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Practices and Perception of Community Pharmacists Towards Antimicrobial Stewardship in Iraq

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Abstract

The development of antimicrobial resistance (AMR) is related mostly to their use, overuse, or misuse. Antimicrobial stewardship (AMS) refers to the interventions designed to measure and improve the appropriate use of antimicrobials. Community pharmacists are key health-care professionals for any AMS programs. This study aimed to evaluate the practices and perception of Iraqi community pharmacists regarding AMS. The present study was a cross-sectional online survey study that was conducted anonymously during two months' period (July-to-August 2021) on community pharmacists using a convenience sampling technique. The study recruited 210 pharmacists with average age of (29.55 ±6.45 years) and more than half (50.95%) were men. Regarding practices of community pharmacists towards AMS, the results of the present study revealed positive practices of community pharmacists towards AMS (the median score was 42 which above the average). However; about (39.0%) of community pharmacists agreed that they dispense antibiotics without prescription. The majority of pharmacists (80%) agreed that they recommend medicines other than antimicrobials for minor conditions. In addition, about (77%) disagreed that they dispense antibiotics for a longer duration than prescribed by the physicians. Regarding the perception of community pharmacists towards AMS, the results of the present study revealed neutral perception (the median score was 30 which equal to the average). The majority of community pharmacists (about 87%) agreed that most of population self-medicate with antibiotics. Finally, results of the current study show that none of the sociodemographic characteristic of the participants had a significant effect on practices and perception of community pharmacists towards AMS. In conclusion, community pharmacists in Iraq, have neutral perception regarding AMS and they are practicing it well. But there are some gaps in their practices that must be addressed, such dispensing antibiotics without a prescription and dispensing antibiotics for a longer duration than prescribed.
Keywords: Antimicrobial Stewardship, Practices, Perception, Community pharmacists, Antimicrobial resistance.

Introduction

The availability of effective antibiotics (ABs) is one of the most important developments in modern medicine [(1)]. Antibiotics are different from other drugs from three aspects, first; Abs are the only medications that become less effective over time even if used properly, second; ABs are regularly prescribed by many specialties to deliver usual and advanced medical care, third; even people who are not exposed to ABs can suffer when the others use ABs incorrectly (e.g.; patient taking ABs develops an altered gut microbiota, leading to the released of *C difficile* spores into the environment with possible transmission to another person). After the exposure to a medication, the potential for side effects exists; this is applied for ABs whether or not their use is appropriate [(2)]. Some of the serious negative consequences are: development of antimicrobial resistance (AMR) [(1)], large number of emergency departments visits to due to adverse reactions to ABs [(2)], and increase of *C. difficile* infections [(3)] which may cause life-threatening fulminant colitis [(4)]. In general, treatment of patients with proven or suspected bacterial infection includes initiation of empiric therapy (i.e., before the availability of definitive microbiology data), followed by adjusted therapy when the microbiological data become available [(5)].

The term 'Antimicrobial stewardship' (AMS) was appearing first in the late-1990s. It refers to "a set of coordinated efforts for appropriate antibiotic (AB) selection, the correct dosing of selected ABs, and de-escalation to a more straightforward and oral regimen when clinically applicable with the shortest yet effective length of

treatment" [3]. The main goals of AMS are improve patient outcomes, optimize patient safety [6], reduce resistance [7], and control healthcare costs [8]. The AMS team includes an infectious disease physician, an infectious disease pharmacist, a nurse, a clinical microbiologist, infection preventionists, and information technology staff [1]. The pharmacist's responsibilities involve patient-level optimization of ABs therapy, recommending drug switching, therapeutic drug monitoring, and patient counseling. They also plan and implement AMS programs to promote appropriate ABs use at the system level [9].

Different studies were conducted to assess community pharmacists (CPs) perception and practices regarding AMS. According to a systematic review about CPs' perception and practices regarding AMS, ten studies were identified that evaluate CPs perceptions and practices towards AMS. Most CPs perceived that AMS improved patient care, and reduced inappropriate ABs use [10]. Studies among Iraqi population have reported prevalence of improper use of ABs. Concerning ABs dispensing in community pharmacies, Mikhael study revealed that 45% of Iraqi CPs dispensed ABs without prescription for common colds [11]. Ahmed *et al*, found that 62.7% of Iraqi pharmacy students administered ABs as self- medication, although they were aware of AMR [12]. A study was conducted in Al-Samawa city to assess the prevalence of ABs self-medication for respiratory tract infections showed that 76% of participants were using ABs without prescription [13]. Jasim *et al*, also reported that ABs represented the commonest type of drugs requested without prescription (74.7%) in Baghdad city [14]. To our knowledge, there is no study conducted in Iraq that has assessed perception and practices regarding AMS among CPs. Accordingly, the aim of this study was to assess Iraqi community pharmacists' practices and perception about AMS in community pharmacy settings.

