

Pharmacy Professionalism among Thai Pharmacy Students

Pinyupa Plianbangchang¹, Kultida Chaijinda¹, Apiruk Wongruttanachai¹,
Apinan Sirirattanathorn¹, Kanchalee Jetiyanon²

¹Faculty of Pharmaceutical Sciences, Naresuan University

²Faculty of Agriculture, Natural Resources and Environment, Naresuan University

Abstract

Objective: To survey the level of pharmacy professionalism, and to analyze the relationship between professional socialization and pharmacy professionalism among Thai pharmacy students. **Methods:** Self-administered questionnaires were used as the research instrument. Face validity was assessed by three experts. A pilot study was conducted on 61 pharmacy students. Cronbach's alpha coefficient was used as the measure of instrument reliability. The questionnaires were disseminated to pharmacy students throughout the country between July 2010 and May 2011. Multiple regression was utilized to analyze the relationship between professional socialization and pharmacy professionalism. The level of significance was set at 0.05. **Results:** A total of 1,443 usable questionnaires were received (57.7% response rate). The overall pharmacy professional scores among students was 171.1 ± 14.9 from the possible scores of 42-210, indicating moderate to high professionalism level. The highest score was found in "belief in public service" domain, followed by "belief in continuing education", "the use of professional organization as a major referent", "belief in self-regulation", "belief in autonomy" and "professional commitment" with the lowest score. Professional socialization was positively correlated with overall pharmacy professionalism ($r=0.585$, $p<0.001$). Interaction with preceptors, interaction with peers, out-of-classroom interaction with faculty, perception about faculty concerns, and academic and social growth together accounted for 35.4% of the variability in overall pharmacy professionalism. **Conclusion:** Thai pharmacy students scored highest in belief in public service domain, compared to other domain of pharmacy professionalism. Professional commitment, on the contrary, was scored the least. Professional socialization was a very important predictor of pharmacy professionalism among students. For this reason, pharmacy schools are recommended to place emphasis on such process, along with formal education according to the curriculum.

Keywords: pharmacy professionalism, professional socialization, pharmacy student, pharmacy education

Received 2 Jul 2012, Accepted 27 Aug 2012

Correspondence: Pinyupa Plianbangchang, Department of Pharmacy Practice, Faculty of Pharmaceutical Sciences, Naresuan University, Muang, Phitsanulok 65000. E-mail: pinyupa@nu.ac.th

Introduction

Pharmacy profession in Thailand dated back to 1913 when the first school of pharmacy was established in the reign of King Rama V according to the suggestion of H.R.H. Kromprayachainartnarenthorn. Pharmacy was first recognized as a profession in Thailand in 1935 under the Health Practitioner Control Act of 2478 B.E. (1935 A.D.), and currently is under control of the Pharmacy Profession Act of 2537 B.E. (1994 A.D.). In addition to the law, registered pharmacists in Thailand must comply with the professional code of ethics and Pharmacy Council Regulation on Limitations and Conditions of Pharmacy Profession Practice. During the course of almost a century, pharmacy practice in Thailand, like many other countries, has evolved from its traditional dispensing role to a more patient-oriented, pharmaceutical care-based responsibility.

Professionalism is a dynamic process whereby many occupations can be observed to change certain crucial characteristics in the direction of a profession (1). Professionalism is a multi-dimensional concept, comprising structural and attitudinal characteristics. Previous studies found that pharmacy professionalism was a key determinant to job satisfaction and professional commitment. Pharmacists who reported high levels of professionalism were more likely to dedicate to their practice, and less likely to abandon the profession (2,3).

Professionalism cannot be learned from a textbook. Rather, it must be actively acquired and nurtured through socialization process; the process by which an individual selectively acquires the value, attitudes, interests, skills and knowledge currently prevalent in the profession (4,5). Professional socialization occurs prior to, during professional school years, and continues throughout the practicing years.

