Journal of Population Therapeutics & Clinical Pharmacology

ORIGINAL RESEARCH
DOI: 10.47750/jptcp.2022.863

Knowledge and practice of self-medication

Mais Najah Razak Al Shibly[1]*, Lamyaa Ali Hasan[2], Ashwaq Ridha Abdulsada[2]

[1]Ministry of Health and Environment, Baghdad, Iraq

[2]Al-Mustansiriya PHC Training Centre, Baghdad, Iraq

***Corresponding author:** Dr. Mais Najah Razak Al Shibly, MB, ChB, Health Centre, Al-Sadder Sector, Rusafa, Baghdad; Director, Ministry of Health and Environment, Baghdad, Iraq. Email: drnihadkhalawe@gmail.com

Submitted: 3 October 2021; Accepted: 12 December 2021; Published: 10 January 2022

ABSTRACT

Background: Self-medication (SM) is the usage of medicines to resolve self-identified health issues, and it is quite common in many countries. The current study aimed to assess the knowledge and practices of SM among attendants at an outpatient clinic of a Baghdad teaching hospital at Baghdad Medical City as well as to determine association of SM practice with some socio-demographic factors.

Subjects and Methods: The current cross-sectional study was conducted with about 460 people attending outpatients at Baghdad teaching hospital from January 1, 2019 to June 30, 2019.

Results: The highest proportion of participants, 176 (44%), was found in the age group of 18–30 years, with 290 (72.5%) females representing the study sample. Around two-thirds (266) of participants were married, and a higher proportion of participants, 218 (54.5%), were government employees; in all, 77 (19%) of participants were either unemployed or housewives. A total of 241 (60%) participants of the study sample were graduates and 74 (18.5%) postgraduates. Considering monthly income, 140 (35%) participants were earning below *Iraqi Dinar* 5,00,000. Of all the participants, 12 (43%) of them were concerned about the side effects of taking medicines, and 9 of them (32%) due to require medical experiences, 5 of them (18%) due to the risk of missing a diagnosis, and another 4 of them (14%) and 100 of them (27%) of participants used medicine leaflets, 86 (23%) of them used previous prescription, while 67 (18%) of study participants asking the nurse or health assistant, and reminder 41 (11%) used the mass media as a source of information about medicines. The majority of participants, 331 (89%), depended on private pharmacies and only 37 (10%) of them depended on paramedics. About half of the participants, 167 (45%), mentioned name of the medicine

J Popul Ther Clin Pharmacol Vol 28(2):e62–e70; 10 January 2022.

while requesting, and 115 (31%) participants mentioned symptoms of the disease to pharmacist, and only 90 (24%) purchased the drug container (bottles, boxes, etc.).

Conclusion: SM is a common healthcare practice among the attendants outpatients at Baghdad teaching hospital with different socio-demographic characteristic. SM is more prevalent in young age group and among low-income people, hence there was a significant association between age and SM practice, as elderly people practice less SM because of chronic diseases and their use of multiple medicines. In addition, SM practice has increased due to the availability of medicines and their easy access from pharmacies.

Keywords: *Baghdad teaching hospital; knowledge; outpatients; practices;self-medication*

INTRODUCTION

Self-medication (SM) is the use of medicinal products by consumer to treat self-recognized disorders or symptoms, or the intermittent or continued use of medication prescribed by a physician for chronic or recurring diseases or symptoms. In practice, it also includes use of medication by family members, especially if the treatment of children or elderly is involved.[1] World Health Organization (WHO) is promoting the practice of SM for effective and quick relief of symptoms without medical consultations and to reduce burden on healthcare services, which are often understaffed and inaccessible in rural and remote areas.[2]

The world of self-medication industry (WSMI). SM is defined as the treatment of common health problems with medicines especially designed, labeled, and approved for use without medical supervision.[3] SM is associated with certain risks such as drug resistance, drug interactions, adverse drug reactions, increased polypharmacy, incorrect diagnosis, and drug dependence.[4] SM patterns vary among different populations and are influenced by many factors, such as age, gender, income, expenditure, self-care orientation, education level, medical knowledge, satisfaction, and perception of illness. The type and extent of SM and the reasons for its practices may also vary from country to country.[5] Although it is difficult to control SM, interventions could be made to discourage this abnormal practice. Increasing practice of SM requires more and better education of both public and health professionals to avoid unreasonable use of medicines. All parties involved in SM must be aware of benefits and risks of any SM product.[6] Therefore, the aim of current study was to assess the knowledge and practices of SM among attendants of patients at an outpatient clinic of Baghdad teaching hospital at Baghdad Medical City as well as to determine association of SM practice with some socio-demographic factors.

