

Elderly consumers' satisfaction with the quality of community pharmacy services in Ho Chi Minh City, Vietnam: a Q-methodology study

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Abstract

Introduction: The purpose of this study was to understand elderly consumers' satisfaction on the community pharmacy services in Ho Chi Minh City, Vietnam.

Materials and methods: A sample of 32 consumers, aged over 60, was recruited in four pharmacies in Ho Chi Minh City, Vietnam, from December, 2017 to January, 2018. Q-methodology was used to identify the patterns of consumers' satisfaction.

Results: Two distinct patterns of elderly consumers' viewpoints toward the community pharmacy services were identified. Elderly consumers in viewpoint 1 were satisfied with the geographic accessibility of community pharmacies. Elderly consumers in viewpoint 2 were satisfied with the affordability of medicines. However, consumers of both viewpoints expressed dissatisfaction with the pharmacy staff counseling on missed doses, storage, side effects, and interactions of medicines.

Conclusion: The results from this study suggest that pharmacy staff need to spend more time for consultations on proper medication use with elderly consumers.

Keywords

community pharmacy, elderly consumer, Q-methodology, satisfaction, Vietnam

Introduction

Internationally, multiple countries are experiencing aging populations in the 21st century, and Vietnam is no exception. Between 2015 and 2050, the population of the World's

elderly people is expected to approximately double from 12% to 22% (WHO 2018). A majority of older people (nearly 70%) is currently living in low or middle-income countries (Lunenfeld and Stratton 2013); and the proportion of elderly people will accounted for 80% in 2050

(WHO 2018). In Vietnam, the proportion of elderly people accounts for 10% in 2017 and will nearly double, reaching 18.1% in 2049 (General Statistics Office and United Nations Population Fund 2016).

Along with the increase in the number of elderly people, there is an increase in health problems for this age group. Older people often face multiple chronic conditions, and consequently, take medications more than any other age groups (Jansen and Brouwers 2012). According to the reported data by Morris (2017), over 25% of all prescription medicines and 33% of all over-the-counter medicine sold were consumed by elderly people; over 90% of elderly people take of at least one medicine per week, and over 40% use at least 5 medicines per week. The use of multiple medications in older adults may increase the risk of drug duplication, drug interactions, adverse drug reactions, and also results in medication nonadherence (Charlesworth et al. 2015).

In fact, the health care of the elderly people significantly depends on the community health services, including community pharmacies, due to easy and convenient access. In Vietnam, most people (over 80%), including older people, prefer to go to community pharmacy when they have health-related issues (Chalker et al. 2002). Therefore, it is necessary to focus on improving the quality of service of community pharmacies to meet the health care needs of elderly patients.

The needs and expectations of elderly clients and potential areas for improvement of community pharmacy service can be captured and determined through customer satisfaction research. Worldwide, there are only a few studies on elderly customers' point of view of community pharmaceutical services. For example, a study by Erickson and Hirshorn (1996) was conducted in the USA and another study by Wood et al. (2015) in the UK. In Vietnam, according to our understanding, the satisfaction of older customers with community pharmacy services has not been conducted in any study until the present time.

Materials and methods

Study design

In the present study, the views of older customers on the quality of pharmaceutical services in Vietnam were determined by Q-methodology, which was developed by William Stephenson in the mid-1930s (Brown 1993). The Q-methodology is a unique method, which uses the combination of qualitative and quantitative methodology, and it contributes a useful tool, which helps in the systematic study of people's subjectivities (Pabari 2011). Its strength is the ability to be statistically robust, with a sample size of only 30 to 40 participants (Fairweather and Klonsky 2009; Watts and Stenner 2012).

The first stage of Q-methodology is the development of concourse. Concourse is an extensive collection of all possible statements related to the topic of interest.