Most of pharmacy professionalization process takes place in the university, where high-school students become pharmacy students. Such process occurs in two forms: 1. formal socialization or formal curriculum, and 2. guidance and mentoring or hidden curriculum, which is a variety of indelible messages that a student takes from an experience (6). Hidden curriculum encompasses everything surrounding students throughout their time in pharmacy school, from the atmosphere, infrastructure, and their relationship with peers, faculty members, and school personnel. Hidden curriculum significantly affects knowledge, skills, and instillation of students' affective characteristics (7,8). The process of professional socialization, in turn, shapes students' pharmacy professionalism (8,9).

Previous studies about professionalism among pharmacy students in Thailand mainly focused on the development and validation of instruments (10-12). Lerkiatbundit, in his 2000 longitudinal study, found a strong predictive ability of previous professionalism on current professionalism of pharmacy students (10). Ploylearmsang and associates surveyed 311 pharmacy students and found that academic development through their institutional experience, leadership in emotional control, and pride in the pharmacy profession were important in explaining students' professionalism (11). Chaichalermpong conducted a survey on pharmacy students from six public universities to explore their professionalism in 2004 (8). However, the study did not explicitly analyze the relationship between professionalism and professional socialization. The current situations of the profession such as the Pharmacy Council enforcement of six-year pharmacy curriculum by the year 2014 (13), the tension among various practicing fields of pharmacy, and a negative image that the "officially present but physically absent" community pharmacists, might change students' perception about their profession. For this reason, this

study was aimed at exploring the level of pharmacy professionalism, and analyzing the relationship between professional socialization and pharmacy professionalism among the Thai pharmacy students throughout the country using scales that have been constructed and validated in Thai pharmacy students (10,11). The results from this study will be highly useful for pharmacy educators and the Pharmacy Council to better understand the current professional level among students and its relation to professional socialization.

Methods

Study design

This study was cross-sectional and descriptive in nature. The data were collected between July 2010 and May 2011. The study protocol was approved by the Naresuan University Research Ethics Committee.

Study population and sample

The study population consisted of full-time pharmacy students in academic year 2010 from 18 pharmacy institutions throughout the country. The sample size, calculated according to the recommendation by Barlett and colleagues (14) ($t=1.96$, $\alpha=0.05$, standard deviation=5/4, margin of error=1%), was 2,401. Taking into account the number of study population larger than 10,000, the final sample size was 1,964. The questionnaires were distributed to 18 pharmacy schools proportionately to their number of students. Eligible respondents were students registered at one of the 18 schools in academic year 2010. Respondents who failed to answer at least half of the questions were excluded from the study.

Instrumentation

Pharmacy Professionalism Scale

The 42-item Pharmacy Professionalism scale used in this study was developed by Lerkiatbundit (10). The scale focuses on attitudinal attributes of professionalism, and is divided into six domains, i.e.,

use of the professional organization as a major referent; belief in public service; belief in self-regulation; professional commitment; belief in autonomy; and belief in continuing education. Each domain contains seven items in five-point Likert-type scale (1=strongly disagree to 5=strongly agree). The scale was validated in a Thai sample with satisfactory results (12).

Professional Socialization Scale

The scale was developed by Ploylearmsang and associates (11). It consists of 30 five-point Likert-type items (1=strongly disagree to 5=strongly agree) in five domains. The domains are interaction with peers (six items); out-of-classroom interaction with faculty (five items); academic and social growth (nine items); perception about faculty concerns (five items); and interaction with preceptors (five items). The validation of this scale in a Thai sample showed acceptable results (11).

Scale Reliability

The questionnaire was pilot-tested in 61 pharmacy students at Neresuan University. Cronbach's alphas for pharmacy professional subscales ranged from 0.708 to 0.803, and from 0.654 to 0.855 for professional socialization subscale.

Data collection and management

The researchers asked for permission to collect data from the Deans of 18 pharmacy schools throughout Thailand. When permission was granted, questionnaires were sent in bulk to pre-contacted coordinators at each school. The coordinators disseminated the questionnaires to their students, collected the filled questionnaires, and sent them back to the researchers in bulk.

