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Postgraduate Plans of Thai Undergraduate Pharmacy Students (แผนการศึกษาระดับหลังปริญญาตรีของนักศึกษาเภสัชศาสตร์ไทย)

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ประชุมพันธ์

ORIGINAL ARTICLE

Postgraduate Plans of Thai Undergraduate Pharmacy Students

*Nawarut Charupatanapong**

*Karen L. Rascati**

ABSTRACT

The purpose of this study was to determine the plans of fourth and fifth-year Thai pharmacy students upon graduation, with special interest given to those planning to continue their education at a graduate level. A survey was distributed to pharmacy students at Chulalongkorn and Mahidol Universities, and 350 completed surveys were returned. Approximately 41% of Thai students plan to practice in the hospital setting, while 25% plan to become a medical representative and 24% plan to work in the pharmaceutical industry. A total of 35% indicated that they plan to continue their education at the graduate level, with another 33% as yet undecided. Of those planning to continue, 81% plan to obtain a Masters degree, most commonly in the area of business (45% plan to obtain an MBA). One-third of those planning to continue, plan to pursue a degree in a country other than Thailand, and the majority (87%) of these plan to study in the United States. American educational institutions should be aware of this demand. (Th.J.Pharm.Sci., Vol.14 No.2, 119-125 (1989))

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STUDY OBJECTIVES

The objectives of this study are to determine (1) areas of practice selected by Thai pharmacy students, (2) interest in pursuing a higher degree, (3) motivations and barriers in pursuing a graduate degree, (4) areas of study selected at the graduate level, (5) preferences for graduate study between native and foreign institutions, and (6) differences between Thai and American pharmacy students' plans.

METHODOLOGY

A survey was constructed to determine the postgraduate plans of Thai undergraduate pharmacy students. One objective was to compare Thai pharmacy students and American pharmacy students. Therefore, some questions used in this survey were similar to those used in a previous American study.¹ The questionnaire was written in English, then translated into Thai language by the author and a Thai colleague at The University of Texas College of Pharmacy. It was printed with a Thai font and the final form was a 8 1/2 by 5 1/2 inch booklet.

In December 1987, the author contacted the deans of two schools of pharmacy in Bangkok. A formal letter with a sample of the questionnaire was used to get approval for conducting the study. The day and the time for data collection were selected due to convenience.

In January 1988, the author introduced herself to the students at the end of each class with the approval of the associate dean of students' affairs. For each school, only the fourth- and fifth-year students were surveyed. During the introduction, students were told the topic of the study, how to complete the questionnaire and to return them when finished. Students who did not show up on the class day selected were not included in this study sample.

A total of 350 students completed and returned the questionnaires. In January 1988, all returned questionnaires were brought back to The University of Texas at Austin. Data were keypunched and saved on a file at the university computation center. The SAS (Statistical Analysis System) was used for data analyses. An alpha level of 0.05 was chosen as a significant level in this study.

RESULTS

Demographics Description

Of the 350 Thai pharmacy students, 194 students (55.4%) were from Chulalongkorn University and 156 students (44.6%) were from Mahidol University. A total of 184 were fourth-year students (52.6%), 158 were fifth-year students (45.1%), and 8 students (2.3%) failed to indicate their year of study. Female pharmacy students (N = 214) comprised 61.4 percent of the sample. The average age of the students (N = 339) was 22.21 ± 1.08 years. On the average, students' GPA (N = 333) was 2.70 ± 0.42 on a 4.0 scale. The average GPA for female pharmacy students (2.76 ± 0.42 , N = 206) was higher than male pharmacy students' GPA (2.60 ± 0.41 , N = 127, $p < .01$).

Planned Areas of Practice

Thai pharmacy students were asked to indicate the area of practice they plan to pursue upon graduation. Based on the total number of responses, the top five areas chosen were (1) hospital (41.2%), (2) medical representative (26.5%), (3) industry (23.8%), (4) retail (20.6%), and (5) business owner (3.2%). The top three careers chosen by male pharmacy students were (1) medical representative (37.3%), (2) hospital (34.9%), and (3) industry (19.8%). Female pharmacy students selected hospital (44.6%) as their first choice, industry (26.3%) as the second choice, and retail (23.5%) at the third choice.

