นิพนธ์ต้นฉบับ

การสำรวจค่าตอบแทนของเภสัชกรในประเทศไทย

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บทคัดย่อ

การศึกษานี้มีวัตถุประสงค์เพื่อที่จะสำรวจรายได้ของเภสัชกรในประเทศไทย ทั้งที่เป็นรายได้จากงานประจำและอาชีพเสริม การศึกษานี้จะเป็นการวิจัยเชิงพรรณนาแบบภาคตัดขวางโดยใช้แบบสำรวจในการเก็บข้อมูลที่ส่งไปยังเภสัชกร 1,000 คนทั่วประเทศ แบบสำรวจที่ตอบกลับและสามารถนำมาใช้ในการวิเคราะห์ได้คิดเป็น 50 เปอร์เซ็นต์ ในการวิเคราะห์ข้อมูลจะอาศัยสถิติเชิงพรรณนา โดยจะคำนวณค่าตอบแทนของเภสัชกรจากงานประจำแยกตามประเภทของงาน จำนวนปีที่ปฏิบัติงาน และพื้นที่ที่ปฏิบัติงาน ผลการศึกษาพบว่าโดยทั่วไปแล้วเภสัชกรชุมชน เภสัชกรประจำโรงงาน และเภสัชกรการตลาดจะได้รับเงินเดือนและรายได้รวมจากงานประจำสูงกว่าที่เภสัชกรโรงพยาบาล เภสัชกรภาคการศึกษา และเภสัชกรที่ทำงานเกี่ยวกับการคุ้มครองผู้บริโภค ยังพบอีกว่าเงินเดือนและรายได้รวมจากงานประจำเพิ่มขึ้นเมื่อจำนวนปีที่ปฏิบัติงานเพิ่มขึ้น เภสัชกรที่ปฏิบัติงานในภาคตะวันออกเฉียงเหนือจะมีเงินเดือนและรายได้รวมจากงานประจำน้อยที่สุด โดยเฉลี่ยแล้วเภสัชกรโรงพยาบาลจะได้รับเงินเดือนต่ำกว่าเภสัชกรภาคการศึกษาในเกือบทุกช่วงของจำนวนปีที่ปฏิบัติงาน แต่เภสัชกรโรงพยาบาลจะมีรายได้รวมจากงานประจำสูงกว่าเภสัชกรภาคการศึกษาในช่วง 20 ปีแรกของจำนวนปีที่ปฏิบัติงาน ในการศึกษานี้พบเภสัชกรจำนวนน้อยกว่าร้อยละ 50 ที่ทำอาชีพเสริม อาชีพเสริมส่วนใหญ่จะเป็นเภสัชกรชุมชน โดยเฉลี่ยแล้วเภสัชกรจะทำอาชีพเสริมประมาณ 2-3 ชั่วโมงต่อวันและได้มีรายได้ประมาณ 10,000 บาทต่อเดือน โดยสรุปค่าตอบแทนของเภสัชกรจะมีความแตกต่างกันตามประเภทของงาน จำนวนปีที่ปฏิบัติงาน และพื้นที่ที่ปฏิบัติงาน

กุญแจคำ

ค่าตอบแทนของเภสัชกร, เงินเดือนของเภสัชกร, อาชีพเสริมของเภสัชกร

Original Article

Pharmacist Compensation Survey in Thailand

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Abstract

The objective of this study was to survey pharmacist compensation in Thailand. The pharmacists' compensation from both full-time and part-time works was examined. The study was cross-sectional descriptive design and data were collected by mailed survey. Survey questionnaires were sent to 1,000 pharmacists across the country. The usable response rate for the survey was 50 percent. Descriptive statistics were used for data analyses. The compensation from the full-time work was calculated across type of work, the number of years of practice, and practice site. The results showed that the community, manufacturing, and marketing pharmacists had higher salary and overall income from the full-time work than did the hospital, academic, and consumer protecting pharmacists. An increase in the salary and overall income from the full-time work was found when the number of practicing years increased. The pharmacists residing in the northeastern Thailand had the lowest salary and overall income from the full-time work. On average, the hospital pharmacists had lower salary than did the academic pharmacists in most categories of practicing years, but they had higher overall income from the full-time work than did the academic pharmacists in the first 20 years of practice. Less than 50 percent of the pharmacists in this study had part-time work, which usually was a community pharmacist. On average, they worked part-time two to three hours a day with approximately 10,000 Baht for the median monthly income. In conclusion, the pharmacists' compensation varied across the region, the number of practicing years, and type of work.

