


Consumers' Perceptions About Pharmaceutical Care Provided by Community Pharmacists in China in Relation to Over-the-Counter Drugs: A Qualitative Study

INQUIRY: The Journal of Health Care Organization, Provision, and Financing
Volume 55: 1–8
© The Author(s) 2018
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0046958018793292
journals.sagepub.com/home/inq


Hong Chen¹, Carolina Oi Lam Ung, PhD¹, Peilian Chi, PhD¹, Jihong Wu, PhD², Daisheng Tang, PhD³, and Hao Hu, PhD¹ 

Abstract

While patient-centered care is highly anticipated nowadays, investigation of consumers' perceptions and expectations about pharmacist's pharmaceutical care when providing over-the-counter (OTC) drugs is sparse. This article aimed to explore consumers' perceptions regarding the pharmaceutical care that community pharmacists provide in relation to OTC drugs. Semistructured interviews were conducted with consumers recruited (N = 97) in Yinchuan City, China. The 4 main themes that emerged were expectations on pharmaceutical care, attitude toward pharmacist's competence, experience of self-medication, and suggestions for improving pharmaceutical care. Most participants had high expectations on community pharmacists to recommend the right medicines, to advise them about the effective use of drug, to advise them about the safe use of drug, and to recommend economic drugs. However, their previous experiences at community pharmacy were far from satisfaction reportedly, leading to a general distrust in pharmacist's certification and qualification, knowledge, communication skills, and attitude. As a result, the participants turned to self-medication based on their personal experiences, their relatives' experiences, the information on drug label, and the information distributed in the mass media. Realizing the need to improve pharmaceutical care, the participants also made improvement suggestions specific to community pharmacist, community pharmacy, and the government.

Keywords

consumer, pharmaceutical care, community pharmacist, community pharmacy, China, qualitative

What do we already know about this topic?

Pharmacists should understand consumers' concerns and demand in order to ensure quality of pharmaceutical care.

How does your research contribute to the field?

This research identified consumers' expectations on community pharmacists and found the reasons why consumers avoided seeking pharmaceutical care from community pharmacists.

What are your research's implications toward theory, practice, or policy?

Collective actions of pharmacists, community pharmacies, and government should be taken to rebuild consumers' trust in the competence of community pharmacist to order to improve the safe and appropriate use of OTC drugs at community pharmacy.

¹University of Macau, China

²University of Electronic Science and Technology of China, Chengdu, China

³Beijing Jiaotong University, China

Corresponding Author:

Hao Hu, Institute of Chinese Medical Sciences, University of Macau, Avenida da Universidade, Room 2057, Building N22, Taipa, Macau, China.
Email: haohu@umac.mo

Received 30 May 2017; revised 14 July 2018; revised manuscript accepted 16 July 2018



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons

Attribution-NonCommercial 4.0 License (<http://www.creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (<https://us.sagepub.com/en-us/nam/open-access-at-sage>).

Background

Around the world, more and more people use over-the-counter (OTC) drugs for self-medication.^{1,2} With the increasing usage of OTC drugs, irrational drug use and adverse drug reactions are also becoming significant health care problems. For example, in a study by Schmiedl et al, among 266 adverse drug reactions, 143 cases were related to OTC drugs.³ A national survey in the United States in 2008 also showed that about 1 million (5.3%) people abused cold-cough OTC drugs in a year.⁴ As OTC drugs can be readily purchased by consumers at community pharmacies, it highlights the importance of pharmaceutical care provided by community pharmacists.⁵ In China, the OTC drug market reached RMB 128 billion in 2012, of which RMB 78.266 billion (61%) originated from community pharmacies.⁶ However, pharmaceutical care at community pharmacies was developing very slowly.⁷⁻⁹

To establish a standard for pharmacists to practice appropriately, scholars had highlighted the importance of understanding consumers' needs for pharmaceutical care.¹⁰ International Pharmaceutical Federation (FIP) and World Health Organization (WHO) also urged that pharmacists should understand consumers' concerns and demand to ensure quality of pharmaceutical care.¹¹