Study design and subjects

The present study was a cross-sectional online survey study that was conducted anonymously during two months' period (July-to-August 2021) on CPs using a convenience sampling technique. Eligible participants who invited to participate in the current study were pharmacists who were working at the community pharmacies in different Iraqi governorates either in full or part time as was stated in the instruction of the questionnaire form that the participant should be a community pharmacist. The participation was anonymous and voluntary.

Study instrument

The questionnaire of the current study was adopted from a previous study [15] with slight modifications that were made according to the local practice. Face validation process was conducted by four independent academic pharmacists who have a good experience in pharmacy practice research. Their comments about the suitability of each question for the purpose of the study and its compatibility with the Iraqi pharmacy practice were taken into consideration, in addition to reviewing the linguistic formulation of each question.

The questionnaire was distributed (in the google form) via closed professional social media platforms (Facebook and WhatsApp groups for pharmacists) (from July-to-August 2021). The first section was about the demographic characteristics of participants, the second section had 11 questions about the practices of CPs towards AMS and the third sections had 10 questions about the perception of CPs of AMS. A 5-point Likert scale was used for statements exploring the perception and practices of CPs "one point was used for strongly disagree, 2 points for disagree, 3 points for neutral, 4 points for agree and 5 points for strongly agree". For negatively worded statements, reverse coding was done (questions 2, and 8 in section of practices) (questions 2, 3, 4, and 9 in section of perception).

The practice and perception were considered positive, neutral, or negative if their scores were above, equal, or less than the theoretical average of the score (calculated if the answers to all questions were neutral, so the average score was 33 for practice and 30 for perception) respectively.

Statistical analysis

The analyses were conducted using the Statistical Package for the Social Science (SPSS, version 26, IBM, New York, USA). Descriptive statistics (means, standard deviations, frequencies and percentages) of the participants were calculated. The Shapiro-Wilk test was used to assess the distribution normality of the continuous data. Since the practice and perception scores were not normally distributed, they were described as median and interquartile range (IQR). Mann-Whitney U test was used to estimate the association between age, gender and experience with score of (Practice and Perception). Kruskal-Wallis test was used to estimate the association between level of education and score of (Practice and Perception). A p-value of less than 0.05 was considered to be statistically significant.

Results

The demographics and professional characteristics of the participating pharmacists

The study recruited 210 pharmacists with average age of (29.55 ±6.45 years) and more than half (50.95%) were men. The average years of pharmacist experience were (5.45±5.15 years). Approximately, three-quarters (79.05%) of participants had bachelor's degree in pharmacy (BSc). Most of them lived in Baghdad (61.9%) as shown in (Table 1).

Table 1. Demographic and professional characteristics of participating pharmacists

Item	Subcategory	Frequency (N)	%
Gender	**Female**	103	49.05
	Male	107	50.95
Degree	**Bachelor**	166	79.05
	Diploma	16	7.62
	Master	21	10.00
	Ph.D.	7	3.33
Province	**Baghdad**	130	61.9
	Others	80	38.1
	Mean	**Std. Deviation**	
Age (years)	29.55	6.45	
Experience (years)	5.45	5.15	

Practices of community pharmacists towards antimicrobial stewardship

Most of the CPs either agreed or strongly agreed with nine of the eleven questions covering the practices of CPs towards AMS (questions 1, 3, 4, 5, 6, 7, 9, 10 and 11). While most of participants where either neutral (for question 2) or either disagreed or strongly disagreed (for question 8). The median practice score was 42 (IQR 6) as shown in (Table 2).

In addition, results of the current study showed that none of the sociodemographic characteristic of the CPs had a significant effect on their practices towards AMS ($p > 0.05$) (Table 3).