Key words

Pharmacist compensation, Pharmacist salary, Pharmacist part-time work

Introduction

Recently, health care environment in Thailand has been changed enormously from various reasons. First, a health care financing reform was initiated in 2001. A new insurance scheme, called Universal Coverage (UC) scheme, was introduced and it covers 60 to 70 percent of Thai population. The UC is based on capitation payment, which restricts hospitals' resources. Second, while the resources are limited, quality of care becomes a major concern. The hospitals are encouraged for accreditation to certify their services. They need to

hold an acceptable standard of care under limited resources. One of major hospital expenditures is health care employee compensation.

Besides changing health care in general, pharmacy environment also changes. More than 15 years ago, the pharmacist workforce in Thailand was in short supply. Also, a novel philosophy of pharmacy practice, pharmaceutical care, was introduced to Thailand in 1990s. The orientation of pharmacy practice was changed from product emphasis to patient focus. New faculties of pharmacy were founded to supply more pharmacists to health care system. In 2003, Thai Pharmacy Council reported that almost 18,000 pharmacists were registered in Thailand (1). Since 1989, every pharmacy graduate from public universities, which were the majority of pharmacists in the country, signed contracts to work in the government services for two years after they finished their degree. A number of pharmacists, which was approximately 40 percent, filled in the public hospitals across the country (2). In other words, the pharmacy labor market was strictly regulated by the government. However, the contract was terminated since the year 2000. All graduates can choose their own work after the year 2004 when they finish the degree. The labor market will be more competitive and research in this area is required. Basically, the pharmacists who worked in the government sector are assumed to earn less salary and benefits than others, especially for the short term. However, little was really known about the labor economic issues in pharmacy workforce in Thailand. The balance of demand and supply for the pharmacy workforce is still unclear. Even though the pharmacist compensation would be one of economic determinants in labor economics, it was never nationally captured. Therefore, the objective of this study was to investigate pharmacist compensation in Thailand. The compensations from both full-time and part-time employment were examined.

Materials and Methods

Since salary was a personal issue, self-administered mailed survey questionnaires were used in this study. The questions were designed to obtain information about pharmacists' characteris-tics, full-time job, and part-time job. First, they were developed and tested with pharmacists residing in Songkhla province. Then all unclear questions were revised and piloted with 100 pharmacists across the country to examine the response rate for sample size calculation. From the pilot results, some questions also were refined for the final version before the actual survey conducted in April, 2004. Even though an ideal sampling frame should be all pharmacists registered to Thai Pharmacy Council, the validity of the pharmacists' addresses was poor. Also, informa-tion from each type of employment was needed. Various name lists from pharmacist associations or organizations were used since they tended to be more valid mailing addresses. Since Songkhla was used for developing the questionnaire, the pharmacists residing in Songkhla were not included in the sample. All names and addresses were gathered and checked for any duplication. Finally, the lists were composed of 6,359 pharmacists from the associations or organizations of community pharmacists, hospital pharmacists, consumer protecting pharmacists, academic pharmacists, marketing pharmacists, and manufacturing pharmacists. Even though the academic and consumer protecting pharmacists sometimes were not considered as pharmacy practice, they were included in this study for complete picture of pharmacy profession. From sample calculation, 400 pharmacists were needed in this study. Since the response rate from the pilot study was approximately 45 percent, a total of 1,000 pharmacists should be included. The pharmacists' names and addresses were proportionately drawn from each name list by systematic random sampling. They were composed of 230 community pharmacists, 428 hospital pharmacists, 90 consumer protecting pharmacists, 52 academic pharmacist, 112 marketing pharmacists, and 88 manufacturing pharmacist.