However, the amount of research work targeting consumers' perspective about pharmaceutical care is relatively limited, most of which emphasized particularly on consumer satisfaction with community pharmacy services. Although the findings helped to shed light on the continuous need for improvements, empirical results showed that the levels of consumer satisfaction with community pharmacy service varied.¹²⁻¹⁵ Other scholars also tried to investigate consumers' understanding of community pharmacists' professional role. While most consumers agreed that community pharmacists should play the professional role more rather than just drug dispenser, the conceptualization about community pharmacist's professional role is neither specific nor consistent.¹⁶⁻¹⁸ At present, limited information has been provided from the literature to specifically guide the improvement process based on their consumers' needs.

This study aims to explore consumers' perceptions regarding the pharmaceutical care that community pharmacists provide in relation to OTC drugs. The findings will provide empirical evidence to supplement the current findings supporting the development and improvement of pharmaceutical care provided by community pharmacists in China and also enrich the academic field of understanding consumers' role in pharmaceutical care.

Method

Ethics Approval

Ethical approval was obtained from the Ethics Committee of the University of Macau (MYRG2015-00072-ICMS-QRCM)

and the Ethics Committee of Beijing Jiaotong University (Project No. 14BRK027).

Study design and setting. To enable the researchers to explore the unique opinions of individual consumer, semi-structured interview was chosen as the method for this study.¹⁹ We chose interview method for 2 reasons. First, this study aims to "explore" but not to "measure" consumers' perceptions, which demands more qualitative design. Second, it is considered that the interview method can offer distinctive advantages to this particular study allowing exploration of the interviewee's opinions more thoroughly through interactions between interviewer and interviewee.²⁰ Therefore, interview method was adopted.

The study was conducted in Yinchuan City, northwest China, which was the provincial city of the Ningxia Hui Autonomous Region. Until the end of 2014, there were about 2 million residents in Yinchuan City, among which 52% residents were male. For age composition, 16% residents in Yinchuan City were less than 14 years; 75% residents' age was between 15 and 59 years; and 9% residents were older than 60 years. Comparatively, the population of residents in Yinchuan City was slightly younger nationally as the overall age composition in China for the same age groups were 17%, 70%, and 13%, respectively. In 2014, the gross domestic product (GDP) per capita of Yinchuan City was USD 10 909 which was significantly higher than the national GDP per capita (USD 7575). There were about 700 community pharmacies in the Yinchuan City, indicating a relatively high pharmacy density of 350 community pharmacies per 1 million residents as compared with the national figure of 205:1 000 000 in 2012.^{21,22} With such kind of pharmacy density, residents were encouraged to not only buy OTC drugs but also seek professional advice at community pharmacy to support their self-medication.

Participants. Participants were selected through systematic planning. First, it was designed to recruit participants from all the 3 districts of Yinchuan City (Xingqing, Jinfeng, Xixia) to ensure that participants included in this study allowed optimal generalization. Second, the demographic composition of population in Yinchuan City was considered for participant recruitment to get a diverse range of perspectives.

In practice, people walking by the community pharmacies during daytime (9 AM-5 PM) in the 3 selected districts were randomly approached. Participants were recruited from 10 community pharmacies in each district. By having consumers recruited from the different community pharmacies from all the 3 districts in Yinchuan City, the diversity of demographic composition was appropriately considered for and the findings of this study were sufficiently representative of the city population.

For each interview, the researcher showed her identity card and explained the research purpose to the person when inviting him or her to participate. People who were older

than 18 years and had bought OTC drugs at community pharmacy in the past 6 months were eligible to participate. The study did not set up a target sample size but stopped recruiting when theoretical data saturation was reached.²³ Finally, a total of 97 interviews were completed.

Data collection. The field interview was conducted from January to March 2015. Each interview lasted for 12 minutes on average (range: 10-15 minutes). All the interviews were conducted in Chinese and audio-taped following written consent.