Decision To Continue Education At The Graduate Level

The students were asked, "Do you plan to continue your education at the graduate level?" Students who checked "Yes" and "Undecided" were told to complete the rest of the questionnaire. Those who indicated "No" were asked to indicate the reasons why they chose not to continue their

education. Of 350 Thai pharmacy students, 35.1 percent (N = 123) indicated “Yes”, 30.6 percent (N = 107) indicated “No”; 33.4 percent (N = 117) were “Undecided”; and three students failed to answer this question.

When we compared the results in this section with those obtained from American students, 40.7 percent of American pharmacy students (N = 211) indicated “Yes”; 26.4 percent (N = 136) stated “No”; 32.9 percent (N = 171) were undecided; and one student failed to answer the question.

Table 1 describes results controlling for gender. A greater proportion of women (36.8%) than men (31.5%) indicated that they planned to continue their education. Conversely, the American study found a greater percentage of men (47.5%) than women (36.9%) indicated that they planned to continue.

Table 1 : Decision to continue education by **Thai and American** pharmacy students when controlling for gender.

Nation Decision	Thai			American ¹		
	Men	Women	Total	Men	Women	Total
Yes	40 (31.5) [33.9]	78 (36.8) [66.1]	118 (34.8) [100.0]	87 (47.5) [41.4]	123 (36.9) [58.6]	210 (40.7) [100.0]
No	53 (41.7) [50.0]	53 (25.0) [50.0]	106 (31.3) [100.0]	33 (18.0) [24.3]	103 (30.9) [75.7]	136 (26.4) [100.0]
Undecided	34 (26.8) [29.6]	81 (38.2) [70.4]	115 (33.9) [100.0]	63 (34.4) [37.1]	107 (32.1) [62.9]	170 (32.9) [100.0]
Total	127 (100.0) [37.5]	212 (100.0) [62.5]	339* (100.0) [100.0]	183 (99.9) [@] [35.5]	333 (99.9) [@] [64.5]	516** (100.0) [100.0]

Chi-square = 10.8, DF = 2, p ≤ 0.004

* Frequency missing = 11.

Chi-square = 10.9, DF = 2, p ≤ 0.05.

** Frequency missing = 3.

[@] Percent total varies by ± 0.1 due to rounding of value to one decimal place.

1. Shepherd et. al. *Am J Pharm Ed.* vol. 52, 1988.

The top five reasons from students who chose not to continue their education were (1) weak financial status and financial family burden (33.9%); (2) desire to work (30.4%); (3) student burnout (26.1%); (4) having a B.S. degree is sufficient (18.3%); and (5) low GPA (13.9%).*

Several comparisons were done between the “Yes” group and the “Undecided” group. Results showed that there were no statistically significant differences in most of these groups’ responses. The responses compared include: time interval before getting a higher degree (Chi-square = 7.54, DF = 4, p = 0.110), degree chosen (Chi-square = 3.96, DF = 2, p = 0.138), area chosen (Chi-square = 0.38, DF = 2, p = 0.827), and field chosen (Chi-square = 13.88, DF = 8, p = 0.085). Therefore, these two groups were collapsed for further data analyses and the rest of this section will address the results of this collapsed group of 240 respondents.

* Open-ended questions. Some gave more than one response, therefore percentages may add to more than 100 percent.

Motivations to Continue Education

Thai students who plan to continue were asked: "What are the motivations that lead you to continue your education?" Based on the total number of responses, the top five motivations were (1) To gain knowledge (39.4%), (2) To get a job promotion (38.5%), (3) To obtain a higher degree (14.3%), (4) To study an area I am interested in (13.4%), and (5) To gain some experience (6.5%).*

Time Interval Between Undergraduate And Graduate Programs

Half of the Thai pharmacy students (49.8%) plan to continue their higher education 2-5 years after graduation. About one sixth plan to continue their education right after graduation (16.7%) and one year after graduation (15.5%). Conversely, most American pharmacy students (43.1%) plan to continue right after graduation, one-fourth plan to continue one year after graduation (26.3%) and 2-5 years after graduation (23.4%). Table 2 compares these results by gender for both Thai and American pharmacy students.

Table 2 : Time interval between undergraduate and graduate programs by Thai and American students when controlling for gender.