Prenotice postcards were mailed to all selected pharmacists. Survey packets included a cover letter stating the objectives of the survey and asking for participation, a four-page questionnaire, and return envelope with real stamps affixed. They were sent out three days after the prenotice. To increase response rates, a follow-up reminder postcard was mailed two weeks after the initial survey mailing. No replacement survey packet was sent to the nonrespondents because the first mailing was completely blinded for confidentiality and limited resources were available.

Respondents were asked to report demo-graphic characteristics and payment from their current full-time and part-time works. The full-time work was defined as an employment with at least 40 hours work per week. If the pharmacists had more than one employment with at least 40 hours work per week, the employment that required daytime (8.30 am to 4.30 pm) period was chosen. Any other employment was called part-time work. These definitions were given at the beginning of the survey. Descriptive statistics were used for the data analyses. The compensation was analyzed and reported as monthly or salary base, which was more frequently found in other compensation reports in Thailand. The compensation from the full-time work included both salary and overall income (salary, overtime and extra payment). Other than the means and ranges, the medians of the salary and overall income were also reported because they had highly skewed distribution. The salary or overall income also was cross-tabulated by different variables such as practice region, type of employment and year of practice. Each region in Thailand has different socioeconomic environment. It includes culture, life style, work, and economy. Basically, Thailand is divided into four main regions, which are central, north, northeast, and south. However, Bangkok, which is the capital, is different from the other provinces in the central Thailand. It has high density of population. Also, a number of pharmacists reside in Bangkok. Therefore, it was separated from the other regions in the analysis.

Results

Of the 1,000 surveys mailed, 16 (1.6 percent) were returned as undeliverable. Of the 984 deliverable surveys, a total of 544 responses were returned, for a response rate of 55.3 percent. A total of 52 respondents failed to provide key information such as salary, and then they were deleted. After adjusting for unusable surveys, the response rate was 50.0 percent (492 pharmacists). Available demo-graphic variables, such as age and years of practice from the unusable and usable surveys were compared and no significant difference was found. Table 1 shows the compa-rison of type of full-time employment between the respondents and pharma-cist population in Thailand. Even though they were not the same, they were similar in many ways such as the largest group was the hospital pharmacist, while the smallest group was the academic pharmacist.

Table 2 shows the demographic characteristics of the respondents. Almost 70 percent of them were female. The average age was approximately 36 years old and more than a half of them were single. The majority of the respondents had bachelor degree and their average number of practicing years was almost 13 years.

Table 3 shows the pharmacists' salary and overall income cross-tabulated by the practice region and type of employment. Since the salary and overall income had wide range, not only mean but also median was reported. For community pharmacists, most of them were self-employed. They were asked to estimate their salary separated from their overall income. It also is noteworthy that all marketing pharmacists resided in Bangkok due to their main office locations, even though they might also work in the other regions. The pharmacists residing in Bangkok had the highest mean and median of the salary (49,060.1 and 40,000 Baht, respectively) and overall income (54,463.6 and 45,000 Baht, respec-tively) from the full-time work. The pharmacists in the central region had higher average compensation than did the pharmacists in the other regions. In Bangkok and central region, the marketing, manu-facturing, and community pharmacists had higher median

Table 1. Comparison of type of full-time employment between the respondents and pharmacist population from the whole country

Variable	Population[1]	Respondent
Type of Full-time Employment (%)		
Community	13.8	10.8
Hospital	46.6	61.6
Manufacturing	10.1	5.3
Marketing	15.5	6.3
Academic	6.9	4.1
Consumer Protecting	7.1	10.0
Others	-	1.9

[1] Wibulpolprasert (2002)

Table 2. Demographic characteristics of the respondents (N=492)

Variable	Number (%)
Gender	
Female	342 (69.5)
Age (years old)	Mean = 35.97, S.D. = 9.10
< 29	152 (30.9)
30-34	122 (24.8)
35-39	75 (15.2)
40-44	41 (8.3)
45-49	39 (7.9)
> 50	63 (12.89)
Marital Status	
Single	272 (55.3)
Married	214 (43.5)
Divorced/Widowed	6 (1.2)
Degree	
B.S.	364 (73.8)
M.S.	119 (24.2)
Ph.D.	10 (2.0)
Year of Practice (years)	Mean = 12.8, S.D. = 8.9
1-5	119 (24.2)
6-10	143 (29.1)
11-15	77 (15.7)
16-20	51 (10.4)
>20	102 (20.6)