To ensure interview validity, necessary measures were taken when designing the interview guide before the formal field interview. First, the interview topics was originally developed from current academic literature and documents about community pharmacies in China, which resulted in the first version of interview guide. Second, it was reviewed by 3 community pharmacists and 7 consumers, which led us to revise the interview guide. Third, another 10 consumers were invited to test the feasibility of the second version of the interview guide. Fourth, after minor modification, a final version of interview guide was decided.

The final guide mainly covered the following topics: expectations on pharmaceutical care of OTC drugs at community pharmacy; attitude toward pharmacist competence; experience of self-medication with OTC drugs at community pharmacy; and their suggestions to improve pharmaceutical care of community pharmacists. All the questions were designed in an open-ended manner (see Appendix).

Data analysis. A thematic analysis approach was applied in this study.²⁴ Microsoft Excel 2013 was used for data analysis. Necessary measures were taken to ensure coding validation and language validation. First, all the interview transcriptions in Chinese were reviewed to mark out recurring themes and subthemes by reading and rereading, which was undertaken by 2 researchers individually. Second, their coding results were exchanged for discussion. When there were differences in coded themes and subthemes, another researcher participated to review the interview transcriptions again to make decisions. Third, all the themes and subthemes were formulated with reference to literature work to generate a complete thematic framework that integrated all the findings. The thematic framework was then translated into English. Fourth, the researcher did the back translation of the final thematic framework to ensure translation validation. During the whole data analysis, 2 researchers played the leading role, while other researchers were involved in reviewing the coding structure and interpretation regularly as “peer debriefing.”²⁵

Results

As shown in Table 1, among the 97 participants, 54 participants were female (56%). In terms of education, 56% participants had received bachelor degree or postgraduate education; 91% participants were younger than 50 years old.

Table 1. Participants' Demographic Information.

Item	n
Education	
≤High school	16 (16%)
College	27 (28%)
Bachelor	49 (51%)
Postgraduate	5 (5%)
Age, y	
18-29	39 (40%)
30-39	31 (32%)
40-49	18 (19%)
50-59	3 (3%)
≥60	6 (6%)
Gender	
Male	43 (44%)
Female	54 (56%)

Table 2. Emergent Themes and Subthemes.

Theme	Subtheme
1. Expectations on pharmaceutical care	1.1. Recommend the right drug 1.2. Advise about the effective use of drug 1.3. Advise about the safe use of drug 1.4. Recommend economic drug
2. Attitude toward pharmacist competence	2.1. Distrust in pharmacist's certification and qualification 2.2. Distrust in pharmacist's knowledge 2.3. Distrust in pharmacist's communication skills 2.4. Distrust in pharmacist's attitude
3. Experience of self-medication	3.1. Rely on personal experiences 3.2. Rely on relatives' experiences 3.3. Rely on drug label 3.4. Rely on media
4. Improvement suggestions	4.1. Suggestions to community pharmacist <ul style="list-style-type: none"> • Improve professional knowledge • Improve communication skills 4.2. Suggestions to community pharmacy <ul style="list-style-type: none"> • Provide fixed remuneration to pharmacists • Staff more pharmacists • Provide convenient after-sales service 4.3. Suggestions to government <ul style="list-style-type: none"> • Standardize the professional competence of pharmacists • Establish a monitoring and complaint mechanisms toward community pharmacists • Promote consumers' understanding of pharmacist's profession

The thematic analysis reached 4 main themes with associated subthemes (see Table 2).

Expectations on Pharmaceutical Care

Most of the participants had high expectations on pharmacists to provide pharmaceutical care regarding the use of OTC drugs. In their view, satisfactory pharmaceutical care

needed to cover 4 aspects: *Recommend the right drug*; *Advise about the effective use of drug*; *Advise about the safe use of drug*; and *Recommend economic drug*.