With the aim to obtain a large number of statements, the present study used a non-systematic review method of thirty articles on customer satisfaction on community pharmacies. Based on this review, a concourse containing 120 statements was collected. A Q-sample of 40 statements were then created by recruiting representative of the concourse into the following four categories: (A) Community pharmacy; (B) Medicine; (C) Knowledge, skills, attitude, and (D) Behavior of community pharmacist. The questionnaire used in this study was obtained from our similar study on the overall population. The structure of the Q-sample and the content of 40 statements was shown in Table 1.

Participants

Elderly pharmacy clients who were over the age of 60 and had reading abilities of printed text with a font size of 14 pt would meet the inclusion criteria for the present study. Elderly pharmacy clients in four community pharmacies in Ho Chi Minh city were purposely selected to cover a wide range of potential pharmacy clients, with variations in frequency of pharmacy visits and number of medications purchased. Eight participants were recruited from each pharmacy. Among four selected community pharmacies, two pharmacies were located in the city center and the other two were in the outskirts of the city (about 18–20 km out of the city center); two were near the hospital and two were in the residential area. As the Q-methodology concerns with identifying a range of perspectives, rather than analyzing frequencies of every perspective that exists (Renberg et al. 2011), a small sample size of 32 older customers used in this study was considered appropriate, as suggested by Watts and Stenner (2012). This study was approved by the Ethics Committee of Can Tho University of Medicine and Pharmacy (Ref. No. HE2017001). The study was performed in accordance with the tenets of the Declaration of Helsinki, with respect to the rights and dignity of the participants. Participants were provided with a participant information sheet and signed a consent form to agree to participating in the study.

Data collection

Forty cards related to 40 statements of Q-sample and Q-distribution grid (see Fig. 1a) were printed and provided to older customers. They were then asked to sort the cards into eleven piles on the Q-distribution grid, from -5 as "most dissatisfied" to +5 as "most satisfied", in relation to their overall satisfaction with current pharmaceutical services delivery in community pharmacies. A step-by-step printed guide developed by Watts and Stenner (2012) was also provided to the participants to perform the Q-sorting process. The time for a participant to complete sorting was 30–45 minutes. The "Q-sort" data collection was performed at a private area in the pharmacy between December 2017 and January 2018.

Table 1. Statement number, statement and factor score for factor 1 (F1) and factor 2 (F2).