Nation Time	Thai			American ¹		
	Male	Female	Total	Male	Female	Total
Right after	17 (23.3)	22 (13.8)	39 (16.8)	45 (54.2)	45 (38.1)	90 (44.8)
[%]	[43.6]	[56.4]	[100.0]	[50.0]	[50.0]	[100.0]
1 year after	6 (8.2)	30 (18.9)	36 (15.5)	25 (30.1)	30 (25.4)	55 (27.4)
[%]	[16.7]	[83.3]	[100.0]	[45.5]	[54.4]	[100.0]
2-5 years after	44 (60.3)	72 (45.3)	116 (50.0)	8 (9.6)	40 (34.0)	48 (23.9)
[%]	[37.9]	[62.1]	[100.0]	[16.7]	[83.3]	[100.0]
Other	6 (8.2)	35 (22.0)	41 (17.7)	5 (6.0)	3 (2.5)	8 (4.0)
[%]	[14.6]	[85.4]	[100.0]	[62.5]	[37.5]	[100.0]
Total	73 (100.0)	159 (100.0)	232* (100.0)	83 (99.9) [@]	118 (100.0)	201** (100.1) [@]
[%]	[31.5]	[68.5]	[100.0]	[41.3]	[58.7]	[100.0]

Chi-square = 13.95, DF = 3, p ≤ 0.003

* Frequency missing = 8

Chi-square = 15.3, DF = 3, p ≤ 0.05

** Frequency missing = 10

[@] Percent total varies by ± 0.1 due to rounding of value to one decimal place.

1. Shepherd et. al. *Am J Pharm Ed.* vol. 52, 1988.

DEGREE CHOICE

The Thai pharmacy students who planned to continue were asked to indicate the type of graduate degree they wished to pursue. A high percentage of Thai students (81.2%) chose to continue their education at the master's level, while only 3.8 percent selected a doctoral degree, and 12.6 percent selected both degrees. On the other hand, only 6.4 percent of American pharmacy students selected a master's degree,

and 17.1 percent selected a Ph.D. In the American study, the most frequently selected degree was the Pharm.D. followed by the medical degree. Since there is no Pharm.D. degree in Thailand, this choice was not provided for Thai pharmacy students. Also, the medical degree was not provided in the Thai pharmacy students' questionnaires because students who intend to go to medical school retake the nationwide entrance exam during their first two years of prepharmacy. Table 3 describes the degree choice for Thai pharmacy students by gender.

Table 3 : Degree choice by Thai pharmacy students when controlling for gender.

Gender Degree	Male		Female		Total	
	F	%	F	%	F	%
M.S.	53	79.1	135	84.9	188	83.2
Ph.D.	1	1.5	8	5.0	9	4.0
Both	13	19.4	16	10.1	29	12.8
Total	67	100.0	159	100.0	226*	100.0

Chi-square = 4.878, DF = 2, $p \leq 0.087$

* Frequency missing = 14

Area of Graduate Study

Over half of the Thai pharmacy students (55.8%) surveyed, chose to continue their education in the nonpharmacy areas while 40.8 percent chose a pharmacy-related area, and 3.3 percent chose both pharmacy and nonpharmacy areas. When comparing Thai male and female pharmacy students, no significant difference was found (Chi-square = 4.16, DF = 2, $p = 0.125$).

Respondents were then asked to indicate the field of graduate study they plan to pursue. The top five fields chosen were (1) MBA (45.1%), (2) Clinical pharmacy (14.1%), (3) Pharmacology/Toxicology (11.4%), (4) Medicine Chemistry (9.5%), and (5) Pharmacy administration (5.5%).

Institution Chosen (Native vs Foreign Institutions).

Thai pharmacy students were asked if they plan to continue their education at a native or foreign institution. Over half of them (58.8%) chose to study at native institutions; 34.3 percent chose foreign institutions; 6.4 percent selected both; and one student was undecided. No statistically significant difference was found between gender (Chi-square = 1.79, DF = 2, $p = 0.409$) or between those who had a high GPA (> 3.00) and those who had low GPA (< 3.00) (Chi-square = 1.70, DF = 2, $p = 0.428$). However, the results were different when we compared fourth- and the fifth-year pharmacy students. Fifth-year students tended to choose native institutions more often than fourth-year students (Chi-square = 7.27, DF = 2, $p = 0.026$).