Recommend the right drug. To choose the right drug was the most concern of the participants. Most of them expressed their expectation to get proper drugs specific to their diseases, as

At least give me proper analysis of my disease, then tell me what drug I should take. Do not ask me to take a variety of drugs. (C005: 48, female, high school)

Moreover, some participants wanted community pharmacists to explain more about drug indications, composition, and pharmacological effects of each component. Especially for young participants, they mentioned that

I want them to explain more about drug ingredients, the effect of each ingredient. (C025: 26, female, bachelor)

Advise about the effective use of drug. How to take OTC drugs effectively was also a main concern of participants. The participants generally wanted to know more details about effective use of drugs from community pharmacists, such as

Tell me the correct usage and dosage. (C89: 33, male, college)

Something about usage and dosage, such as when I should take medicine. Is it before meals or after meals? (C39: 45, female, junior college)

Tell me how many days I should take it before stopping. (C076: 29, male, master)

Advise about the safe use of drug. The participants were generally concerned about the drug safety and hoped to get sufficient instructions from community pharmacists:

I hope that community pharmacists can tell me about the possible drug interactions which I need to pay attention to. (C045: 48, female, college)

It would be better if they could talk about adverse reactions and side effects. (C055: 37, female, bachelor)

Recommend economic drug. Compared with therapeutic efficacy, the participants showed less sensitivity to price. But they still wanted community pharmacists to suggest economic drugs, as

I hope they could recommend some effective and inexpensive drugs, not the most expensive drugs that are not covered by medical insurance. (C069: 42, female, college)

Attitude Toward Pharmacist Competence

While the participants had high expectations on community pharmacists' pharmaceutical care, they did not tend to seek pharmaceutical care from community pharmacists in

reality. The main reason was their distrust in pharmacist competence, which was composed of 4 subthemes: *Distrust in pharmacist's certification qualification*; *Distrust in pharmacist's knowledge*; *Distrust in pharmacist's communication skills*; and *Distrust in pharmacist's attitude*.

Distrust in pharmacist's certification and qualification. Some participants did not trust the service by community pharmacists because they did not know whether the community pharmacists were licensed:

" . . . do not know whether he/she has official license at all . . . " (C018: 46, female, college)

Distrust in pharmacist's knowledge. The majority of participants were especially concerned about whether community pharmacists had enough professional knowledge to provide pharmaceutical care:

I used to buy the drugs recommended (by community pharmacist), but they were useless. . . . Moreover, community pharmacists often recommended concurrent use of multiple drugs, maybe only one of them was in fact effective. (C039: 36, male, bachelor)

Distrust in pharmacist's communication skills. Some participants thought community pharmacists' lack of communication skills contributed to the overall distrust:

Even he was dressed like a pharmacist, he did not speak in a professional way. (C095: 38, male, bachelor)

Distrust in pharmacist's attitude. Some participants were affected by the bad service and attitude of pharmacist, which led to their distrust in pharmaceutical care provided by the pharmacist:

It feels that he was just careless, not professional at all. (C076: 36, female, bachelor)

Experience of Self-Medication

Because participants had general distrust in community pharmacist's competence, they would turn to self-medication with OTC drugs and: *Rely on personal experiences*; *Rely on relatives' experiences*; *Rely on drug label*; and *Rely on media*.

Rely on personal experiences. For many participants, the first choice was to rely on their own experiences to decide which OTC drugs to buy at community pharmacy. They generally thought that they knew the drugs well enough from experiences to use them for treating their diseases:

I only bought the drugs that were often used. I knew them well. (C019: 47, female, bachelor)

Rely on relatives' experiences. If the participants could not make their own decision, they would seek advice from family

members and friends who recommended drugs based on their experiences:

Usually the drugs were suggested by family relative and friends. (C082:37, female, bachelor)

Rely on drug label. If their own or relatives' experiences could not provide satisfactory guidance, the participants would actively read the drug label or package insert to decide which drugs they needed:

I bought the drugs according to the indications listed in the drug label. (C054: 36, male, bachelor)

Rely on media. Some participants said they would choose the OTC drugs by following the information from media. In particular, along with the popular use of smartphones among young consumers in China, they tended to search online information to guide their purchase of OTC drugs at community pharmacy, as

I will search with mobile BAIDU (an online search engine) . . . I also check some Apps of drug recommendation. (C022: 29, female, bachelor)

For some elderly participants, they sometimes followed the suggestions from famous medical TV programs to choose OTC drugs:

I watch TV . . . For example, "Yangsheng Tang (a medical TV program for health maintainance)," it recommended some good drugs. (C036: 54, female, junior school)

Improvement Suggestions

The participants thought collective actions of pharmacists, community pharmacy owners, and government were needed to improve the quality of pharmaceutical care provided by community pharmacists. Their suggestions could be categorized as *suggestions to community pharmacist*, *suggestion to community pharmacy*, and *suggestions to the government*.