salary and overall income from the full-time employment. Since there was no marketing and manufacturing pharmacist in the other regions, the community pharmacists had the highest mean and median of the salary and overall income, except in the northern region that the community pharmacists had the highest only average salary. It is noteworthy that the orders of mean and median of overall income from the full-time employment for the northern region were inconsistent. At the lower end, the order of salary and overall income among the hospital, consumer protecting, and academic pharmacists was mix. The hospital pharmacists had the lowest median salary across the regions, even though its mean was not. Also, their mean (13,313.3 Baht) and median (10,640 Baht) of the salary were the lowest, compared to those of all respondents. However, after adding the overtime and extra payment, the hospital pharmacists had higher median overall income than did the academic and consumer protecting pharma-cists across the regions, including Bangkok. The results

Table 3. Summary of salary and overall income from the full-time work across region and type of work

		Salary			Overall Income		
Region/Setting	N	Average	Median	Range	Average	Median	Range
Bangkok							
Community	22	39,886.4	32,500	10,000-80,000	40,340.9	32,500	10,000-80,000
Hospital	11	21,310.9	20,350	9,000-43,000	28,956.4	28,480	18,000-48,500
Manufacturing	20	55,771.5	53,000	11,440-100,000	56,871.5	53,000	20,440-100,000
Marketing	31	72,049.4	57,000	15,800-220,000	85,696.8	75,000	19,800-230,000
Academic	7	27,790.0	25,000	14,000-44,930	34,004.3	27,200	14,000-60,000
Consumer Protecting	8	21,237.5	20,000	12,420-32,010	25,825.0	26,070	12,420-37,610
Others	6	44,000.0	36,500	20,000-95,000	45,666.7	37,500	20,000-100,000
Overall	105	49,060.1	40,000	9,000-220,000	54,463.6	45,000	10,000-230,000
Central							
Community	21	52,381.0	50,000	15,000-120,000	52,381.0	50,000	15,000-120,000
Hospital	88	13,219.8	11,160	7,980-30,000	21,080.4	19,650	11,700-40,800
Manufacturing	6	48,083.3	40,000	28,000-80,000	49,083.3	42,500	28,000-80,000
Academic	5	19,350.0	15,630	9,040-40,000	19,350.0	15,630	9,040-40,000
Consumer Protecting	23	17,524.4	15,240	8,820-44,930	20,735.2	18,500	8,820-54,830
Others	4	59,512.5	41,525	35,000-120,000	66,412.5	52,525	40,600-120,000
Overall	147	22,378.9	14,070	7,980-120,000	27,815.6	20,600	8,820-120,000
Northern							
Community	3	36,666.7	20,000	20,000-70,000	36,666.7	20,000	20,000-70,000
Hospital	76	14,127.9	12,000	7,980-44,000	22,388.3	20,405	13,080-58,900
Academic	5	19,800.0	14,000	12,720-44,240	31,320.0	17,500	13,040-89,240
Consumer Protecting	11	16,992.7	16,800	8,000-28,040	20,849.1	21,090	8,610-38,320
Overall	95	15,469.9	12,720	7,980-70,000	23,131.1	20,400	8,610-89,240
Northeastern							
Community	3	50,000.0	50,000	20,000-80,000	50,000.0	50,000	20,000-80,000
Hospital	72	11,975.6	10,055	7,980-40,000	18,699.2	18,170	9,500-54,000
Academic	3	10,933.3	10,800	9,000-13,000	12,600.0	13,000	10,800-14,000
Consumer Protecting	4	15,000.0	14,040	9,600-22,320	17,250.0	15,790	9,600-27,820
Overall	82	13,476.1	10,140	7,980-80,000	19,550.5	18,170	9,500-80,000
Southern							
Community	4	43,750.0	50,000	25,000-50,000	43,750.0	50,000	25,000-50,000
Hospital	56	12,503.6	10,600	7,980-39,000	20,651.3	19,350	11,000-51,000
Consumer Protecting	3	12,803.3	13,000	8,610-16,800	13,970.0	13,000	8,610-20,300
Overall	63	14,501.8	11,000	7,980-50,000	21,799.7	20,040	8,610-51,000
Total							
Community	53	45,518.9	40,000	10,000-120,000	45,707.6	40,000	10,000-120,000
Hospital	303	13,313.3	10,640	7,980-44,000	21,049.2	19,980	9,500-58,900
Manufacturing	26	53,997.3	50,500	11,440-100,000	55,074.2	50,500	20,440-100,000
Marketing	31	74,049.4	57,000	15,800-220,000	85,696.8	75,000	19,800-230,000
Academic	20	21,154.0	15,315	9,000-44,930	26,459.0	17,250	9,040-89,240
Consumer Protecting	49	17,516.1	16,200	8,000-44930	20,893.1	19,500	8,610-54,830
Others	10	50,205.0	41,525	20,000-120,000	53,965.0	47,500	20,000-120,000
Overall	492	24,217.7	14,500	7,980-220,000	30,433.1	21,500	8,610-230,000

