



ORIGINAL ARTICLE

Public's perception and satisfaction on the roles and services provided by pharmacists – Cross sectional survey in Sultanate of Oman



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KEYWORDS

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Abstract *Background and objectives:* An important factor that will help in advancement of the pharmacy services in any country would be to understand the public needs, expectation and satisfaction. There are limited published studies conducted in Sultanate of Oman regarding the perception and satisfaction of public on the role and services provided by pharmacists. The present study was conducted to assess the perception and satisfaction of general public in Sultanate of Oman on the roles, and services received from the pharmacists. *Methods:* The survey was conducted among public in the Governorates of A'Dahera and Muscat in Oman during 2013. The questionnaire had items to assess two aspects: perception on the roles and responsibilities of pharmacists and satisfaction on the services provided. The responses to the questions marked in a five point Likert scale were assessed using a scoring scheme. Accordingly, the median perception, and satisfaction score and median total score for the participants were estimated. The median scores of the participants were related with the demographics of the participants and frequency of visit to pharmacy. *Results:* A total of 390 completed questionnaires were obtained. The median total score of the participants based on all the questions was 79 (Inter Quartile Range (IQR), 12) which represents a moderate score. The median perception and satisfaction scores were 44 (IQR 5) and 34 (IQR 7) which represent a good and moderate score, respectively. Perception of the participants differed based on employment status, frequency of visit to pharmacy and governorate represented by participants while satisfaction was influenced by educational qualification and frequency of visit to pharmacy. *Conclusions:* Public had a good perception regarding the roles of the pharmacists while they were only moderately satisfied with the services provided. Steps have to be taken to improve the services and relationship of pharmacists, and thereby improve the satisfaction of the customers.

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An extended study in a broader population involving more governorates will provide an enhanced representation regarding this important aspect.

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1. Introduction

It is noted that operational practice for pharmacy practice varies between countries (Tang and Sporrang, 2008). Pharmacists have provided clinical expertise regarding selection, handling, preparation, procurement, and utilization of medications and, more recently, making sure that drugs attain the maximum benefits for the patients (Schondelmeyer, 2009; Joint Commission of Pharmacy Practitioners, 2008; Kelly and Rucker, 2006). Over the past four decades, the pharmacy profession has made considerable efforts to shift its focus from medication supply to direct patient care (Hajj et al., 2011). Pharmacists are expected to provide pharmaceutical care within a patient–pharmacist professional framework that is based upon caring, trust, communication, cooperation, and mutual decision making in which the pharmacist works very closely with the patient (American Pharmacists Association, 2012; Hassali et al., 2012).

Pharmacists and patients both have specific and significant roles and responsibilities in the pharmacist–patient professional relationship (Worley et al., 2007). It is widely accepted that consumer satisfaction is an integral component of the quality of health care (Larson et al., 2002; Krska et al., 1995). Cleary and McNeil defined satisfaction as “the health care recipient’s reaction to salient aspects of his or her service experience” (Cleary and McNeil, 1988). Ideally the definition of professional value of pharmacists needs to be considered in terms of how consumers perceive it (Cavaco et al., 2005). Unless the patients appropriately understand the pharmacist’s professional role especially with respect to direct patient care activities, the successful implementation of the pharmaceutical care framework in pharmacies cannot be attained (Hajj et al., 2011).

Patients’ acceptance to provision of healthcare by each professional group is affected by either the understanding of language used for communication, or the cultural perception toward health and is greatly dependent on their cultural background. It is probable that prejudice on the pharmacist’s role may arise from the public’s expectations, and will influence the decision whether they seek advice, trust the pharmacists, use pharmaceutical services as desired (Tang and Sporrang, 2008). Various studies have been conducted worldwide assessing public’s or patient’s perception and satisfaction of the roles and responsibilities of pharmacists (Hajj et al., 2011; Worley et al., 2007; Larson et al., 2002; Cavaco et al., 2005; Al Arifi, 2012; Ganesan and Subramanian, 2011; Gidman et al., 2012; Morrow et al., 1993; Sharma et al., 2009; Perepelkin, 2011; Eades et al., 2011; Wirth et al., 2011; Bawazir, 2010; Peterson et al., 2010). Results varied depending on the studies with some demonstrating a good level of perception and satisfaction while others indicating a lot of areas for improvement (as expected by the consumers). The society expects the pharmacist to play a definite role in positive patients’ outcome by taking pro-active role in various segments.