Data Analysis

Descriptive statistics was utilized to describe respondents' characteristics and their level of pharmacy professionalism. Pearson correlation coefficient (r) was used to describe bivariate relationship between

professional socialization and pharmacy professionalism. Due to large sample size, r equal to or greater than 0.3 (moderate correlation) would be regarded as practically significant (15). Stepwise multiple regression analysis was used to analyze the relationship between the domains in professional socialization scale and pharmacy professionalism. The significant level needed to enter a variable into the equation (P-IN) and the significant level needed to avoid removal a variable in backward selection (P-OUT) were set at 0.05 and 0.10, respectively.

Results

Of 18 schools of pharmacy surveyed, a total of 1,443 usable questionnaires were received from thirteen—ten public and three private institutions. The final response rate was 57.7%. The participation rate of students ranged from 33 to 100% for public, and 70 to

96% for private schools. The majority of respondents were female (1,098; 76.1%) and being a student in public institutions (1,205; 83.6%). Most of the respondents were in year one to five, with 60 students (4.2%) in year 6. The average age of the respondents was 20.7 ± 2.2 years, with an average GPA of 3.179 ± 0.485 .

Scale reliability is shown in Table 1. Cronbach's alphas of pharmacy professionalism scale ranged from 0.645 to 0.872, and from 0.702 to 0.895 for professional socialization scale.

Respondents reported the average overall pharmacy professionalism score of 171.14 ± 14.92 from the possible scores of 42-210. The highest score was found in "belief in public service" domain (31.74 ± 3.20), followed by "belief in continuing education" (28.91 ± 4.65), "the use of professional organization as a

Table 1. Pharmacy professionalism and professional socialization among students

Domain	Possible Range	Cronbach's Alpha	Mean \pm SD
Pharmacy Professionalism			
Professional Organization	7-35	0.838	28.66 \pm 3.41
Public Service	7-35	0.872	31.74 \pm 3.20
Self Regulation	7-35	0.848	27.54 \pm 4.72
Professional Commitment	7-35	0.800	26.89 \pm 4.49
Autonomy	7-35	0.645	27.50 \pm 4.11
Continuing Education	7-35	0.795	28.91 \pm 4.65
Overall	42-210	n/a	171.14 \pm 14.92
Professional Socialization			
Interaction with Peers	6-30	0.718	22.55 \pm 2.85
Out-of-classroom Interaction with Faculty	5-25	0.852	20.20 \pm 3.04
Academic and Social Growth	9-45	0.749	33.98 \pm 3.89
Perceived about Faculty Concerns	5-25	0.702	16.84 \pm 3.45
Interaction with Preceptors	5-25	0.895	21.41 \pm 2.78
Overall	30-150	n/a	114.99 \pm 11.10

major referent" (28.66 ± 3.41), "belief in self-regulation" (27.54 ± 4.72) and "belief in autonomy" (27.50 ± 4.11). The dimension "professional commitment" scored the lowest (26.89 ± 4.49).

When bivariate correlation was examined, overall professional socialization was positively correlated with overall pharmacy professionalism with $r=0.585$ ($p<0.001$). When each domain of professional socialization was used as independent variables in explaining pharmacy professionalism, the results are shown in Table 2. These five domains together could explain 35.4% of the variability in students' pharmacy professionalism.

Conclusion and suggestions for further research

Pharmacy students in Thailand reported their level of pharmacy professionalism to be 171.14 ± 14.92 from the possible scores of 42-210, indicating moderate to high level of professionalism. Belief in public service received the highest score among six domains, whereas professional commitment received the lowest score. Professional socialization positively correlated with pharmacy professionalism. Interaction with preceptors, interaction with peers, out-of-classroom interaction with faculty, perception about faculty concerns, and academic and social growth together

could account for 35.4% of the variability in overall pharmacy professionalism.

Before discussion, three limitations should be disclosed. First, the number of questionnaires received (1,443) was fewer than that needed to achieve appropriate statistical power (or 1,964). Second, from 18 schools of pharmacy surveyed, only 13 returned the questionnaires (ten public and three private schools). Considering the population of thirteen public and five private schools, the proportion of participated public to private schools was approximate to that in the population. Third, the number of sixth-year students in this sample was small and they were likely to be under-represented. Most of these students were on rotations at various institutions, where the site coordinators reported difficulty in contacting them. The readers are advised to consider these limitations when interpreting and generalizing the results of this study.