Table 2. Practices of community pharmacists towards antimicrobial stewardship

	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	"Do you show a positive response if someone asks a question about antibiotic use?"	80 (38.10%)	71 (33.81%)	42 (20.00%)	14 (6.67%)	3 (1.43%)
2	"Do you dispense antimicrobials without prescription? "	18 (8.57%)	64 (30.48%)	99 (47.14%)	20 (9.52%)	9 (4.29%)
3	"Do you dispense antimicrobials on prescription with complete clinical information? "	72 (34.29%)	96 (45.71%)	28 (13.33%)	11 (5.24%)	3 (1.43%)
4	"Do you recommend therapies other than antimicrobials for minor ailments? "	96 (45.71%)	72 (34.29%)	30 (14.29%	10 (4.76%)	2 (0.95%)
5	"Do you educate patients on use of antimicrobials and resistance-related issues? "	99 (47.14%)	78 (37.14%	24 (11.43%)	6 (2.86%)	3 (1.43%)
6	"Before dispensing, do you screen the antimicrobial prescription with local guidelines? "	21 (10.00%)	63 (30.00%)	79 (37.62%)	43 (20.48%)	4 (1.90)
7	"Do you communicate with prescribers if you are unsure about the appropriateness of an antibiotic prescription? "	38 (18.10%)	71 (33.81%)	56 (26.67%)	37 (17.62%)	8 (3.81%)
8	"Do you dispense antimicrobials for duration more than prescribed by a physician on patient's request? "	1 (0.48%)	19 (9.05%)	29 (13.81%)	90 (42.86%)	71 (33.81%)
9	"Do you know how to handle a patient who demands antimicrobial therapy that is not indicated? "	34 (16.19%)	90 (42.86%)	71 (33.81%)	11 5.24%	4 (1.90%)
10	"While dispensing antibiotics, do you ask for the age, possible allergies and purpose of medicines from the patient? "	155 (73.81%)	42 (20.00%)	8 (3.81%)	3 (1.43%)	2 (0.95%)
11	"Do you participate in communication with prescriber for antimicrobial? "	34 (16.19%)	81 (38.57%)	59 (28.10%)	28 (13.33%)	8 (3.81%)
	Total practice score	**Minimum**	**Maximum**		**Median**	**IQR**
		17	53		42	6

IQR: interquartile range

Table 3. Association between demographics characteristics and practices of community pharmacists towards antimicrobial stewardship

Variables		N (%)	Practice score	Test	P value
			Median (min – max)		
Age	**≤ 30 years**	149 (70.95)	42 (28 – 53)	U	0.662
	>30 years	61 (29.05)	41 (17 – 52)		
Gender	**Male**	107(50.48)	41 (17 – 53)	U	0.314
	Female	103(49.52)	42 (28 – 52)		
Degree of education	**Bachelor**	166 (79.05)	42 (28 – 53)	K	0.812
	Diploma	16 (7.62)	42 (37 – 49)		
	Master	21 (10.0)	40 (17 – 52)		
	Ph.D.	7 (3.33)	44 (39 – 49)		
Years of experience	**≤ 5 years**	145 (69.05)	42 (17 – 53)	U	0.419
	> 5 years	65 (30.95)	42 (32 – 52)		

K: Kruskal-Wallis test; U**:** Mann-Whitney U test.

Perception of pharmacists towards antimicrobial stewardship

Most of the CPs either agreed or strongly agreed with eight of the ten questions covering the perception of CPs towards AMS (questions 1, 2, 4, 5, 6, 7, 9, and 10). While most of participants where either neutral (for question 8) or either disagreed or strongly disagreed (for question 3). The median perception score was 30 (IQR 3) as shown in (Table 4).

In addition, results of the current study show that none of the sociodemographic characteristic of the CPs had a significant effect on their perception towards AMS ($p > 0.05$) (Table 5).