Suggestions to community pharmacist. Some participants thought that community pharmacists needed to improve their professional knowledge and communication skills, as

They should learn more about the drugs and be more proactive at providing consumers with detailed drug information. (C011: 25, male, bachelor)

They should ask my symptoms carefully and look at my medical records. (C035: 28, female, bachelor)

They should be knowledgeable about the active ingredients of the OTC drugs and their efficacy (C048: 38, male, bachelor)

They should learn more about professional knowledge, and improve their capability to better convey advice to consumers. (C044: 26, female, bachelor)

Suggestions to community pharmacy. The participants also suggested that community pharmacy needed to take actions to facilitate the provision of pharmaceutical care by pharmacists. Some participants thought community pharmacy needed to change the floating salary structure and provide fixed remuneration to community pharmacists:

Don't pay them (pharmacists) with basic salary plus commission. Just give them fixed remuneration. (C021: 35, male, college)

Some participants thought the shortage of pharmacists was hindering the provision of pharmaceutical care because consumers wanted fast and convenient service at community pharmacy and did not want to wait, as

Pharmacists are few. It would be better if they have more pharmacists. (C031: 37, female, bachelor)

Some participants also suggested that community pharmacy should provide training to its staff:

Strengthen the management of pharmacy staff and provide more trainings. (C048:27, male, master)

In addition, some participants thought consumers might have other questions at home when taking the drugs. However, community pharmacy did not provide any convenient after-sales service, so

Community pharmacy should have the idea of after-sales service. Don't deny anything after selling the drugs. (C057: 32, male, bachelor)

Suggestions to the government. Some participants thought that the current disorder of community pharmacy was due to lack of government regulation, then

Government should have effective monitoring mechanism, complaint mechanism, etc. Now it feels that no one takes charge. (C073: 25, female, master)

Government should take actions to standardize the professional competence of pharmacists. (C088: 29, male, college)

Besides, some participants thought the profession of pharmacists had not been realized by consumers, which made them less keen to seek professional help from pharmacists:

I think that government should help consumers understand the importance of the pharmacist as a profession. (C091: 36, male, bachelor)

Discussion

This study found that participating consumers expected community pharmacists to provide pharmaceutical care. Similar to findings in previous research, consumers' most expectations on pharmaceutical care were recommendation of proper drugs and professional medication counseling.²⁶ Moreover, the participants in this study showed explicit interests in knowing further details about drug ingredients and their pharmacological actions. As OTC drugs in the same therapeutic group often have similar medical effects, consumers would like to know more information about alternative drugs to help them make informed choices. This finding implies that community pharmacists have to realize consumer's growing demand for professional service of providing specific drug information to consumers.

This study also identified distrust in pharmacist competence as a key issue for consumers to seek pharmaceutical care from community pharmacists. Literature had indicated that experiences of unsatisfactory interactions with pharmacists would discourage consumers to take in pharmacists' advice.^{27,28} As shown in this study, bad experiences had resulted in distrust in pharmacists' competence in terms of certification and qualification, professional knowledge, communication skills, and attitude. Once consumers lost trust in pharmacists, it would be difficult for community pharmacists to provide pharmaceutical care. This finding implies that consumers' trust (or distrust) in community pharmacist plays significant role in determining the quality of pharmaceutical care.