An important factor that will help in advancement of the pharmacy services in any country would be to understand the public’s need, expectation and satisfaction. This will assist the pharmacists, organizations and regulatory bodies in modifying the extent, range and quality of services provided depending on the customer’s needs and views. This will open up areas for improvement in patient/customer and pharmacist relationship. Equally it is important to understand any misconceptions or gaps in the public’s attitudes on the roles and responsibilities of the pharmacists. There are limited published studies conducted in Oman in this aspect. It is expected that such a study would be a useful addition to the existing data worldwide. Accordingly, this study was conducted with the objective to assess the perception and satisfaction of general public on the roles and responsibilities, and services provided by pharmacists.

2. Methods

The study was approved by the Institutional Research Committee, College of Pharmacy and Nursing, University of Nizwa. A 23 item self-administered questionnaire was developed for the purpose of the study. The themes selected for the design of the questionnaire were influenced by previously conducted studies (Hajj et al., 2011; Worley et al., 2007; Cavaco et al., 2005; Al Arifi, 2012; Gidman et al., 2012; Wirth et al., 2011; Bawazir, 2010). Questionnaire had two subscales designed to assess the perception (Section 1; 13 questions) and satisfaction (Section 2; 10 questions) of general public on the roles and responsibilities, and services provided by the pharmacists. Response to the questions was based on a 5 point Likert type scale with responses ranging from strongly agree to strongly disagree. The questionnaire had a component to obtain information on the demographics of participants and details on number of visits to the pharmacy in the last two years. The questionnaire designed in English was first translated into Arabic. It was further retranslated into English to ensure appropriate translation. The questionnaire was solely prepared by one of the researchers of the group, and the content validity was assessed by another member (academic faculty in department of pharmacy practice) who is a content expert in the theme assessed in the study.

A pilot study was conducted among 25 participants to ensure appropriateness and understandability of the questionnaire among the prospective participants. Internal reliability for individual subscales of the questionnaire was assessed using Cronbach’s value coefficient. To improve the internal consistency, 3 questions were omitted (2 from Section 1 on perception and 1 from Section 2 on satisfaction). Accordingly, the final questionnaire had 20 items: perception (11 questions) and satisfaction (9 questions). Cronbach’s value for internal reliability obtained for individual subscales in the questionnaire was 0.770 and 0.758 for perception and satisfaction, respectively. A sample size of 384 was estimated with confidence level of 95% and interval of 5 for an estimated Omani

population size of 2.01 million in the year 2012 (National Centre for Statistics and Information, 2012).

The actual survey was conducted during two time periods: March–April 2013 and November–December 2013 in Al Dahera and Muscat governorates, two representative governorates among the ten governorates in Oman. The general public in these regions were approached by a researcher for participant enrollment using quota sampling for age and gender followed by convenience sampling. General public was approached at police station, schools, government offices and houses. Inclusion criteria for the study were public between the age of 18–60 years, who were neither healthcare professionals nor students from any medical/health related field. The study information sheet was given to the potential participants followed by a verbal explanation. Participants signed the consent form indicating that they understood the study objectives and are willing to participate in the study. On an average, the participants required 15–20 min to complete the self-administered questionnaire.

The data from the filled questionnaires were evaluated for various parameters. The responses of perception and satisfaction related questions were assessed by estimating the percentages of participants answering the individual responses of strongly agree to strongly disagree. Further, the responses to individual questions were assessed using a scoring scheme with score of 5, 4, 3, 2, 1 for most appropriate to inappropriate responses. Accordingly, the median perception and satisfaction score for the participants was estimated with a maximum score of 55 and 45 respectively. Additionally, the median total score based on responses to both perception and satisfaction related questions was estimated with a maximum possible score of 100. A score greater than 80% of the possible maximum score was considered as good, between 60 and 80 as moderate and less than 60% as poor for quantitative representation. The median total score of the participants was related to the demographics of the participants to evaluate any difference in the score depending on gender, age group, educational and employment status. Further, the same was evaluated for any difference based on frequency of visit to a pharmacy by the participant as well as the governorate represented.