provided broad picture of the salary and overall income from the full-time employment across the region and type of employment. However, they might be confounded by the number of practicing years, which basically was an important indicator for the amount of compensation.

Therefore, the pharmacists' salary and overall income were cross-tabulated by the number of practicing years and type of full-time work and the results show in Table 4. Similar to the results of average salary across the regions, the community, marketing, and manufacturing pharmacists still had higher salary than did the hospital, academic, and consumer protecting pharmacists across the categories of the practicing years. Even though the order of median salary was not the same as its mean, they were very similar.

Table 4. Summary of salary and overall income from the full-time work across number of practicing years and type of work

Years of Practice/Setting		Salary			Overall Income		
	N	Average	Median	Range	Average	Median	Range
1-5 years							
Community	2	25,000.0	-	20,000-30,000	27,500.0	27,500	25,000-30,000
Hospital	101	8,964.6	8,800	7,980-20,000	17,399.2	17,310	9,500-31,500
Manufacturing	3	26,330.0	28,000	20,990-30,000	27,996.7	28,000	25,990-30,000
Marketing	4	24,932.5	16,965	15,800-50,000	31,200.0	27,500	19,800-50,000
Academic	1	15,000.0	-	-	15,000.0	15,000	-
Consumer Protecting	6	8,530.0	8,610	8,000-9,040	11,030.0	10,460	8,610-14,040
Others	2	26,500.0	-	25,000-28,000	29,000.0	29,000	28,000-30,000
Overall	119	10,532.1	8,820	7,980-50,000	18,153.7	17,380	8,610-50,000
6-10 years							
Community	2	25,000.0	-	25,000-25,000	27,500.0	-	25,000-30,000
Hospital	110	11,557.8	11,000	8,410-30,500	18,847.5	19,110	10,030-38,500
Manufacturing	4	31,735.0	37,750	11,440-40,000	35,485.0	38,250	20,440-45,000
Marketing	9	42,866.7	45,000	20,000-60,000	61,922.2	67,000	30,000-85,000
Academic	6	12,326.7	11,440	9,000-20,000	13,160.0	12,560	9,040-20,000
Consumer Protecting	11	11,703.6	10,800	9,500-18,000	12,990.0	11,950	9,500-21,500
Others	1	43,050.0	-	-	55,050.0	-	-
Overall	143	14,544.4	11,120	8,410-60,000	21,708.8	19,460	9,040-85,000
11-15 years							
Community	8	46,250.0	45,000	20,000-80,000	46,250.0	45,000	20,000-80,000
Hospital	45	17,218.2	16,000	9,000-43,000	24,491.1	23,000	15,000-51,000
Marketing	4	55,750.0	56,500	30,000-80,000	74,500.0	65,500	47,000-120,000
Academic	5	14,470.0	14,000	12,720-17,000	16,990.0	17,000	13,000-21,820
Consumer Protecting	14	16,220.7	16,500	12,000-20,000	18,827.9	19,600	12,000-23,500
Others	1	95,000.0	-	-	100,000.0	-	-
Overall	77	22,886.5	16,800	9,000-95,000	28,813.5	21,820	12,000-120,000
16-20 years							
Community	11	42,727.3	40,000	15,000-90,000	42,727.3	40,000	15,000-90,000
Hospital	24	20,303.3	20,335	15,240-30,000	28,109.6	27,000	21,460-40,800
Manufacturing	1	80,000.0	-	-	80,000.0	-	-
Marketing	7	80,285.7	80,000	27,000-130,000	87,357.1	80,000	30,000-130,000
Academic	2	17,800.0	-	14,000-21,600	20,600.0	-	14,000-27,200
Consumer Protecting	5	17,200.0	17,000	13,000-20,500	20,000.0	20,500	13,000-24,000
Others	1	45,000.0	45,000	-	45,000.0	-	-
Overall	51	34,625.1	21,150	13,000-130,000	39,653.5	28,970	13,000-130,000
> 20 years							
Community	30	49,083.3	50,000	10,000-120,000	49,083.3	50,000	10,000-120,000
Hospital	23	25,871.7	25,000	17,190-44,000	33,506.5	31,720	24,000-58,900
Manufacturing	18	62,111.1	60,000	40,000-100,000	62,555.6	60,000	40,000-100,000
Marketing	8	129,375.0	137,500	10,000-220,000	152,142.9	150,000	80,000-230,000
Academic	6	37,695.0	40,000	25,000-44,930	51,511.7	47,415	25,000-89,240
Consumer Protecting	13	28,098.5	28,000	20,000-44,930	34,700.0	34,000	27,820-54,830
Others	5	53,200.0	40,000	20,000-120,000	56,320.0	50,000	20,000-120,000
Overall	103	49,301.0	40,000	10,000-220,000	53,377.9	40,000	10,000-230,000

