



# An Investigation of the Determinants for Community Pharmacists' Positive Image and the Needs for Community Pharmacists' Services in Taiwan: A Cross-Sectional Study



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## BACKGROUND

- Community pharmacists are the easiest to access by the public and form the main basis for the public image of all pharmacists.
- In the literature, there have been relatively few studies of the public's general perception or views of community pharmacists, let alone the factors that help build their positive image.
- In Taiwan, a large-scale national survey of over 1,000 respondents concluded that consumers had less-than-positive perceptions about community pharmacists.<sup>1</sup>
- Given time and resource constraints, it is not feasible to provide a comprehensive range of services. Therefore, it is important to determine the particular services that are most needed by the public.

## OBJECTIVES

To examine the specific factors that the general public believes have an effect on the image of community pharmacists and also to identify community pharmacists' services that truly fulfill people's needs

## METHODS

- Study design: a cross-sectional survey

### Study Procedures



- Final version of the survey questionnaire

|   |   |
|---|---|
| <b>The first section</b><br>- To assess public's opinions about the importance of various factors that may help create a positive image for community pharmacists | <b>The second section</b><br>- To assess the level of need for current services that can be provided by community pharmacists and the services that could potentially be provided |
| <b>The third section</b><br>- To assess the public's need for comprehensive pharmaceutical care   | <b>The fourth section</b><br>- To collect demographic information   |

## Data collection

- The questionnaires were administered in five collaborating community pharmacies in Taipei from November 2016 to January 2017.
- Inclusion criteria: (1) ages 20 years and older, and (2) could communicate in Chinese or Taiwanese
- The trained interviewers visited each pharmacy at least once during predetermined time slots to recruit respondents.
- Questionnaires with missing values  $\leq 5$  were deemed completed.

### Statistical Analysis

Basic demographic characteristics were presented by frequencies and percentages, whereas the proportions of each response option in the first and second parts of the questionnaire were expressed as percentages.

Student's t-test  
Mann-Whitney U test  
Chi-square test

Determine if the need for comprehensive pharmaceutical services varied depending on age, gender, having children, living alone, or having prescriptions with refills for chronic diseases.

Table 3: The levels of need for services provided by community pharmacies (%)

| Characteristics  | Very unnecessary | Unnecessary | Average | Necessary | Very necessary | Necessary/Very necessary |
|--|------------------|-------------|---------|-----------|----------------|--------------------------|
| Checking drug-drug interactions  | 0                | 1.7         | 4.5     | 43.9      | 49.9           | 93.8                     |
| Consultations regarding prescription drugs   | 0.2              | 1.7         | 5.7     | 45.4      | 46.9           | 92.3                     |
| Dispensing prescriptions   | 0.2              | 1.2         | 7.0     | 45.6      | 45.9           | 91.5                     |
| Checking drug-food interactions  | 0                | 2.0         | 6.7     | 45.1      | 46.1           | 91.2                     |
| Consultations regarding non-prescription drugs   | 1.7              | 2.2         | 14.2    | 57.9      | 23.9           | 81.8                     |
| Consultations and health education for wound care  | 1.2              | 5.0         | 14.2    | 51.6      | 27.9           | 79.5                     |
| Recycling expired medications or needles   | 1.5              | 5.0         | 15.7    | 41.6      | 36.2           | 77.8                     |
| Sales of non-prescription drugs for the common cold, headache, and gastrointestinal discomfort | 1.0              | 4.7         | 20.2    | 58.9      | 15.2           | 74.1                     |
| Consultation regarding nutrient supplements  | 1.2              | 6.5         | 21.7    | 50.9      | 19.7           | 70.6                     |
| Assisting in adjusting medication dosage with doctors' consent*                                | 2.7              | 10.5        | 17.2    | 42.1      | 27.2           | 69.3                     |
| Arranging medications and putting them in drug boxes   | 3.5              | 12.7        | 25.2    | 37.7      | 20.9           | 58.6                     |
| Discussion and consultation regarding advertised medications                                   | 2.7              | 13.2        | 27.9    | 41.1      | 15.0           | 56.1                     |
| Consultation regarding Chinese medicine  | 2.5              | 15.2        | 26.2    | 43.1      | 12.7           | 55.8                     |
| Measurement of blood pressure  | 0.5              | 12.2        | 32.2    | 42.4      | 12.5           | 54.9                     |
| Measurement of blood sugar   | 1.0              | 13.0        | 33.2    | 39.7      | 12.7           | 52.4                     |
| Vaccinations*  | 8.2              | 21.4        | 27.9    | 27.7      | 14.7           | 42.4                     |
| Emergency contraception*   | 7.0              | 19.7        | 31.2    | 27.2      | 15.0           | 42.2                     |
| Home delivery of medications   | 6.2              | 37.4        | 40.1    | 12.2      | 4.0            | 16.2                     |

\* Services that pharmacists are not currently permitted to perform in Taiwan

## RESULTS

- A total of 404 questionnaires were distributed, of which 401 were deemed completed.
- The need for comprehensive pharmaceutical service was not correlated with age, gender, having children, living alone, or having prescriptions with refills for chronic diseases.