2.1. Statistical analysis

The results were statistically analyzed using SPSS (version 15) where Mann–Whitney U test and Kruskal–Wallis test were used for continuous variables for non-parametric data depending on number of comparative groups. The p value of <0.05 was considered to be statistically significant.

3. Results

A total of 390 filled questionnaires were obtained from the distributed 550 questionnaires, giving a response rate of 70.9%. Characteristics of the participants are represented in Table 1. There was an almost equal representation of participants based on gender. Comparatively, there was a higher percentage of participants in the age group of 18–30 and only few in the 46–60 age group. Majority of the participants were well educated having a higher educational qualification (63.3%) and 68.2% were employed. Approximately, 35% of participants report to have visited the community pharmacy more

than 10 times in the last 2 years. Responses to questions assessing the perception and satisfaction of participants on the roles and responsibilities of pharmacists are summarized in Table 2 and 3. For the purpose of explanation of responses to individual questions, responses of strongly agree and agree are combined and discussed as 'agree'. Similarly, responses of strongly disagree and disagree are combined and discussed as 'disagree'.

3.1. Perception

The median perception score based on all questions related to perception was 44 (IQR 5) out of a possible maximum score of 55 which represents a good score. Even though vast majority of the participants considered pharmacists as an expert in matters related to drugs, nearly 47% of them considered them to be mere vendors/dispensers of drugs; Table 2. Majority (62%) of the participants indicated that the pharmacists could provide extended services such as health screening services; blood pressure monitoring, blood sugar monitoring.

3.2. Satisfaction

The median satisfaction score based on all questions related to satisfaction was 34 (IQR 7) out of a possible maximum score of 45 which represents a moderate score. A good number of participants were concerned about the privacy at the pharmacy counter as well as the time spent by the pharmacists for each patient; Table 3. But, 63.6% of participants stated that they were satisfied with the relationship that pharmacists maintain with them.

3.3. Relating the median score with the participant characteristics

Table 1 represents the relationship between median score and characteristics of the participants.

The median total score based on the responses to all the questions was 79 (IQR, 12) out of a possible maximum score of 100, which demonstrates a moderate score. Difference in the median total score based on demographics of the participants (gender, age group, educational qualification and employment status) did not show any significant difference; Table 1. But, the median total score did differ significantly ($p = 0.004$) based on the frequency of visit to pharmacy. Median perception score did not differ significantly based on gender, age group and education qualification, while it did differ based on the employment status ($p = 0.025$) and frequency of visits to pharmacy ($p = 0.005$). A significant difference in satisfaction score was observed based on educational qualification ($p = 0.013$) and frequency of visit to pharmacy ($p = 0.03$); Table 1. Similarly, median total score of the participants based on individual governorates did differ significantly ($p = 0.017$) with those in Al Dahera Governorate having a higher score compared to Muscat governorate; Table 4.

4. Discussion

Provision of pharmaceutical care should occur in a framework that assumes a patient–pharmacist professional relationship based upon caring, trust, communication, cooperation, and

Table 1 Demographics of participants and relationship with median perception, satisfaction and total score.

