates with research results in a study done in Saudi Arabia that reported influence of family members as factor (Alhomoud et al., 2019). In contrast however, is another study in United Arab Emirates which ranked influence by family members and friends as minor factor (Sharif and Sharif, 2014). Lastly, on job related influence, career choice in the pharmacy field is highly influenced by salary, advancement, job promotion flexible work schedule, and openings based on

the responses of graduating students. Findings are consistent with studies in Saudi Arabia (Almaghaslah et al., 2021; Alhomoud et al., 2019, Saleh et al., 2015). In the results of Table 1. Factors that Influence Career Preference of 4thYear Pharmacy Students. Alhomoud et al.,

(2019), it was noted that facilities in the workplace for scholarly development is also another factor influencing the choice of students. Moreover, work scheduling flexibility was also an important factor for selection of career (Savage et al., 2009)

Table 3. Inferential analysis on the difference of factors that influence career preference of 4th year pharmacy students

Factors	Career Preference	Mean	SD	F	p	decision
Faculty Related Choice	Post-graduate Study (Medical Doctor)	2.75	0.418	0.846	0.502	Accept H0
	Clinical pharmacy	3.06	0.429			
	Manufacturing pharmacy	3.17	0.354			
	Community pharmacy	3.11	0.522			
	Hospital pharmacy	3.00	0.592			
Personal Related Influence	Post-graduate Study (Medical Doctor)	2.75	0.689	0.23	0.92	Accept H0
	Clinical pharmacy	2.82	0.611			
	Manufacturing pharmacy	3.00	0.750			
	Community pharmacy	2.81	0.680			
	Hospital pharmacy	2.73	0.684			
Job-Related Influence	Post-graduate Study (Medical Doctor)	3.00	0.316	0.169	0.953	Accept H0
	Clinical pharmacy	3.11	0.650			
	Manufacturing pharmacy	3.22	0.441			
	Community pharmacy	3.14	0.573			
	Hospital pharmacy	3.18	0.513			

Interpretation: P-value is significant at ≤ 0.05 .

Table 3 shows the variable career preference was used as a determinant for analysis of the significant difference of factors that influence Career Preference of graduating students. Obtained (F=0.846; p=0.502) for faculty related choices, (F=0.23; p=0.92) for personal related influence, and (F=0.169; p=0.953) for job-related influence are all interpreted as not significant at 0.05 alpha. Hence, the hypothesis is accepted. This suggests that career preference is not an indicator for determination of how factors influence choice of pharmacy careers of students. Likewise, it does not affect the choice

of career. Findings are confirmed by the study of Alhomoud et al., (2019), which obtained the same results using similar variables.

While other studies revealed that work environment and advancement opportunities in pharmacy skills and knowledge are influential factors, there are others that highlight salary, job promotions, job opening, and personal interest as important factors. However, in this study, almost all students agree that the established factors equally contribute to their career directions in the pharmacy field (Mohammad et al., 2012).

Discussions

The following are the results summarized. On career preference of pharmacy students, community pharmacy was the most desired choice. It is followed by clinical pharmacy. A pharmacy career in the hospital is also preferred by some students ranking it third in the list. Other students also responded that a career in the pharmaceutical manufacturing field is also their preference. Lastly, the least desired field among graduating students of a private college is the pursuit of a medical degree as they are more focused on advancing their careers in the pharmacy field.

Established factors identified from literature such as faculty related choice, personal related influence and job-related influence all have impact in the career inclination of graduating students. Training in the workplace and curriculum course are important factors of faculty related choice, while family members are important aspects that contribute to personal related influence. Also, for job-related influence, salary, advancement, job promotion, flexible work schedule, and openings stimulate pharmacy students' choice of career. Moreover, there is no significant difference in the results across three areas. Hence, career preference is not an indicator for determination of how factors influence choice of pharmacy careers of students.

Conclusion

This study provides an insight on the factors that affect the preference of pharmacy students in their careers. Based on the findings, the following conclusions are advanced.

Most graduating pharmacy students prefer community pharmacy because it is the most accessible primary health care facility in city where they can practice and learn as students. Therefore, the nature of the community, the available industry associated with the pharmacy field, relevant training and readiness are contributing elements that were found to have influence on the career choice of students.

The study highlighted a baseline understanding that the following: experience of the curriculum course, training, influence of family & friends, and knowledge of the career oppor-

tunities in various pharmacy fields are all essential factors that guide each pharmacy graduate. Hence, a support program in the pharmacy curriculum for systematic delivery of information and skills pertinent to effective development of competent professional pharmacists is encouraged.

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