#	Category	Statement	Q-sort value	
			F ₁	F ₂
1	C	“The pharmacist has high professional knowledge”	+1	-3
2	B	“The labels of the medicines I get are clear and easy to read”	+1	+5
3	C	“The pharmacist provides easy-to-understand information”	-1	+2
4	B	“The pharmacy always offers medicines at an affordable price”	-3	+4
5	A	“Appearance of the pharmacy is professional and aesthetic”	0	+2
6	B	“I get advice about how to store medications at home from the pharmacist”	-4	-2
7	C	“The pharmacist is willing to answer all of my questions”	0	+4
8	A	“Operating hours of the pharmacy are convenient for me”	+4	-1
9	B	“I trust the quality of the medicines purchased at the pharmacy”	-1	+4
10	D	“To prevent mistakes, the pharmacist provides information on medication use in writing”	-3	-1
11	A	“The pharmacy has a comfortable waiting area and a sufficient number of seats”	-5	-1
12	C	“I trust the pharmacist; he honors the confidentiality of information regarding me and my purchases”	0	-3
13	C	“After consultations, I am well aware of the rules for taking medicines”	+1	0
14	A	“Pharmacy services are easily accessible and no prior appointment is necessary before a visit”	+5	0
15	B	“Information on medicine prices is clearly visible”	-4	+2
16	B	“I get the required amount of necessary medicines”	+4	+3
17	A	“The pharmacy does not provide for private counseling areas; other customers can overhear conversations or see the medicines”	-1	-2
18	C	“If I have health problems, I will go to the pharmacy. After consulting a pharmacist, I feel better”	+2	-4
19	D	“The pharmacist asks me questions related to the disease to ensure that my medicine use is reasonable”	+2	-1
20	A	“The pharmacy is located in a convenient location, close to my home or workplace”	+5	0
21	C	“The pharmacist is a courteous, friendly, and helpful person”	+2	+1
22	D	“The pharmacist indicates how to take medicines and provides advice on their frequency of use”	+2	+5
23	D	“The pharmacist gives advice on maintaining my health and a healthy lifestyle”	-2	-1
24	B	“The pharmacy has all the medicines that I need”	0	+1
25	A	“In an emergency, I can easily find a pharmacy for pharmaceutical services”	+4	-3
26	D	“I am satisfied with the information provided by the pharmacist”	0	+1
27	A	“The pharmacy area is well-lit and clean”	+3	+3
28	C	“The pharmacist listens attentively to my complaints about my health”	+1	-2
29	D	“I get information about what to do if I miss a dose”	-5	-4
30	B	“The pharmacist helps select the medicines and provides information about alternative medicines and their prices”	-1	+3
31	D	“The pharmacist is busy and does not allow enough time for consultation”	-3	-5
32	A	“The pharmacy provides good pharmaceutical services; I would continue to use these services”	+1	0
33	D	“The pharmacist provides necessary warnings about the side effects and possible interactions of medicines”	-2	-2
34	A	“The number of counters in the pharmacy for dispensing medicines is sufficient”	0	+2
35	C	“While communicating with pharmacists, I feel respected and comfortable”	+3	+1
36	D	“Dispensing of the medication by the pharmacist does not take much time”	-4	-5
37	D	“The pharmacist explains what needs to be done to achieve an effective treatment”	-2	0
38	D	“Before dispensing the medicines, the pharmacist rechecks the medicines’ name and dosage”	+3	+1
39	C	“The pharmacist is able to explain things clearly for me to understand”	-1	0
40	C	“All the efforts of the pharmacist are to help improve my health and not to profit as much as possible on my account”	-2	-4

Category A: Community pharmacy. Category B: Medicine. Category C: Pharmacist’s knowledge, skills, attitude. Category D: Pharmacist’s behavior.

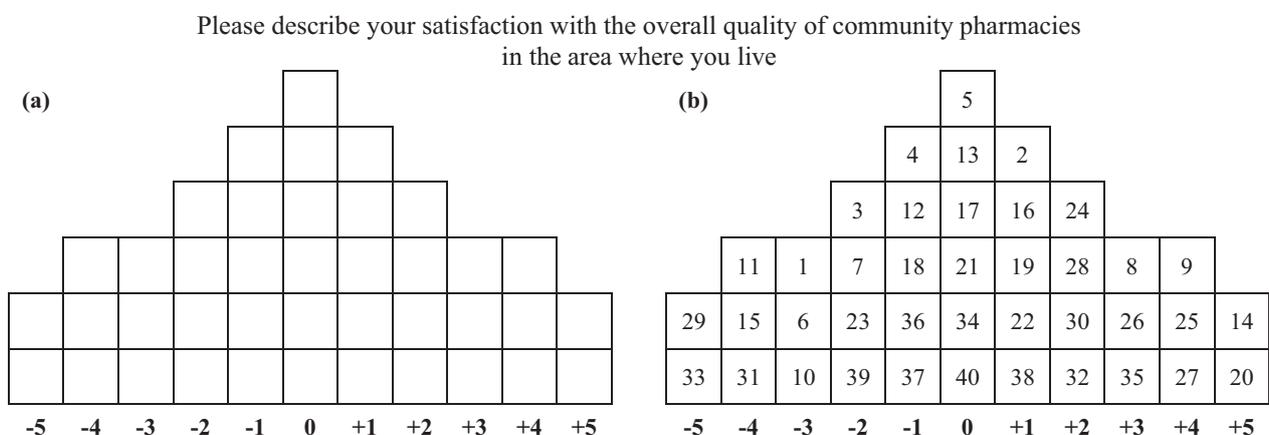


Figure 1. Q-distribution grid. (a) Q-distribution grid used for the “Q-sort” data collection, where 40 cards (statements) are sorted by participants on 11-point scale from -5 “most dissatisfied” to +5 “most satisfied”. (b) Q-distribution grid with an example of a Q-sort from participant 3.