The level of overall professionalism as measured in this study was moderate to high, and approximately at the same level as that reported by Lerkiatbundit (10). Moreover, the two highest scored domains were identical in the two studies, i.e., belief in public service and belief in continuing education, indicating relatively stable belief held among pharmacy students in Thailand.

Professional commitment, defined by Blau (16) as "one's attitude toward one's profession or vocation",

Table 2. Stepwise regression analysis to explain pharmacy professionalism

Variable	Unstandardized regression coefficient	Standardized regression coefficient	t	p-value
Interaction with preceptors	1.496	0.258	6.367	<0.001
Interaction with peers	0.990	0.175	4.342	<0.001
Out-of-classroom interaction with faculty	0.785	0.147	3.597	<0.001
Perceived about faculty concerns	0.722	0.155	4.125	<0.001
Academic and social growth	0.520	0.125	2.736	0.006

received the lowest scores of the six domains. Professional commitment is distinct from organizational commitment or job satisfaction. It refers specifically to the strength of one's motivation to work in a chosen career role (17). In this study, it is hypothesized after the fact that inconsistent socialization, the clash between the forces of socialization (18), might negatively affect students' professional commitment. Inconsistent socialization occurred from a clash between the forces of socialization. Throughout the time they spend in pharmacy school, students receive mixed messages from academic and non-academic sources. The former emphasizes positive aspects of the profession in the society. This creates disillusionment among learners (19). Unfortunately, the level of idealism and optimism diminishes as students progress through the curriculum from their experience in the real world. Unethical conducts of practicing pharmacists, limitations on pharmaceutical care delivery in the real world settings, and disagreement among members of the profession regarding its direction are but few examples. Such phenomenon might negatively affect students' aspirations to enter pharmacy profession as they graduate. This hypothesis needs to be proven in further studies.

Professional socialization was positively correlated with professionalism among pharmacy students. The finding was in congruence with that of Lerkiatbundit (10) and Ploylearmsang and colleagues (11). Professional socialization could be divided into two forms: formal and informal socialization (19). Formal socialization, such as various subjects in pharmacy curriculum, is aimed at equipping students with the knowledge and skills appropriate for their future practice. Informal socialization or hidden curriculum encompasses the whole environment and atmosphere within which students spend their time during pharmacy

school years. This form of socialization shaped students' values, attitudes, and behavior that would help them get through pharmacy schools with the least pain (20). The instrument utilized in this study specifically focuses on the latter aspect of professional socialization. Further studies should pay attention on measuring the influence of formal socialization on students' professionalism. Unfortunately, a significant limitation hindering such study is the frequent amendments of pharmacy curricula throughout the country from various causes. This tremendously hinders meaningful evaluation of the effect of a curriculum on graduates and their professionalism.

The concept of pharmacy professionalism has received little attention from researchers and responsible bodies of pharmacy profession, compared to those of medical and nursing professions. To date, no consensus on the definition of pharmacy professionalism has been declared. Existing literature mainly focused on the concept of professional ethics, which is part of professionalism. The results from this study clearly indicated that socialization significantly affects students' professionalism.

Acknowledgments

This study was financially supported by Naresuan University Research Fund. Sincere appreciation goes to all institutional coordinators, whose industrious assistance brought success to this project.

References

1. Vollmer HM, Mill DL, editors. Professionalisation. Englewood Cliffs, NJ: Prentice-Hall; 1966.
2. Kerr S, von Glinow MA, Schiesheim J. Issues in the study of professionals in organization: the case of scientists and engineers. *Organ Behav Hum Perf* 1977;18:329-45.