Another significant consequence of distrust in pharmacists' competence was consumers' increasing practice of self-medication with OTC drugs. As shown in this study, without consulting with community pharmacists, participating consumers relied on their personal experiences or their relatives' or friends' suggestions when choosing OTC drugs. They generally regarded OTC drugs as safe and lacked the respect for the potential risks of self-medication with OTC drugs.^{29,30} While consumers thought they could get enough information by reading drug label or package insert, technically the drug information is difficult for consumers to fully comprehend and understand.³¹ This study also found that consumers would let media guide their choice of OTC drugs, especially when it came to drug information on the Internet. Internet information which includes a lot of direct-to-consumer advertisement may not subject to stringent regulation and can be highly confusing and even misleading.³² Without professional and reliable advice from pharmacist, consumers' self-medication with OTC drugs could easily result in increased drug risks.

In addition, the demographic impact on consumers' requirements on pharmaceutical care of OTC drugs by community pharmacists needs to be noted. As shown in this study, the residents in Yinchuan City who were relatively younger, at better economy status and better educated, anticipated a higher level of pharmaceutical care. For example, they wanted to know more specific details about different

OTC drugs and were more proactive to find out more about the drugs via various means. It is not surprisingly as higher education level allows greater consumers' autonomy in self-treatment.³³ Accordingly, it will impose greater pressures on community pharmacists to improve their competence.

Practice Implications

Mutual understanding between consumers and pharmacists is crucial for the provision of pharmaceutical care at community pharmacy.³⁴⁻³⁶ On the contrary, if pharmacists lost trust from consumers, they would meet consumers' avoidance to their professional service. Therefore, how to build (or rebuild) consumers' trust in pharmacist competence is key for promoting pharmaceutical care regarding the use of OTC drugs at community pharmacy. From this perspective, collective efforts by pharmacists themselves, community pharmacy owners, and policy makers should be taken to realize this objective. First, policy makers need to legitimize the professional role and qualifications of community pharmacists as health care providers in public health. Second, community pharmacy owners should recognize pharmaceutical care provided by pharmacist as one necessary and distinguished feature of their pharmacy service and provide resources to support. Third, pharmacists need to improve their own professional knowledge, communication skills, and attitude. Particularly, pharmacists need to learn to communicate with consumers in a lively instead of scientific way to attract consumers' attention and increase their acceptance.³⁷ At the same time, public education is necessary to help increase consumers' health literacy and awareness about health risks associated with irrational drug use and their recognition of pharmacists' professional role in safeguard their drug safety.

Limitations and Future Research

This study provides exploratory evidence about consumers' opinions about community pharmacist's pharmaceutical care in relation to OTC drugs in China. The findings could be advanced in the future study in 3 aspects. First, large scale survey with consumers in other regions of China could be conducted to retest the findings from this study. Second, further qualitative study with key stakeholders as policy makers, business leaders of community pharmacy, and key representatives of community pharmacists could be conducted to collect their opinions to provide comparative materials. Third, while this study explored consumers' opinions about the pharmaceutical care that community pharmacists should provide in relation to the use of OTC drugs, future study can explore the proactive behaviors that consumers can take to interact with pharmacists to get more effective pharmaceutical care, which will significantly contribute to the field of studying pharmaceutical care from the view of consumers.

Conclusion

Consumers expected pharmacists to provide professional service about OTC drugs at community pharmacies. However, they were not keen on seeking pharmaceutical care from community pharmacists due to distrust in pharmacists' competence. Consumers' reliance on self-medication with OTC drugs caused them higher drug risks. Collective actions of pharmacists, community pharmacies, and government should be taken to rebuild consumers' trust in the competence of community pharmacist to improve the safe and appropriate use of OTC drugs at community pharmacy.