Data analysis

Analysis of Q-sort data was conducted using the PQMethod version 2.35. Principal components analysis (PCA) extraction and varimax rotation were used to identify the prominent common viewpoints, known as factors. Optimal numbers of factors were determined based on the following four criteria:

- (i) factors having eigenvalues greater than 1.0 (Guttman 1954; Kaiser 1960);
- (ii) factors containing two or more respondents (sorts) with significant loading (Brown 1980);
- (iii) factors on the left side of the inflection point observed from the Scree plot analysis (Cattell 1996);
- (iv) factors whose actual eigenvalue was greater than the 95th percentile eigenvalue obtained from parallel analysis (Horn 1965).

Significant loading is defined if its absolute value of loading is greater than 0.41, based on calculations suggested by Brown (1980). Respondents with significant loading on only one factor were considered respondent who defines the factor (also known as defining Q-sort). Respondents with non-significant loading on any factor (known as non-significant Q-sort), and significant loading on two or more factors (confounded Q-Sort) would be removed from the next stage of calculating factor score.

Interpretation of the obtained viewpoints was done by prioritizing the use of distinguishing statements with high factor score (Q-sort value: -5, -4, -3, +3, +4, +5), followed by any useful distinguishing statements. A statement whose score on a factor had a significant difference with its score on other factors, was considered a distinguishing statement for that factor (Shabila 2014).

Results

A total of 32 older customers participated in the current study and completed the Q-distribution grid. Participants' ages ranged from 61 to 76 years (Mean = 67.7, SD = 4.9). Among them, more than half were female (53%), half of which had a university degree (50%). Participant information was shown in Table 2.

As the result of factor extraction, of the eight factors extracted, all eight factors had eigenvalue of greater than 1.0. Seven factors had two or more significant loadings. Scree plot analysis indicated that position of inflection point was located at the third component (Fig. 2), therefore, the two factors (factor 1 and 2) that were at the left of the inflection point were selected. In addition, these two factors whose actual eigenvalue were greater than the 95th percentile eigenvalue obtained from the parallel analysis, were also recommended to be retained (Fig. 2). Based on the above results, two-factor solution was considered to be the most solution for current research data.

As the result of factor rotation with two-factor solution (see Table 2), two factors were defined by 27 customers

Table 2. Participant information, rotated factor matrix with an "x" indicating respondent who defines the factor.

Respondent (Q-sort)	Age	Gender	Education level	Factor Loading		
				Factor 1	Factor 2	
1	61	Male	Secondary high school	0.61 ×	0.16	
2	72	Female	Secondary high school	0.52 ×	0.36	
3	65	Male	High school	0.73 ×	0.26	
4	70	Female	University	0.56 ×	0.13	
5	**	75	Female	University	0.52 0.55	
6		73	Female	University	-0.04 0.56 ×	
7		63	Male	University	0.64 ×	0.32
8		68	Female	Secondary high school	-0.04 0.61 ×	
9		61	Female	High school	0.65 ×	-0.02
10		67	Male	College	0.19 0.59 ×	
11		76	Male	College	0.73 ×	0.05
12		72	Female	College	0.19 0.48 ×	
13		66	Female	Secondary high school	-0.21 0.53 ×	
14		73	Male	University	0.50 ×	0.02
15	*	70	Female	University	0.35 0.39	
16		69	Male	University	0.63 ×	-0.02
17		64	Female	College	0.66 ×	-0.15
18	*	62	Male	University	0.31 0.16	
19		71	Female	High school	0.69 ×	-0.11
20		73	Female	University	0.48 ×	0.12
21		65	Female	Secondary high school	0.64 ×	0.23
22		61	Female	High school	0.30 0.51 ×	
23		61	Male	University	-0.21 0.67 ×	
24		73	Male	University	0.01 0.52 ×	
25		75	Female	University	0.30 0.55 ×	
26		73	Male	Secondary high school	0.10 0.50 ×	
27		62	Male	University	0.66 ×	0.09
28		68	Female	University	0.60 ×	0.07
29	*	69	Male	University	0.11 0.06	
30		61	Male	University	0.18 0.45 ×	
31		63	Male	High school	0.11 0.58 ×	
32	*	64	Female	Secondary high school	0.20 0.37	
Explained variance (%)	-	-	-	21	15	