Next, students who selected native institutions were asked to indicate the university they would like to attend, while those who selected foreign institutions were asked to indicate the country they preferred. Among the native institutions mentioned, the top three universities selected were (1) Chulalongkorn University (41.1%), (2) Thammasart University (27.4%), and (3) Mahidol University (21.9%)*. For those planning to continue their education outside of Thailand, the top three foreign countries chosen were (1) the United States (87.0%), (2) the United Kingdom (10.8%), and (3) Australia (9.8%)*. It is noted that English is the national language of these three countries.

Finally, the respondents were asked to state the reasons for their choice of institutions. The top five reasons given for choosing native institutions were (1) they are less expensive (58.6%); (2) they are

more convenient (22.9%); (3) I would be able to work while studying (12.1%); (4) I would encounter less adaptation problems (11.4%); and (5) programs in my area of interest are available (10.0%).* When comparing male and female students, their top two reasons were the same. Male pharmacy students cited working while attending college as the third most common factor, whereas female students focused on the problems of adaptation.

For students who selected foreign institutions, the top five reasons were (1) To gain experience (39.4%); (2) To gain language proficiency (23.2%); (3) High technology offered (22.2%); (4) Broad knowledge base (12.1%); and (5) I can afford to attend (7.1%).*

DISCUSSIONS AND CONCLUSIONS

A large percent of Thai students planned to practice pharmacy in a hospital upon graduation. A total of 35% indicated that they planned to continue their education at the graduate level, with another 33% indicating that they were undecided. This is similar to the responses obtained in an American study. A higher percentage of Thai female pharmacy students planned to continue their education when compared with Thai male students, whereas the American study found the opposite. Also most Thai students planned to continue their education 2-5 years after graduation, while most American students planned to continue right after graduation.

The top two motivations to continue are to gain knowledge and to get a job promotion. The top two barriers are weak financial status and the desire to work.

Most of the Thai students chose to continue their education to obtain a masters degree, and many were interested in a nonpharmacy area (mainly business), whereas most American students planned to earn a Pharm.D. About one-third of the respondents indicated that they planned to pursue their graduate studies outside of Thailand, with 87% of these choosing to study in the United States. This indicates that pharmacy schools may be reviewing more applications from Thai pharmacy students, although many may be applying to business schools. Because there are no graduate programs in Pharmacy Administration in Thailand, students may not be aware of the option to learn business skills through a College of Pharmacy. As this field expands in Thailand, one may see more students pursuing this field of study.

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1. Shepherd et al., *Am. J. Pharm. Educ.*, 52, 1(1988).

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แผนการศึกษาระดับหลังปริญญาตรี ของนักศึกษาเภสัชศาสตร์ไทย

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บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์ในการสำรวจแผนการต่าง ๆ หลังจากสำเร็จการศึกษาของนักศึกษาสาขาเภสัชศาสตร์ชั้นปีที่ 4 และชั้นปีที่ 5 ของไทย โดยมุ่งความสนใจให้กับนักศึกษาที่สนใจจะศึกษาต่อในปริญญาชั้นสูงขึ้น ในการสำรวจถามนักศึกษาจากคณะเภสัชศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย และจากมหาวิทยาลัยมหิดล พบว่าจากจำนวน 350 คนที่ตอบสนองการสำรวจ มีร้อยละ 41 ต้องการทำงานในโรงพยาบาล ร้อยละ 25 ต้องการเป็นผู้แทนยา ร้อยละ 24 ต้องการทำงานในโรงงานอุตสาหกรรมยา ร้อยละ 35 มีความต้องการที่จะศึกษาต่อชั้นสูงขึ้น ร้อยละ 33 ยังไม่ตกลงใจ ร้อยละ 81 ของผู้ที่ต้องการศึกษาต่อในชั้นปริญญาโท ส่วนมากจะศึกษาต่อทางด้านธุรกิจ (ร้อยละ 45 ต้องการปริญญาบริหารธุรกิจมหาบัณฑิต) 1 ใน 3 ของผู้ต้องการศึกษาต่อ ต้องการศึกษาในต่างประเทศ ซึ่งส่วนมาก (ร้อยละ 87) ต้องการศึกษาต่อในสหรัฐอเมริกา (ไทยเภสัชสาร ปีที่ 14 (2) : หน้า 119-125 (2532))

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