3. Bartol KM. Professionalism as a predictor of organizational commitment, role stress, and turnover: a multidimensional approach. *Acad Manage J* 1979;22:815-21.
4. Snizek WE. Hall's professionalism scale: an empirical reassessment. *Am Sociol Rev* 1972;37:109-14.
5. Hammer DP. Professional attitudes and behavior: the "A's and B's" of professionalism. *Am J Pharm Educ* 2000;64:455-64.
6. Anderson DJ. The hidden curriculum. *AJR* 1992;159:21-2.
7. Karnieli-Miller O, Vu R, Holtman MC, Clyman SG, Inui TS. Medical students' professionalism narratives: a window on the informal and hidden curriculum. *Acad Med* 2010;85:124-33.
8. Chaichalermpong W. Factors affecting learning outcomes from hidden curriculum which influence professionalism of pharmacy students [dissertation]. Bangkok: Chulalongkorn University; 2004.
9. American College of Clinical Pharmacy. ACCP white paper: development of student professionalism. *Pharmacotherapy* 2009;29:749-56.
10. Lerkiatbundit S. Professionalism in Thai pharmacy students. *J Soc Admin Pharm* 2000;17:51-8.
11. Ploylearmsang C, Satayavongthip B, Suttajit S, Arpasrithongsakul S. Students' professionalism and leadership influenced by pharmacy education and institutional socialization. *Isan Journal of Pharmaceutical Sciences* 2006;2:1-12.
12. Lerkiatbundit S. Factor structure and cross-validation of a professionalism scale in pharmacy students. *Journal of Pharmacy Teaching* 2005;12:25-49.
13. The Pharmacy Council regulation on pharmacy curriculum and certificate, or pharmacy profession diploma of various institutions for the purpose of membership application of 2551 B.E. *Government Gazette*. No 125 Special Section 67 D. 3 April 2008.
14. Bartlett JE, Kotrlik JW, Higgins CC. Organizational research: determining appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal* 2001;19:43-50.
15. Cohen J. *Statistical power analysis for the behavioral sciences*. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum; 1998.
16. Blau GJ. Further exploring the meaning and measurement of career commitment. *J Voc Beh* 1988;32:284-97.
17. Fjortoft NF, Lee MWL. Developing and testing a model of professional commitment. *Am J Pharm Educ* 1994;58:370-8.
18. Manesse HR, Stewart JE, Hall RH. Inconsistent socialization in pharmacy—a pattern in need of change. In: Wetheimer AI, Smith MC, editors. *Pharmacy practice: social and behavioral aspects*. 2nd ed. Baltimore, MD: University Park Press; 1981. p. 37-54.
19. Schwirian PM, Facchinetti NJ. Professional socialization and disillusionment: case of pharmacy. *Am J Pharm Educ* 1975;39:18-23.
20. Jackson J. Normative power and conflict potential. *Sociol Method Res* 1975;4:237-63.

ความเป็นวิชาชีพเภสัชกรรมของนิสิตนักศึกษาเภสัชศาสตร์ในประเทศไทย

ภิญญา เปลี่ยนบางช้าง¹ กุลธิดา ไชยจินดา¹ อภิรักษ์ วงศ์รัตนชัย¹ อภินันท์ สิริรัตนธรร¹ กัญชลี เจริญานนท์²