Table 4. Perception of pharmacists towards antimicrobial stewardship

	Questions	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	"Do you keep in mind the side effects while dispensing antibiotics? "	75 (35.71%)	89 (42.38%)	39 (18.57%)	5 (2.38%)	2 (0.95%)
2	"Do you think the use of antimicrobials is more common in aged persons than younger?"	32 (15.24%)	59 (28.10%)	69 (32.86%)	44 (20.95%)	6 (2.86%)
3	"Do you think guidance about antimicrobial agents is the responsibility of a pharmacist only?"	15 (7.14%)	52 (24.76%)	44 (20.95%)	71 (33.81%)	28 (13.33%)
4	"Do experienced pharmacists show more response towards antibiotic stewardship? "	30 (14.29%)	75 (35.71%)	82 (39.05%)	16 (7.62%)	7 (3.33%)
5	"Do you think antimicrobial stewardship should be introduced at community pharmacy level? "	52 (24.76%)	99 (47.14%)	50 (23.81%)	9 (4.29%)	0.0 (0.00%)
6	"Do you feel proud while giving information about the use of antibiotics? "	96 (45.71%)	88 (41.90%)	23 (10.95%)	2 (0.95%)	1 (0.48%)
7	"Does guidance about antibiotic use decreases the percentage of resistance in patients? "	84 (40.00%)	90 (42.86%)	24 (11.43%)	9 (4.29%)	3 (1.43%)
8	"Is sufficient education on antimicrobial stewardship given to community pharmacists? "	22 (10.48%)	50 (23.81%)	82 (39.05%)	40 (19.05%)	16 (7.62%)
9	"Do you think that most of people use antimicrobials as self-medication (in case of minor infections)? "	92 (43.81%)	90 (42.86%)	17 (8.10%)	8 (3.81%)	3 (1.43%)

10	"Are relevant conferences, workshops and other education activity required to enhance the understanding of antimicrobial stewardship? "	76 (36.19%)	85 (40.48%)	39 (18.57%)	4 (1.90%)	6 (2.86%)
	Total perception score	**Minimum**	**Maximum**		**Median**	**IQR**
		23	36		30	3

IQR: interquartile range

Table 5. Association between demographics characteristics and perception of community pharmacists towards antimicrobial stewardship

Variables		N (%)	Perception score	Test	P value
			Median (min – max)		
Age	**≤ 30 years**	149 (70.95)	29 (23 – 36)	U	0.129
	>30 years	61 (29.05)	30 (24 – 36)		
Gender	**Male**	107 (50.48)	29 (24 – 36)	U	0.352
	Female	103 (49.52)	30 (23 – 35)		
Degree of education	**Bachelor**	166 (79.05)	30 (23 – 36)	K	0.980
	Diploma	16 (7.62)	29.50 (25-33)		
	Master	21 (10.0)	30 (24 – 34)		
	Ph.D.	7 (3.33)	30 (24 – 33)		
Years of experience	**≤ 5 years**	145 (69.05)	30 (23 – 36)	U	0.195
	> 5 years	65 (30.95)	30 (24 – 36)		

K: Kruskal-Wallis test; U**:** Mann-Whitney U test.

Discussion

The AMR is a pressing issue of community health. Given the majority of ABs being prescribed and dispensed in the community, the use of AMS programs is crucial in this setting to address AMR [(10)]. Accordingly, there is a need to raise pharmacists' knowledge about rational use of ABs. This study evaluated the practices and perception of Iraqi CPs towards AMS.

The results of the present study revealed positive practices of CPs towards AMS [the median score was 42 which above the average (33)]. The findings of this study strengthen the preceding work indicating the positive practices of CPs towards AMS in Ethiopia [(16)], Pakistan [(15)], and Malaysia [(17)]. However; about (39.0%) of CPs agreed that they dispense ABs without prescription. This finding was in line with the findings from studies conducted in Malaysia [(17)], Kingdom of Saudi Arabia [(18)] and China [(19)] where the majority of pharmacists dispense ABs without prescription. Financial incentives and business orientations were found to be the major reasons of irrational dispensing of ABs in community pharmacies [(20, 21)]. In addition, more than (80%) agreed that they dispense ABs on prescription with full clinical information. Results from the Malaysian study showed that more than half (51%) of CPs either often or always dispense ABs on prescription with full clinical information [(17)]. The CPs are important AB stewards and play an essential role in providing counseling to patients and health-care providers on the rational use of ABs [(22)].