Due to only salary, the median salary of the academic pharmacists was higher than the median salary of the consumer protecting pharmacists across any categories of practicing years, except the 11 to 15 years period. The hospital pharmacists had lower median salary than did the academic pharmacists in every category of practicing years, except the 16 to 20 years period. However, the median overall income from the full-time work of the hospital pharmacist was the highest until a total of 20 years of practice, compared to the median overall income of the academic and consumer protecting pharmacists. After 20 practicing years, the academic pharmacists had higher median overall income from the full-time work than did the hospital pharmacists.

When the number of practicing years increased, an increase in the salary and overall income should be found intuitively. The results varied across the type of work. In general, the hospital, marketing pharmacist, consumer protecting pharmacists had higher salary and overall income when they had higher number of years of practice. The mean and median salary and overall income of the community pharmacists increased when the number of practicing year increased, except the 16 to 20 years period. Similarly, the manufacturing pharmacists had higher mean and median salary and overall income when they had more years of practice, except the last category of practicing years. For the academic pharmacists, a consistent increase in the mean and median of the salary and overall income was found after the one to five years of practice.

Table 5 summarizes the results of the pharmacists' part-time work. Only 485 respondents reported whether they had part-time work or not. A total of 204 respondents (42.1 percent) had part-time work. Among the respondents, 166 of them (81.4 percent) had pharmacy related part-time work. From 166 pharmacists who reported type of the part-time work, a total of 135 pharmacists (81.3 percent) had part-time work as the community pharmacists only. The mean and median part-time hours worked per month of 141 respondents were 78.3 and 60.0 hours, respectively. A total of 201 respondents reported the income from the part-time work. Their mean and median monthly incomes from the part-time work were 16,564.1 and 9,500 Baht, respectively.

Discussions and Conclusions

In general, the results showed that the marketing, manufacturing, and community pharmacists had higher monthly overall income than did the hospital, academic, and consumer protecting pharmacists. A reason could be that most of the hospital and academic pharmacists in this study, and all consumer protecting pharmacists were govern-ment employee. Basically, it is known that the government pay less than did the private employer. Among the hospital, academic, and consumer protecting pharmacists, it is noteworthy that the mean and median salary of the hospital pharmacists were the lowest, but they were higher after adding the over-time and extra payments.