× - indicates defining respondents with significant loading (absolute value of loading > 0.41) on only one factor.

* - indicates respondents with non-significant loading on any factors (non-significant Q-sort).

** - indicates respondents with significant loading on both two factors (confounded Q-sort).

(84.4%). Of the remaining 5 participants, four customers (12.5%) had non-significant Q-sort, and one customer (3.1%) had confounded Q-sort. Factor scores for each of the statements were calculated based on the 27 defining Q-sorts of participants (shown in Table 1). Two obtained factors accounted for 36% of the total variance of the study and the correlation coefficient between them was 0.25. These factors represented two distinct patterns of elderly consumers' viewpoints toward the service quality of community pharmacy in Ho Chi Minh city, Vietnam: Viewpoint 1 - geographic accessibility of community pharmacies; Viewpoint 2 - affordability of medicines.

Viewpoint 1 - Geographic accessibility of community pharmacies

There were fifteen older customers who loaded significantly on viewpoint 1, which accounted for 21% of the total variance of study. Distinguishing statements used for interpreting viewpoint 1 were shown in Table 3. Older custo-

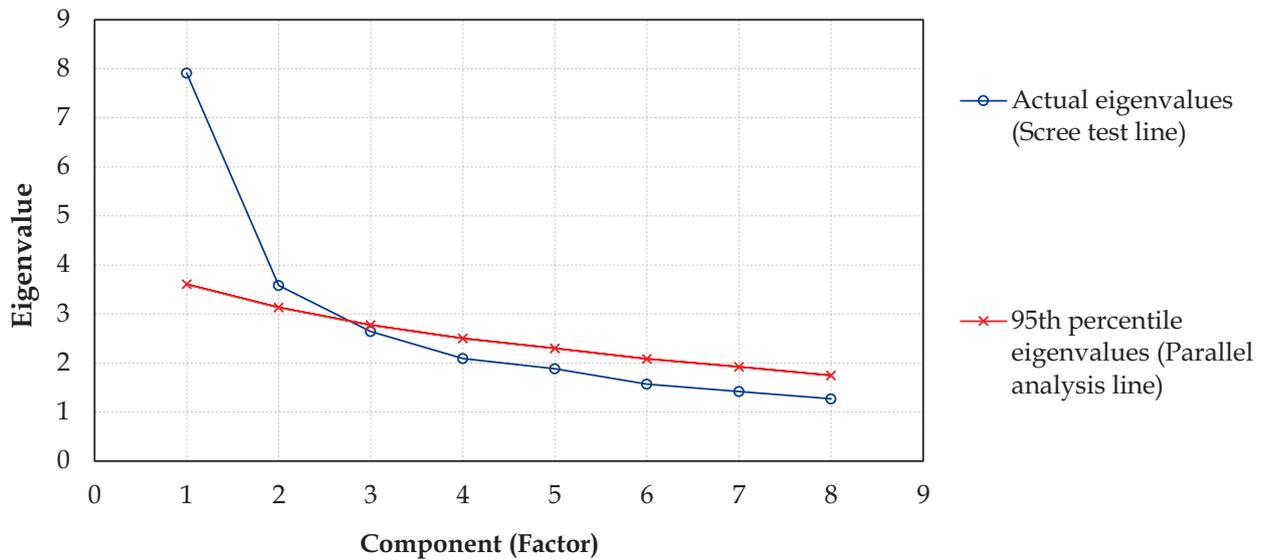


Figure 2. Scree plot and parallel analysis.