The majority of pharmacists (80%) agreed that they do recommend medicines other than ABs for minor ailments. Before going to hospitals or clinics, many people would rather consult the pharmacist about medications for minor issues. Pharmacists are qualified to provide treatments for mild illnesses because of their clinical backgrounds [(23)]. About (84%) of pharmacists agreed that they educate patients on use of ABs and resistance-related issues. Results from the Malaysian study showed that about (71%) of CPs either often or always educate patients on use of ABs and resistance-related issues [(17)]. As gateway practitioners, CPs may educate patients on viral nature of infections, the futility of ABs for them, and recommend an appropriate over the counter products for supportive care [(24)].

In addition, (40%) of pharmacists agreed that they screen AB prescriptions according to the local guidelines and about (94%) take patient history regarding previous allergies in order to decrease the chances of adverse drug reactions. Also, about (52%) communicate with physicians if they are unsure about the appropriateness of AB prescriptions. The study done in Pakistan [(15)] reported similar findings. Researchers suggest that effective pharmacist-physician communication is an

essential feature of AMS [25]. In addition, about (77%) disagreed that they dispense ABs for a duration longer than what is prescribed by the physicians. In contrast, more than half (59.4%), of CPs in Ethiopia often/always dispense ABs for a duration longer than what is prescribed by the physicians [16]. Previous studies have shown that extending the duration of AB therapy facilitated the emergence encourages of an AB resistant organism [26, 27]. On the other hand, about (59%) of the CPs stated that they know how to deals with a patient who demands AB therapy that is not indicated which is lower that reported in a study done in Pakistan (about 82%) [15]. Additionally, results of the current study showed that none of the sociodemographic characteristic of the participants had a significant effect on the practices of CPs towards AMS. In contrast; in a Malaysian study, participants' qualification significantly affected their practice score where pharmacists having postgraduate qualification had significantly more practice score compared to those with Bachelors [17].

Regarding perception, the results of the present study revealed neutral perception of CPs towards AMS [the median score was 30 which equal to the average (30)]. However; study in Pakistan revealed positive perceptions of CPs towards AMS [14]. More than three quarter of respondents (about 78%) agreed that they keep in their mind side effects when dispensing ABs. While many ABs are seldom used in the community setting because of their adverse effects (e.g., aminoglycosides), adverse effects are also associated with ABs that are used commonly in community setting [28]. About (43%) of respondents agreed that the use of ABs is more common among older persons. Inappropriate AB therapy in the elderly poses significant risks, including drug interactions, side effects due to age or disease changes, and multidrug-resistant organisms and *C. difficile* [29].

Furthermore, approximately (47%) of the participants disagreed with the statement that guidance regarding ABs is the sole responsibility of pharmacists. A multidisciplinary team makes AMS attainable [8]. On the other hand, half of the CPs agreed that experienced pharmacists responded more towards AMS. All the pharmacists, regardless of experience, should be familiar with AMS. Furthermore, about (72%) of respondents agreed that AMS should be introduced at community pharmacy level. In contrast, only 26.5% of Ethiopian CPs agreed that AMS should be practiced at community pharmacy level [16]. Pharmacists can effectively promote rational use of ABs, and AMS adoption at the community level can significantly reduce AMR [30]. In addition, about (83%) of participants agreed that guidance about ABs use will decrease the prevalence of AMR in patients. AMR can be reduced by using ABs carefully based on guidelines of AMS programs [31].

Furthermore, most respondents were neutral (about 39%) regarding adequacy of education on AMS given to CPs and about (77%) agreed that education activities like conferences and workshops are needed to improve the understanding of AMS. Community pharmacists needs to receive proper training on AMS and the rational use of ABs [15]. In this study, the majority of CPs (about 87%) agreed that most of population self-medicate with ABs. Implementing and enforcement strict prescription policies can minimize self-medication of ABs which ultimately reduces AMS [23].

Finally, results of the current study show that none of the sociodemographic characteristic of the participants had a significant effect on the perception of CPs towards AMS. In contrast, result of Malaysian study showed that qualification and experience years had significant effects on perception score (CPs with bachelors had significantly lower perception score than those with Masters, and CPs with less than one year of experience had significantly lower perception score than those with more than 5 years of experience) [17].

Limitations

Some limitations of the current study should be acknowledged. First, the sample size here was relatively small (the study was part of the requirements for higher diploma study, so the student had a specific and limited time). Whether and to what degree they can represent the total CPs in Iraq requires more investigation. For this reason, the generalizability of the current results may be limited. Second, self-reported practices and perception may be subject to recall bias and social desirability bias which depends on honesty of the respondents.