Appendix

Interview Guideline

1. Demographic information
 - Gender
 - Age
 - Education level
2. Expectations on pharmaceutical care of over-the-counter (OTC) drugs at community pharmacy
 - What kind of service you want to get from the community pharmacists?
 - Do you think you need guide from pharmacist to use OTC drugs correctly?
3. Experience of receiving pharmaceutical care of OTC drugs at community pharmacy (attitude toward pharmacist competence)
 - How many times do you buy OTC drugs from community pharmacy for a year?
 - Under what circumstances do you choose to go to a community pharmacy to buy OTC drugs?
 - When you choose drugs, do you listen to the suggestions from pharmacists?
 - What do you care about when buying OTC drugs that have not been used?
 - When you buy drugs at a pharmacy, do pharmacists take the initiative to provide professional guidance?
 - Do you have a bad situation in the pharmacy? Can you describe it?
 - Do you think the community pharmacists' professional level worthy of trust?
 - Do you think pharmacy pharmacists really care about your medication needs? If not, what do you think the reason is that?
4. Experience of self-medication with OTC drugs
 - If you cannot get advice from pharmacist, how you will make your own decision on buying OTC drugs?
 - Where do you get information of OTC drugs? Do you think them reliable?
5. Do you have any bad experience of self-medication?
5. Suggestions to improve pharmaceutical care of community pharmacists
 - What do you think the pharmacists themselves needs to improve to promote pharmaceutical care?
 - What do you think community pharmacy needs to improve to promote pharmaceutical care?
 - What do you think government needs to improve to promote pharmaceutical care?

Acknowledgments

We acknowledge all the participants in this research.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was supported by the University of Macau (MYRG2015-00072-ICMS-QRCM) and the National Social Science Foundation of China (Project No. 14BRK027).

ORCID iD

Hao Hu  <https://orcid.org/0000-0001-9441-106X>

References

1. Zaghoul AA, Elsergany M, El-Enein NA, Alsuwaidi H, Ayoub M. Over-the-counter medication patterns in households in Sharjah, United Arab Emirates. *Risk Manag Healthc Policy*. 2014;7:19-24.
2. Kairuz TE, Bellamy KM, Lord E, Ostini R, Emmerton LM. Health literacy among consumers in community pharmacy: perceptions of pharmacy staff. *Health Expect*. 2015;18(5):1041-1051.
3. Schmiedl S, Rottenkolber M, Hasford J, et al. Self-medication with over-the-counter and prescribed drugs causing adverse-drug-reaction-related hospital admissions: results of a prospective, long-term multi-centre study. *Drug Saf*. 2014;37(4):225-235.
4. Shi CW, Bayard MA. Abuse of over-the-counter medications among teenagers and young adults. *Am Fam Physician*. 2011;84:745-750.
5. Montgomery AT, Klveemark-Sporrong S, Henning M, Tully MP, Kettis-Lindblad A. Implementation of a pharmaceutical care service: prescriptionists', pharmacists' and doctors' views. *Pharm World Sci*. 2007;29(6):593-602.
6. Gong H, Li Y. Investigation and analysis of the behavior of OTC drugs purchase among residents. *China Pharm*. 2014;25(4):314-317.
7. Chang L, Zhang Y. Investigation and analysis of community pharmacy service demand of resident. *Chin Gen Pract*. 2010;13(8):2441-2444.