Parameter	No. (%)	Median perception (IQR)	<i>p</i> value	Median satisfaction score	<i>p</i> value	Median total score	<i>p</i> value
<i>Gender</i>							
Male	193 (49.5)	45 (5)	0.752	34 (7)	0.127	78 (12)	0.451
Female	197 (50.5)	44 (5)		35 (7)		79 (9)	
<i>Age group</i>							
18–30	193 (49.5)	45 (5)	0.69	34 (7)	0.064	79 (10)	0.143
31–45	182 (46.7)	44 (6)		34.5 (7)		79 (12)	
46–60	15 (3.8)	45 (5)		31 (15)		76 (17)	
<i>Educational qualification</i>							
No education	6 (1.5)	44 (3)	0.774	33 (8)	0.013	79.5 (9.75)	0.068
Primary school	1 (0.2)	–		–		–	
Preparatory	8 (2.0)	46 (7)		36 (12.75)		80 (18.75)	
Secondary	128 (32.8)	45 (5)		35 (8)		80 (10.5)	
Higher education	247 (63.3)	44 (6)		34 (7)		78 (12)	
<i>Employment</i>							
Employee	266 (68.2)	44 (6)	0.025	34 (7)	0.069	78 (12)	0.083
Selfemployed	12 (3.1)	47.5 (4.75)		36.5 (7)		83 (9.75)	
Not working	51(13)	43 (5)		35 (8)		78 (10)	
Student	61(15.6)	45 (5)		34 (5.5)		79 (10.5)	
<i>Number of visits to pharmacy in the last year</i>							
1	19 (4.9)	46 (6)	0.005	38 (5)	0.03	84 (10)	0.004
2-3	66 (16.9)	43 (6.25)		33 (5.25)		76 (10.25)	
4-5	83 (21.3)	45 (6)		34 (6)		80 (11)	
6-10	87 (22.3)	44 (5)		34 (7)		78 (9)	
> 10	135 (34.6)	45 (6)		35 (9)		79 (11)	

mutual decision making in which the pharmacist works very closely with the patient to ensure that drug therapy is safe and effective (American Pharmacists Association, 2012). Determining consumer's perception of pharmacist provided services offers a perspective through which standards of care can be determined, enabling the pharmacist's role to be judged for overall quality and satisfaction (Tang and Sporrang, 2008; Hajj et al., 2011). The present study was conducted among public in two representative governorates in Oman to assess the perception and satisfaction regarding the roles and responsibilities of the pharmacists in Oman.

A total of 390 members participated in the survey. It was observed that participants had a good level of perception regarding the roles and responsibilities of the pharmacist. Meanwhile, their level of satisfaction on the services provided by pharmacists was only moderate. Vast majority of participants considered pharmacists as an expert in matters related to drugs. This result is similar to the findings of the study conducted by Eades et al. which showed that the customers perceived community pharmacists as drug experts (Eades et al., 2011). A large number of the participants did not consider pharmacist as an expert in the treatment of minor ailments contradicting to the fact that responding to symptoms and treatment of minor ailments is one of the primary responsibilities of pharmacist. This could have been influenced by the fact that the questionnaire was directed in general about pharmacists; respondents might have reflected their view about hospital pharmacists who do not generally involve in the treatment of minor ailments. Results of a study conducted in Malta indicated that the Maltase consumers would seek advice from a community pharmacist for a number of minor ailments and when their condition was not serious enough to visit a physician (Wirth et al., 2011).

Near to half of the participants in this study indicated that they consider the pharmacist as a mere vendor/dispenser. Similarly in the study done in Saudi Arabia by Bawazir, about 56% of participants considered that the pharmacists are more concerned with business (Bawazir, 2010). However, most of the participants considered pharmacists as an integral part of health care system which is an encouraging finding. Similar results were found in the study by Al-Arifi in Saudi Arabia and Perepelkin J in Canada (Al Arifi, 2012; Perepelkin, 2011). This demonstrates that pharmacists in Oman like in many other countries enjoy recognition as a vital member of the health care team.

Majority of participants opined that pharmacists should provide extended services such as health screening; BP monitoring, and blood glucose monitoring. Peterson G in his study of public perceptions on the role of Australian pharmacists in cardiovascular diseases reported a similar finding (Peterson et al., 2010). Our study results demonstrate that the time has arrived for the pharmacists in Oman to consider positively to include these allied health care services with the changing potentials of practice and expectations of consumers.

A high number of participants (93.9%) agreed that a pharmacist should check the prescription for accuracy in terms of drug name, dose, any problem in taking the medication together, etc before dispensing the medication. In the UK or Sweden, pharmacists are perceived as having the ability to check doctors' prescriptions (Tang and Sporrang, 2008). It is quite evident that consumers are very clear about the primary responsibilities of pharmacists and they expect pharmacists to deliver the same in the optimal way. Almost all of them expected that the pharmacist should let them know how to use medication and warn of any side effects and how to prevent it, quite similar to the response of participants in the

Table 2 Response to perception related questions.