SUBJECT AND METHODS

The current cross-sectional study was conducted among outpatients of Baghdad teaching hospital located at Baghdad Medical City, Al-Rusafa, Baghdad, Iraq, from January 1, 2019 to June 30, 2019. About 460 people attending to outpatients of the hospital participated in the study. All were informed about the purpose of the study and those who met the eligibility criteria, and agreed and consented to participate were enrolled for the study.

Statistical analysis

Each questionnaire given to participants was assigned with a serial identifying number. The collected data were submitted and analyzed by the researcher using Statistical Package for Social Sciences (SPSS, v.25). The data were presented in the form of frequency tables and pie and bar charts. Chi-square test was used to examine association between categorical data. The level of significance was set at $P \leq 0.05$.

J Popul Ther Clin Pharmacol Vol 28(2):e62–e70; 10 January 2022.

RESULTS

During the data collection period of study, 460 people attending outpatients of the Baghdad teaching hospital, Medical City, were enrolled regardless of being a patient, visitor, or relative of patient. All participants meeting the eligibility criteria of the study were informed about the purpose of the study, and 400 of them agreed to participate in the study; the response rate being 87%.

The distribution of participants by general characteristics is shown in Table 1. The highest proportion of participants, 176 (44%), was in the age group of 18–30 years, with 290 (72.5%) females. Around two-thirds (266) of the participants were married and 110 (27.5%) were single. A higher proportion of the participants, 218 (54.5%), were government employees. Of all the participants, 77 (19%) were either unemployed or housewives. Regarding the education level, 241 (60%) participants were graduates and 74 (18.5%) postgraduates. The sample had 2.5% illiterates, 4% were able to read and write, and 3.5% had attended primary school. Considering monthly income, 140 (35%) participants had a monthly income of below *Iraqi Dinar* (ID) 5,00,000, and about half of them, 184 (46%), had monthly earnings of ID 5,00,000–10,00,000.

TABLE 1. Distribution of Studied Sample According to Socio-Demographic Characteristics.

Variables	N = 400	%
Age group (years)		
18–30	176	44.0
31–45	152	38.0
46–60	54	13.5
>60	18	4.5
Gender		
Male	110	27.5
Female	290	72.5
Marital status		
Single	110	27.5
Married	266	66.5
Divorced/separated	14	3.5
Widowed	10	2.5
Employment status		
Government employee	218	54.5
Nongovernmental employee	44	11.0
Student	38	9.5
Unemployed/housewife	77	19.0
Others	23	6.0
Education level		
Illiterate	10	2.5
Read and write	16	4.0
Primary school	14	3.5
Secondary school	45	11.5
Graduate (college)	241	60.0
Postgraduate	74	18.5
Monthly income (ID)		
<5,00,000	140	35.0
5,00,000–7,50,000	82	20.5
>7,50,000–10,00,000	102	25.5
>10,00,000	76	19.0

The prevalence of SM among participants of the study sample was 93% (372) (Figure 1). Reasons for using SM among participants were varied and distributed as follows: 112 (30%) of them related to no need to visit a doctor for simple symptoms; 100 (27%) of them had experience of treating similar condition; 60 (16%) used SM for saving time; 57 (15%) used SM because of emergency purpose; 48 (13%) used SM because medicines could be obtained easily; and 38 (10%) related SM to difficult attending a private clinic (Table 2).

In all, 32 participants informed that they never used SM because of the following reasons: 12 (43%) of them related to the side effects of drug association; 9 (32%) never used SM because of lack of required medical experience; 5 (18%) due to the risk of missing a diagnosis; 4 (14%) because SM was seldom effective, 2 (7%) because of risk of wrong dose, while no one informed because of high cost medication or other reasons (Table 3).

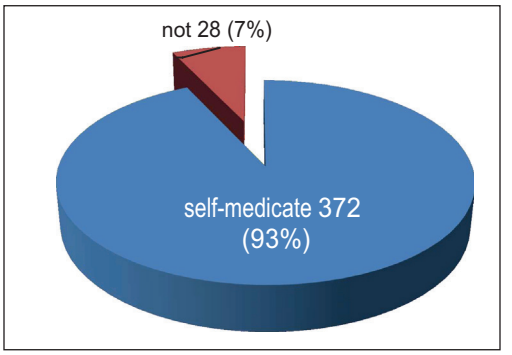

FIGURE 1. Prevalence of self-medication.

TABLE 2. Reasons of Self-Medication in the Studied Sample.