mers of this viewpoint had reached a high level of satisfaction with pharmacy location: “the pharmacy is located in a convenient location, close to my home or workplace” (#20: +5); the pharmacy operating hours: “operating hours of the pharmacy are convenient for me” (#8: +4); and accessibility of pharmaceutical services: “pharmacy services are easily accessible and no prior appointment is necessary before a visit” (#14: +5), “in an emergency, I can easily find a pharmacy for pharmaceutical services” (#25: +4).

Viewpoint 2 – Affordability of medicines

Viewpoint 2, which accounted for 15% of the total variance of study, contained twelve older customers with significant loading. Distinguishing statements used for interpreting viewpoint 2 were presented in Table 3. Older customers in this viewpoint were highly satisfied with the availability of quality medicine at an affordable price in pharmacies: “I trust the quality of the medicines purchased at the pharmacy” (#9: +4), “the pharmacy always offers medicines at an affordable price” (#4: +4); suitability of medicine labels: “the labels of the medicines I get are clear and easy to read” (#2: +5); and information of alternative medicines and their prices: “the pharmacist helps select the medicines and provides information about alternative medicines and their prices” (#30: +3). They were less satisfied with availability of necessary drugs: “the pharmacy has all the medicines that I need” (#24: +1); and information on drug prices in pharmacies: “information on medicine prices is clearly visible” (#15: +2).

Consensus among viewpoints

Consensus between viewpoint 1 and 2 was determined based on the use of consensus statements (see Table 4). Consensus statements are defined as statements whose score has a statistically significant similarity in all viewpoints (Brown 1980; Watts and Stenner 2012).

Table 3. Distinguishing statements for viewpoint 1 and 2.

#	Statement	Q-sort value
Viewpoint 1		
8	“Operating hours of the pharmacy are convenient for me”	+4
14	“Pharmacy services are easily accessible and no prior appointment is necessary before a visit”	+5
20	“The pharmacy is located in a convenient location, close to my home or workplace”	+5
25	“In an emergency, I can easily find a pharmacy for pharmaceutical services”	+4
Viewpoint 2		
2	“The labels of the medicines I get are clear and easy to read”	+5
4	“The pharmacy always offers medicines at an affordable price”	+4
9	“I trust the quality of the medicines purchased at the pharmacy”	+4
15	“Information on medicine prices is clearly visible”	+2
24	“The pharmacy has all the medicines that I need”	+1
30	“The pharmacist helps select the medicines and provides information about alternative medicines and their prices”	+3

All distinguishing statements in the table are significant at $p < 0.01$.

Table 4. Consensus statements for two viewpoints.

#	Statement	Q-sort value	
		Viewpoint 1	Viewpoint 2
6	“I get advice about how to store medications at home from the pharmacist”	-4	-2
16	“I get the required amount of necessary medicines”*	+4	+3
17	“The pharmacy does not provide for private counseling areas; other customers can overhear conversations or see the medicines”*	-1	-2
21	“The pharmacist is a courteous, friendly, and helpful person”*	+2	+1
27	“The pharmacy area is well-lit and clean”*	+3	+3
29	“I get information about what to do if I miss a dose”	-5	-4
33	“The pharmacist provides necessary warnings about the side effects and possible interactions of medicines”*	-2	-2

All statements in the table are non-significant at $p > 0.01$, and statements with an “*” are non-significant at $p > 0.05$.

Discussion

In this study, the Q-methodology was used for the first time to study the satisfaction of older customers on the quality of community pharmacies. The study results showed that there were two distinct patterns of elderly consumers' viewpoints toward pharmaceutical services: (1) geographic accessibility of community pharmacies, (2) affordability of medicines. In viewpoint 1, most satisfaction indicators of community pharmacies are highly appreciated by older customers. For viewpoint 2, the majority of indicators of medicines also achieved high satisfaction, except for the two indicators: availability of necessary medicines, and information on medicine prices. From these results, the study suggests that community pharmacies need to improve these two satisfaction indicators to further enhance the satisfaction of older pharmacy patients.