Questions	Strongly agree No.(%)	Agree No. (%)	Not sure No. (%)	Disagree No. (%)	Strongly disagree No. (%)
I consider the pharmacists as an expert in matters related to drugs ¹	143 (36.7)	185 (47.4)	51 (13.1)	11 (2.8)	0
The pharmacist is an expert in suggesting treatment for minor ailments	25 (6.4)	140 (35.9)	136 (34.9)	79 (20.3)	10 (2.6)
Pharmacists as a mere vendor/dispenser of drugs	40 (10.3)	144(36.9)	61(15.6)	118 (30.3)	27(6.9)
Pharmacists as an integral part of the health care system like physicians and nurses	150 (38.5)	190 (48.7)	28 (7.2)	19 (4.9)	3 (0.8)
Pharmacists could provide extended services like health screening services; BP monitoring, Blood sugar monitoring mainly in the community pharmacies	103 (26.4)	139 (35.6)	86 (22.1)	48 (12.3)	14 (3.6)
I would seek advice from the pharmacist (community pharmacist) if the condition is not serious enough to visit a physician	101 (25.9)	191 (49.0)	52 (13.3)	42 (10.8)	4 (1.0)
Pharmacist should check my prescriptions for accuracy in terms of drug name, dose, any problem in taking the medications together, etc before dispensing the medication	297 (76.2)	69 (17.7)	17 (4.4)	4 (1.0)	3 (0.8)
Pharmacist should let me know how to use my medication and warn me of any possible side effects and how to prevent it	285 (73.1)	90 (23.1)	12 (3.1)	1 (0.3)	2 (0.5)
Pharmacist should answer my drug related questions	256 (65.6)	109 (27.9)	20 (5.1)	5 (1.3)	()
I trust the pharmacist for the information on the use of medicines	109 (27.9)	172 (44.1)	75 (19.2)	27 (6.9)	7 (1.8)
Pharmacists should advice patients on general health issues other than about drugs	182 (46.7)	137 (35.1)	52 (13.3)	17(4.4)	2 (0.5)

Table 3 Response to satisfaction related questions.

Questions	Strongly agree No. (%)	Agree No. (%)	Not sure No. (%)	Disagree No. (%)	Strongly disagree No. (%)
I am satisfied with the type and amount of information discussed by the pharmacist on drug related matters	58 (14.9)	212 (54.4)	64 (16.4)	47 (12.1)	9 (2.3)
I am satisfied with the questions asked by my pharmacist before dispensing medications like any history of previous drug allergy, disease details, etc.	108 (27.7)	172 (44.1)	57 (14.6)	44 (11.3)	9 (2.3)
I am satisfied with the privacy maintained by pharmacist while discussing with patients and dispensing medications	112 (28.7)	147 (37.7)	75 (19.2)	46 (11.8)	10 (2.6)
I am satisfied with the level of knowledge that pharmacists demonstrate in drug related issues	61 (15.6)	163 (41.8)	125 (32.1)	35 (9)	6 (1.5)
I am satisfied with the kind of response pharmacist provide on questions related to drugs	59 (15.1)	224 (57.4)	66 (16.9)	34 (8.7)	7 (1.8)
I am satisfied with the language used by the pharmacist in discussing drug related matters	66 (16.9)	201 (51.5)	79 (20.3)	29 (7.4)	15 (3.8)
I am satisfied by the amount of time spend by my pharmacist with each patient	62 (15.9)	191 (49)	78 (20)	46 (11.8)	13 (3.3)
I am satisfied with the relationship that the pharmacist tries to maintain with the patients	79 (20.3)	169 (43.3)	92(23.6)	43 (11.0)	7 (1.8)
I am satisfied with the kind of information the pharmacist provides on disease and other health issues along with information on drugs	71 (18.2)	169 (43.3)	99 (25.4)	4 (10.5)	10 (2.6)

Table 4 Median score of the participants based on individual governorates.

Parameter	A'Dahera governorate	Muscat governorate	<i>p</i> value
Number of participants (%)	284 (72.8)	106 (27.8)	
Median total score (IQR)	79.5 (11)	77 (12)	0.017
Median perception score (IQR)	44 (6)	44 (5)	0.029
Median satisfaction score (IQR)	35 (5.5)	33 (7.25)	0.061

Saudi study (Al Arifi, 2012). Promotion of drug safety by appropriate information sharing is considered as a prime responsibility of pharmacists and consumers acknowledge the same.