Across the regions, the pharmacists residing in the northeastern Thailand had the lowest salary and overall income, while the pharmacists working in Bangkok had the highest salary and overall income. A reason could be that Bangkok is the capital of Thailand and is the economic center of the country, which could make lower turnover of the pharmacists. Therefore, senior pharmacists tend to be in Bangkok and they have higher salary or overall income. The data showed that the pharmacists residing in Bangkok were approximately seven to ten years older than the pharmacists working in other regions. On the other hands, the northeastern region has the lowest economy, which could make higher turnover of the pharmacists. Another reason could be that the pharmaceutical companies locate only in Bangkok and its vicinity. The manufacturing and marketing pharmacists, who were highly paid, then resided in Bangkok.

The number of practicing years could be a confounder when the salary and overall income were compared across types of work. However, after the salary and overall income from the full-time work were categorized by the number of practicing years, the results of the pharmacists' salary and overall income across type of work were

Table 5. Summary of pharmacists' part-time work

Variable	Number (%)
Work part-time (N=485)	
Yes	204 (42.1)
No	281 (57.9)
Pharmacy related part-time work (N=204)	
Yes	156 (76.5)
No	38 (18.6)
Either	10 (4.9)
Type of part-time work (N=166)	
Community pharmacist	135 (81.3)
Hospital pharmacist	15 (9.0)
Community and hospital pharmacist	9 (5.4)
Community pharmacist and others	1 (0.6)
Others	6 (3.7)
Time spent on part-time work (N=141)	Mean =78.3 Hours/month Median = 60 Hours/month Range = 3-210 Hours/month
Income from part-time work (N=201)	Mean = 16,564.1 Baht/month Median = 9,500 Baht/month Range = 500-150,000 Baht/month

found similar to the results from the comparison across the regions. In general, the community, manufacturing, and marketing pharmacists had higher salary and overall income than did the hospital, academic, consumer protecting pharmacists across all categories of practicing years. If only salary was compared, the hospital pharmacists tended to have lower salary than did the academic pharmacists in most periods of practicing years. However, the hospital pharmacists had higher overall income than did the academic pharmacists in the first 20 years of practice. A reason could be that the hospital pharmacists had over-time work and also received extra payment such as professional fee from the government. They also were promoted regularly in the early years of practice. However, the government limits the number of high ranking employee in each type of hospital. On the other hands, there is no such limit for the academic pharmacists in each institution, as long as they can pursue higher academic position. Therefore, it is conceivable that the academic pharmacists received higher salary and overall income than did the hospital pharmacists after 20 years of practice.

For the one to five practicing years period, only academic pharmacist in this category had higher mean and median of salary and overall income than did the academic pharmacists in the later period. The data showed that the particular pharmacist was government employer. A reason could be that, recently, the government university changed rules of employment by increasing salary with limited benefits for new employee. For the community and manufacturing pharmacists, an increase in the mean and median of the salary and overall income was found when the number of practicing years increased, except in some periods. A reason could be that the results were still confounded by other variables such as type of community pharmacy or pharmaceutical company.

Less than 50 percent of the respondents had part-time work. The majority of part-time work was community pharmacists. On average, the pharma-cists worked two to three hours a day for the part-time work with approximately 10,000 Baht for the median monthly income. The results reflected that the community pharmacy still needs pharmacist workforce.

The study had various limitations. First, the sampling frame did not contain all pharmacists in Thailand because the validity of the mailing addresses for all pharmacists was limited. Second, Songkhla, which is one of the biggest provinces in

the country, was not included in the main study. Instead, it was used for testing the questionnaire. The pharmacists residing in the southern region might be under-represented. Third, the study used the number of years after graduation as the number of practicing years. Intuitively, the number of years after graduation should be controlled when the salary and overall income are investigated. However, the number of years practicing in the present work, which was not reported, could also have an impact on the salary and overall income they currently received during the study period.

In conclusion, the salary and overall income from the full-time work varied across the region, the number of practicing years, and type of work. The distinctions of the salary and overall income between the pharmacists employed by the private employer and by the government were clearly found. The salary and overall income of the community, manufacturing, and marketing pharmacists were at the upper end, while those of the hospital, academic, and consumer protecting pharmacists were lower. This study was conducted before the first pharmacy graduates, who can independently choose their own works, finish their degree. This study can be used as an initial economic information of pharmacist workforce in Thailand. Further investigation is also required to capture changes of the pharmacists' compensation.

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