In the present study, older customers of both viewpoints expressed high satisfaction on receiving a sufficient number of medicines: "I get the required amount of necessary medicines" (#16: +4; +3) ($p > 0.05$); and pharmacy area: "the pharmacy area is well-lit and clean" (#27: +3; +3) ($p > 0.05$). Older customers of both viewpoints expressed a low level of satisfaction with the attitude of the pharmaceutical staff: "the pharmacist is a courteous, friendly, and helpful person" (#21: +2; +1) ($p > 0.05$). In both viewpoint 1 and 2, older customers were not satisfied with private counseling practice: "the pharmacy does not provide for private counseling areas; other customers can overhear conversations or see the medicines" (#17: -1; -2) ($p > 0.05$). Dissatisfaction of older customers was also found in aspects of medication counseling by pharmacists such as medicine storage: "I get advice about how to store medications at home from the pharmacist" (#6: -4; -2) ($p > 0.01$); missing a dose: "I get information about what to do if I miss a dose" (#29: -5; -4) ($p > 0.01$); and adverse effects, medicine interactions: "the pharmacist provides necessary warnings about the side effects and possible interactions of medicines" (#33: -2; -2) ($p > 0.05$).

In terms of analysis results on consensus among viewpoints, the quality of medication counseling was associated with high levels of older customer dissatisfactions. Older customers from both viewpoints were dissatisfied with medication counseling on medicine storage, missing a dose, adverse effects, and medicine interactions. A study by Modig et al. (2012) found that a lack of or an inadequacy of medication counseling from their healthcare professional could cause anxiety in the patient, thereby, affecting the effectiveness of patient's medication therapy. This study suggests that there is a need for timely improvements in medication counseling activities in community pharmacies to enhance the quality of pharmaceutical care for elderly patients. Through patient counseling, pharmacy staff may reveal, solve and prevent patient's drug-related problems, improve the rational use of medicines, and enhance customer satisfaction with pharmaceutical care (Yang et al. 2016).

In the current study, the two-factor solution was considered as the optimal factor solution because the total variance of the two factors (36%) is within the acceptable range of 35–40%, recommended by Watts and Stenner (2012). For the purpose of creating distinction between obtained factors, a small correlation coefficient of 0.25 between factor 1 and factor 2 were found to be consistent, according to the criteria given by Webler et al. (2009).

The current study had some limitations. Participants were only selected from four community pharmacies in Ho Chi Minh City. In the future, our study will be conducted to recruit older customers on more community pharmacies in other cities with the aim of collecting a variety of customers' perspectives on pharmaceutical services in Vietnam. Additionally, a larger population will be covered in the future study. Because the data of this study were collected using a new technique (Q-sort), therefore, an unclear understanding on behalf of elderly participants regarding the Q-sorting procedure might have impacted the research results. This limitation can be mitigated in the future by explaining directly, in verbal language, to the participants besides providing a printed guide.

Conclusion

The current study applied Q-methodology to explore elderly consumers' perspectives on community pharmacies in Ho Chi Minh City, Vietnam. The results of the study can help improve the understanding of pharmaceutical managers, policymakers, and educators on the satisfaction of older pharmacy customers. Moreover, based on the discussed potential areas for improvement of pharmaceutical services, community pharmacies can come up with appropriate timely solutions to improve healthcare services and satisfaction for the elderly. Successful application of the Q-methodology in this study creates a premise for future pharmaceutical research projects to study the subjectivity of people.

Disclosures

The abstract of this paper was presented at the 78th FIP World Congress of Pharmacy and Pharmaceutical Sciences as a poster presentation with interim findings.

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