In this age of information explosion and sharing, it is not surprising to note that vast majority of the participants opined that it would be ideal that pharmacists provide advice on general health issues in addition to drugs. In the study by Sharma et al. and Eades et al. as well customers found the pharmacy a convenient setting to provide public health services (Sharma et al., 2009; Eades et al., 2011). This demonstrates the changing health information seeking behavior of patients as they might find physicians or nurses 'too occupied' to discuss about general health issues. Similar concerns regarding privacy as reported in present study were reported in other studies and they considered having a private consultation area in the pharmacy as an integral component (Hajj et al., 2011; Eades et al., 2011; Wirth et al., 2011).

Majority of participants (72.1%) indicated satisfaction with the kind of response pharmacists provide on questions related to drugs. Nevertheless, only marginally above half of the participants indicated that they were satisfied with the level of knowledge that pharmacist demonstrated related to drugs, while a good number (32.1%) were not sure about it. Ambiguity in the participant's outlook on pharmacist's knowledge level could be probably because many did not have an opportunity to have a professional interaction at a higher level to draw conclusions on the same. Indeed, the situation is better than what is reported in Qatar where only 37% of the public agreed that Qatar's pharmacists were knowledgeable enough and were always ready to answer questions (Hajj et al., 2011). There were participants who were not satisfied with the language used by the pharmacist in discussing drug related matters. This could be influenced by the fact that a good number of pharmacists working in Oman health sector, especially in the community pharmacy setting are expatriates and majority from non-Arabic speaking countries. This could definitely influence their fluency while interacting with patients and affect the patient's level of satisfaction. In the study conducted in Qatar, communication in the native language was an important quality expected by 72% of participants (Hajj et al., 2011). It is reported that lack of time, high pharmacist workloads and restricted funding result in limited patient interaction impeding the formation of interpersonal trust (Gidman et al., 2012). The amount of time spent by pharmacists during interactions was of concern for a good number of participants in our study similar to other (Wirth et al., 2011).

4.1. Limitations

There were some limitations for our study. Participants above the age of 60 were excluded as the questionnaire was designed

to be self-administered in nature and we expected more of illiterate public in this age group. Even though, we considered age as a parameter for quota sampling, unfortunately there was minimal representation from the age group 46–60. As educational qualification was not a factor considered for quota sampling, there was an unexpectedly higher percentage of participants with higher education qualification compared to other groups. This might have had an influence on the findings. Recall bias might have influenced the response to the question on 'frequency of visit to a pharmacy' as could be logically expected. We had representation only from two governorates in Oman. A nationwide study with representation from individual governorates could improve the generalizability.

Further, perception and satisfaction of public with regard to pharmacists in general was assessed without segregation as community pharmacists and hospital pharmacists. Hence an explicit understanding of the study parameters in relationship with the two main segments of pharmacists could not be achieved.

5. Conclusion

In conclusion, this study provided a broad representation regarding the Omani public's perception on the role and satisfaction on the services provided by the pharmacists. Public had a good perception regarding the roles and responsibilities of the pharmacists while they were only moderately satisfied with the services provided. Frequency of visits to pharmacy, educational qualification, employment status as well as representation from different governorates had an influence on the parameters evaluated. It should be considered that unless those areas where patients have an incorrect perception are addressed, especially with regard to the basic responsibilities and professional capabilities, an improvement in the professional relationship between pharmacists and public could not be expected. Steps have to be taken to improve the services provided, relationship maintained and thereby improve the satisfaction of customers. A larger study in a wider population involving more governorates will be helpful in providing a better picture regarding this important aspect.

Authors contributions

Jimmy Jose (JJ) was involved in conceiving the idea, study design, analysis and interpretation of data, and drafting of the manuscript. Marwa Nasser Al Shukili (MS) was involved in the study design, data collection, analysis and interpretation of data, and drafting of manuscript. Beena Jimmy (BJ) was involved in conceiving the idea, study design, analysis and interpretation of data, and drafting of manuscript. All authors read and approved the final manuscript.

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