¹ คณะเภสัชศาสตร์ มหาวิทยาลัยนเรศวร

² คณะเกษตรศาสตร์ ทรัพยากรธรรมชาติและสิ่งแวดล้อม มหาวิทยาลัยนเรศวร

บทคัดย่อ

วัตถุประสงค์: เพื่อสำรวจระดับความเป็นวิชาชีพเภสัชกรรมและวิเคราะห์ความสัมพันธ์ระหว่างการขัดเกลาทางวิชาชีพ กับความเป็นวิชาชีพของนิสิตนักศึกษาเภสัชศาสตร์ในประเทศไทย **วิธีการวิจัย:** การสำรวจใช้แบบสอบถามชนิดกรอกด้วยตนเอง ซึ่งผ่านการประเมินความตรงเชิงผิวหน้าโดยผู้เชี่ยวชาญ 3 คน และผ่านการศึกษานำร่องในนิสิตคณะเภสัชศาสตร์ 61 คน การประเมินความเชื่อมั่นของเครื่องมือใช้ค่าครอนบาค์ อัลฟา ผู้วิจัยเก็บข้อมูลจากนิสิตนักศึกษาในหลักสูตรเภสัชศาสตร์บัณฑิตทั่วประเทศระหว่างเดือนกรกฎาคม 2553 ถึงพฤษภาคม 2554 การวิเคราะห์ความสัมพันธ์ระหว่างการขัดเกลาทางวิชาชีพกับความเป็นวิชาชีพเภสัชกรรมใช้การวิเคราะห์ถดถอยพหุ โดยกำหนดระดับนัยสำคัญของการวิเคราะห์ที่ 0.05 **ผลการวิจัย:** นิสิตนักศึกษาให้ความร่วมมือตอบแบบสอบถามที่นำมาวิเคราะห์ได้ทั้งสิ้น 1,443 คน คิดเป็นอัตราการตอบกลับร้อยละ 57.7 เมื่อพิจารณาในภาพรวม นิสิตนักศึกษามีคะแนนความเป็นวิชาชีพเภสัชกรรม 171.1 ± 14.9 คะแนน จากคะแนนที่เป็นไปได้ 42-210 คะแนน นับว่าอยู่ในระดับปานกลางถึงสูง นิสิตนักศึกษามีระดับความเป็นวิชาชีพสูงสุดในมิติ “ความเชื่อมั่นในความสำคัญของวิชาชีพต่อสังคม” ตามด้วย “ความเชื่อมั่นในความสำคัญของการศึกษาต่อเนื่อง” “การยอมรับองค์กรทางวิชาชีพและมาตรฐานต่างๆ ขององค์กร” “ความเชื่อว่าวิชาชีพควรปกครองตนเองโดยบุคคลในวิชาชีพ” “ความเชื่อว่าการประกอบวิชาชีพควรมีความเป็นอิสระ” และ “ความผูกพันต่อวิชาชีพและความภูมิใจที่ได้อยู่ในวิชาชีพ” ซึ่งมีคะแนนต่ำสุด การขัดเกลาทางวิชาชีพมีความสัมพันธ์เชิงบวกกับความเป็นวิชาชีพของนิสิตนักศึกษาเภสัชศาสตร์ ($r=0.585$, $p<0.001$) เมื่อพิจารณาอำนาจการทำนายพบว่า ปฏิสัมพันธ์กับอาจารย์แหล่งฝึกทักษะเชิงวิชาชีพ ปฏิสัมพันธ์กับเพื่อน ปฏิสัมพันธ์นอกชั้นเรียนกับอาจารย์ การรับรู้ว่าอาจารย์ใส่ใจในพัฒนาการของตนเอง และพัฒนาการด้านองค์ความรู้และสังคม สามารถร่วมกันทำนายความผันแปรของความเป็นวิชาชีพเภสัชกรรมของนิสิตนักศึกษาได้ร้อยละ 35.4 **สรุป:** นิสิตนักศึกษาเภสัชศาสตร์มีคะแนนในมิติความสำคัญของวิชาชีพเภสัชกรรมต่อสังคมสูงที่สุด และมีความผูกพันต่อวิชาชีพและความภูมิใจที่ได้อยู่ในวิชาชีพน้อยที่สุดเมื่อเทียบกับมิติอื่น การขัดเกลาทางวิชาชีพเป็นตัวทำนายที่สำคัญต่อความเป็นวิชาชีพเภสัชกรรมของนิสิตนักศึกษา ด้วยเหตุนี้ สถาบันการศึกษาควรให้ความสำคัญกับการขัดเกลาทางวิชาชีพควบคู่ไปกับการพัฒนาการจัดการเรียนการสอนในหลักสูตรตามปกติ

คำสำคัญ: ความเป็นวิชาชีพเภสัชกรรม การขัดเกลาทางวิชาชีพ นิสิตนักศึกษาเภสัชศาสตร์ เภสัชศาสตร์ศึกษา