8. Ge S, He TT, Hu H. Popularity and customer preferences for over-the-counter Chinese medicines perceived by community pharmacists in Shanghai and Guangzhou: a questionnaire survey study. *Chin Med*. 2014;9:22
9. Jin Z, Ma Y, Gu J, Xue W. Investigate and analysis on weakening of pharmacy service function in drugstores. *China Pharm*. 2014;23(12):2-14.
10. Kaae S, Traulsen JM, Nrgaard LS. Challenges to counseling customers at the pharmacy counter—why do they exist? *Res Social Adm Pharm*. 2012;8(3):253-257.
11. International Pharmaceutical Federation/World Health Organization. *Good Pharmacy Practice. Joint FIP/WHO Guidelines on GPP: Standard for Quality of Pharmacy Services*. WHO: The Hague, The Netherlands; 2012.
12. Panvelkar PN, Saini B, Armour C. Measurement of patient satisfaction with community pharmacy services: a review. *Pharm World Sci*. 2009;31(5):525-537.
13. Yaghubifard S, Rashidian A, Kebriaeezadeh A, et al. Developing a patient satisfaction questionnaire for services provided in Iranian community pharmacies. *J Res Pharm Pract*. 2016;5(2):106-115.
14. Malewski DF, Ream A, Gaither CA. Patient satisfaction with community pharmacy: comparing urban and suburban chain-pharmacy populations. *Res Social Adm Pharm*. 2015;11(1):121-128.
15. Takaki H, Abe T, Hagihara A. Perceptions of pharmacists and patients on information provision and their influence on patient satisfaction in Japanese community pharmacies. *J Eval Clin Pract*. 2015;21(6):1135-1141.
16. Cavaco AM, Dias JS, Bates IP. Consumers' perceptions of community pharmacy in Portugal: a qualitative exploratory study. *Pharm World Sci*. 2005;27(1):54-60.
17. Alotaibi HS, Abdelkarim MA. Consumers' perceptions on the contribution of community pharmacists in the dispensing process at Dawadmi. *Saudi Pharm J*. 2015;23(3):230-234.
18. Catic T, Jusufovic FI, Tabakovic V. Patients perception of community pharmacist in Bosnia and Herzegovina. *Mater Sociomed*. 2013;25(3):206-209.
19. Britten N. Qualitative interviews in medical research. *BMJ*. 1995;311:251-253.
20. Britten N. Qualitative interviews. In: Pope C, Mays N, eds. *Qualitative Research in Health Care*. 3rd ed. Oxford, UK: Blackwell Publishing; 2006:12-20.
21. Xinhua. China is home to 277,000 independent pharmacies. *China Daily*. January 17, 2013. http://www.chinadaily.com.cn/business/2013-01/17/content_16130395.htm. Accessed June 10, 2016.
22. Population Reference Bureau. 2012 world population data sheet. *PRB*. 2012. http://www.prb.org/pdf12/2012-population-data-sheet_eng.pdf. Accessed June 10, 2016.
23. Marshall MN. Sampling for qualitative research. *Fam Pract*. 1996;13(6):522-526.
24. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77-101.
25. Hadi MA, Closs SJ. Ensuring rigour and trustworthiness of qualitative research in clinical pharmacy. *Int J Clin Pharm*. 2016;38(3):641-646.
26. Villako P, Raal A. A survey of Estonian consumer expectations from the pharmacy service and a comparison with the opinions of pharmacists. *Pharm World Sci*. 2007;29(5):546-550.
27. Barnes JM, Riedlinger JE, McCloskey WW, Montagne M. Barriers to compliance with OBRA '90 regulations in community pharmacies. *Ann Pharmacother*. 1996;30(10):1101-1105.
28. Barner JC, Bennett RW. Pharmaceutical care certificate program: assessment of pharmacists' implementation into practice. *J Am Pharm Assoc*. 1998;39(3):362-367.
29. Wertheimer AI, Serradell J. A discussion paper on self-care and its implications for pharmacists. *Pharm World Sci*. 2008;30(4):309-315.
30. Hughes CM. Monitoring self-medication. *Expert Opin Drug Saf*. 2003;2(1):1-5.
31. Shrank WH, Avorn J. Educating patients about their medications: the potential and limitations of written drug information. *Health Aff*. 2007;26(3):731-740.
32. Wilkes MS, Bell RA, Kravitz RL. Direct-to-consumer prescription drug advertising: trends, impact, and implications. *Health Aff*. 2000;19(2):110-128.
33. Li Y, Rao K, Ren X. Use of and factors associated with self-treatment in China. *BMC Public Health*. 2012;12:995
34. Morgall JM, Almarsdóttir AB. The new consumer—implications for pharmacy. *Int J Pharm Pract*. 1999;7(4):198-201.
35. Worley MM, Schommer JC, Brown LM, et al. Pharmacists' and patients' roles in the pharmacist-patient relationship: are pharmacists and patients reading from the same relationship script? *Res Social Adm Pharm*. 2007;3(1):47-69.
36. Mey A, Knox K, Kelly F, et al. Trust and safe spaces: mental health consumers' and carers' relationships with community pharmacy staff. *Patient*. 2013;6(4):281-289.
37. Gastelurrutia MA, Benrimoj SIC, Castrillon CC. Facilitators for practice change in Spanish community pharmacy. *Pharm World Sci*. 2009;31(1):32-39.