Conclusion

Community pharmacists in Iraq, have a neutral perception about AMS and they are well practicing it (positive practice score). However; some issues in their practices needed to be addressed, such dispensing ABs without a prescription and dispensing ABs for a longer duration than recommended by the prescription. In order to optimize ABs use and decrease AMR, strict standards should be put in place for the dispensing of ABs.

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Conflicts of Interest

The authors did not disclose any conflicts of interest.

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Ethics Statements

The proposal which includes details of the study and method of data collection was administered to the "College of Pharmacy, University of Baghdad" and the approval was obtained from the scientific and ethical committee.

Author Contribution

The authors confirm contribution to the paper as follows: study conception and design: First Author; data collection: second author; analysis and interpretation of results: second author; draft manuscript preparation: first author.

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ممارسات وتصور صيادلة المجتمع تجاه إدارة مضادات الميكروبات في العراق

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[٢] وزارة الصحة، قسم الرقابة الصحية ،دائرة الصحة العامة ،العراق

الخلاصة

يُعزى ظهور مقاومة مضادات الميكروبات إلى حد كبير إلى استخدام مضادات الميكروبات أو الإفراط في استخدامها أو إساءة استخدامها. تشير إدارة مضادات الميكروبات لى التدخلات المصممة لقياس وتحسين الاستخدام المناسب لمضادات الميكروبات . يعد صيادلة المجتمع متخصصين رئيسيين في الرعاية الصحية لبرامج مضادات الميكروبات. هدفت هذه الدراسة إلى تقييم ممارسات وتصورات صيادلة المجتمع العراقي فيما يتعلق بادارة مضادات الميكروبات. كانت الدراسة الحالية عبارة عن دراسة استقصائية مقطعية عبر الإنترنت تم إجراؤها بشكل مجهول خلال فترة شهرين (من يوليو إلى أغسطس ٢٠٢١) على صيادلة المجتمع باستخدام تقنية أخذ العينات الملائمة. شملت الدراسة ٢١٠ صيادلة بمتوسط عمر (٢٩,٥٥ ± ٦,٤٥ سنة) وأكثر من نصفهم (٥٠,٩٥٪) كانوا من الرجال. فيما يتعلق بممارسات صيادلة المجتمع تجاه إدارة مضادات الميكروبات ، كشفت نتائج الدراسة الحالية عن ممارسات إيجابية لصيادلة المجتمع تجاه إدارة مضادات الميكروبات (كانت النتيجة المتوسطة ٤٢ وهي أعلى من المتوسط). لكن؛ حوالي (٣٩,٠٪) من صيادلة المجتمع اتفقوا على أنهم يصرفون المضادات الحيوية بدون وصفة طبية. وافق غالبية الصيادلة (٨٠٪) على أنهم يوصون بأدوية أخرى غير المضادات الحيوية للأمراض البسيطة. كما ونفى حوالي (٧٧٪) من الصيادلة قيامهم بصرف المضادات الحيوية لمدة أطول من المدة الموصوفة من قبل الأطباء. فيما يتعلق بتصور صيادلة المجتمع تجاه إدارة مضادات الميكروبات، كشفت نتائج الدراسة الحالية عن تصور محايد (كانت النتيجة المتوسطة ٣٠ وهي تساوي المتوسط). في هذه الدراسة، وافق غالبية صيادلة المجتمع (حوالي ٨٧٪) على أن معظم السكان يعالجون أنفسهم ذاتيا بالمضادات الحيوية. أخيرًا، تظهر نتائج الدراسة الحالية أنه لم يكن لأي من الخصائص الاجتماعية والديموغرافية للمشاركين تأثير كبير على ممارسات وتصورات صيادلة المجتمع تجاه إدارة مضادات الميكروبات. في الختام، لدى صيادلة المجتمع في العراق تصور محايد فيما يتعلق بادارة مضادات الميكروبات وهم يمارسونها بشكل جيد. ولكن هناك بعض الثغرات في ممارساتهم التي يجب معالجتها، مثل صرف المضادات الحيوية دون وصفة طبية وصرف المضادات الحيوية لمدة أطول من الموصوفة.

الكلمات المفتاحية: إدارة مضادات الميكروبات، الممارسات، الإدراك، صيادلة المجتمع، مقاومة مضادات الميكروبات