Table 1: Factors influencing the image of community pharmacists (%)

| Characteristics  | Very unimportant | Unimportant | Average | Important | Very important | Important / Very important |
|--|------------------|-------------|---------|-----------|----------------|----------------------------|
| Correct dispensing of medicine   | 0.2              | 0.2         | 1.2     | 19.0      | 79.3           | 98.3                       |
| A warm demeanor  | 0                | 0.2         | 4.2     | 46.4      | 49.1           | 95.5                       |
| A prominently worn license bearing the pharmacist's photo                          | 0                | 0.5         | 4.7     | 35.7      | 58.9           | 94.6                       |
| A clean pharmacist white coat  | 0                | 1.0         | 5.7     | 57.9      | 35.4           | 93.3                       |
| Ample time for communication   | 0                | 0.5         | 7.7     | 50.9      | 40.9           | 91.8                       |
| Respect for customers' privacy during consultation                                 | 0.5              | 1.2         | 9.0     | 40.1      | 49.1           | 89.2                       |
| Providing handouts on medication use   | 0.2              | 3.5         | 20.4    | 46.6      | 28.9           | 75.5                       |
| Speaking to patients in language that patients are familiar with (e.g., Taiwanese) | 0.5              | 3.5         | 20.9    | 51.1      | 23.9           | 75.0                       |
| Looked veteran   | 1.2              | 13.5        | 29.4    | 40.1      | 15.7           | 55.8                       |
| Absence of tattoos   | 6.7              | 20.4        | 28.7    | 24.4      | 19.7           | 44.1                       |
| Absence of colored hair  | 5.5              | 26.2        | 33.2    | 22.4      | 12.5           | 34.9                       |

Table 2: The need, service locations, time, and payment for pharmaceutical care services

| Characteristics                                  |                                | Number of respondents |      |
|--|--------------------------------|-----------------------|------|
| Comprehensive pharmaceutical care                | Necessary                      | 312                   | 77.8 |
|  | Unnecessary                    | 89                    | 22.2 |
| Service location preference                      | Community pharmacies near home | 280                   | 89.7 |
|  | Home                           | 23                    | 7.4  |
|  | Community center               | 7                     | 2.2  |
|  | Others                         | 2                     | 0.6  |
| Amount willing to pay for each service encounter | 50 (NTD)                       | 71                    | 23.1 |
|  | 100 (NTD)                      | 132                   | 42.9 |
|  | 150 (NTD)                      | 48                    | 15.6 |
|  | 200 (NTD)                      | 57                    | 18.5 |

## DISCUSSION

- The present study identified factors pertinent to community pharmacist image that are deemed important by the public, which could be areas that community pharmacists emphasize on.
- Our study results indicate that the general public believes that providing sufficient consultation time and privacy protection are important in establishing pharmacists' positive image.
- Home delivery of medications is a service that is in line with the great demand for other home delivery services in modern society. However, our study results showed that only 16.2% of respondents felt that this service is necessary or very necessary. There are two explanations for the findings:
  - The survey was conducted in community pharmacies, and the respondents were all able to personally visit the pharmacies to collect their medications. Therefore, they did not require pharmacists to deliver medications to their homes.
  - Most people seemed to have concerns about a potential invasion of privacy.
- As there are a variety of services that could be included in comprehensive pharmaceutical services, in view of time constraints, it is important to know which services should be prioritized.
- Study Limitations:
  - Despite the efforts to recruit patients at different times and on different days of the week, the study sample may not represent the adult population in Taiwan.
  - The questionnaire was administered in community pharmacies, so responses may have been affected by the relationship of the respondents to the community pharmacists or the services they provided.

## CONCLUSION

The results of this study showed that correct dispensing is the most important factor that helps establish a positive image of community pharmacists and that the most needed services were those that required pharmacists' professional competence. In addition, nearly 80% of the respondents reported that they needed comprehensive pharmaceutical services and were willing to pay for it.

## REFERENCES

- Chen, Y.C., Y.H. Tarn, and D.H. Kreling, Public views of community pharmacists in Taiwan. *Int J Pharm Pract*, 2012. 20(3): p. 203-6.

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