Variables	N = 372*	%
No need to visit a doctor for a simple illness	112	30
Previous experience of treating similar condition	100	27
Time saving	60	16
Emergency use of medication	57	15
Medicine readily available	48	13
More affordable and cost-effective than visiting a private clinic	38	10
Crowd avoidance	18	5
Lack of doctor at a nearby health center	5	1.3
Safer	3	0.8
No trust	2	0. 5

**More than one answer allowed.*

Sources of information about medicines used by participants

The sources of information about medicines used by the participants were widely distinct, for 100 (27%) participants used medicine leaflets; 86 (23%) used previous prescriptions; 78 (21%) regarded family member or relative as a source of information; 67 (18%) of the study participants inquired from a nurse or health assistant; and the remainder 41 (11%) used mass media as the source of information about medicines (Figure 2).

Sources to obtain medicines used by participants were divided into the following three categories: the majority of the participants, 331 (89%), depended on private pharmacies, 37 (10%) of them depended on paramedics, while 4 (1%) depended on street vendors or hawkers (Figure 3).

TABLE 3. Reasons for Not Using Self-Medication in the Studied Sample.

Variables	N = 28*	%
Side effect association	12	43
Requires medical experience	9	32
Risk of missing diagnosis	5	18
Seldom effective	4	14
Risk of wrong dose	2	7
High cost of medicines or other reasons	0	0

**More than one answer allowed.*

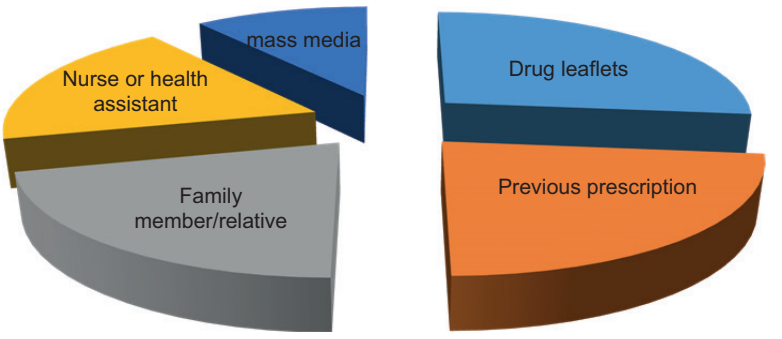

FIGURE 2. Proportion of the sources of information about medicines in the studied sample.

J Popul Ther Clin Pharmacol Vol 28(2):e62–e70; 10 January 2022.

Regarding the ways of requesting medicine from pharmacies, about half 167 (45%) of the participants mentioned the name of medicine while making requisition; 115 (31%) of the studied sample telling the symptoms of the disease to the pharmacist, and only 90 (24%) taking the drug container (bottles, boxes, etc.) (Figure 4).

Self-medication was found in 146 (96.1%) participants aged 31–45 years and in 166 (94.3%) participants aged 18–30 years with significant association between participant's age (being younger) and SM (P = 0.001). No significant association was established between SM practice and participant's gender (P = 0.313), marital status (P = 0.173), employment status (P = 0.180), educational level (P = 0.321), or monthly income (P = 0.127) (Table 4).

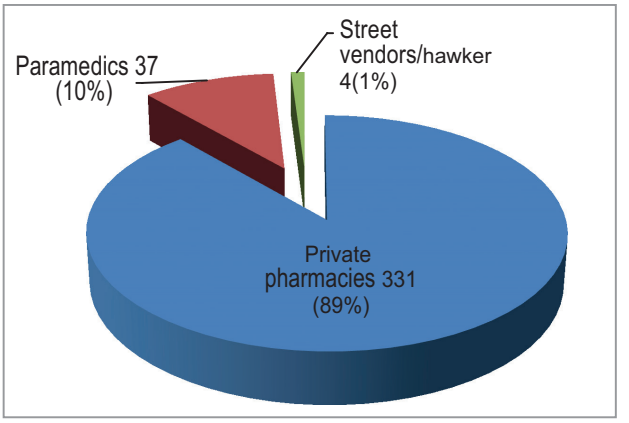

FIGURE 3. Proportion of sources to obtain medicines in the studied sample.

DISCUSSION

Nowadays, indiscriminate use of medicines, that is, SM practice, has become the greatest health, social, and economic issue in different societies, including Iraq.[7] In a total sample of 460 participants, only 400 completed their questionnaire (response rate: 86.9%), who were enrolled in this study. Most of the participants were aged 18–31 years, and the majority of them were females, belonged to low-income families, and represented most of the patients who sought medical services from hospitals.

Based on the results of this study, the overall prevalence of SM practice among the participants was 93%. Previous studies have revealed a prevalence of 35.4–83% in eastern Mediterranean countries, that is, 42.5% in Jordan, 35.4% in Saudi Arabia, and 68.1% in Pakistan. SM practice is also quite prevalent among adolescents in many Middle East countries such as Jordan (87% adolescents), Palestine (98% adolescents), and Kuwait (92% adolescents).[8] According to a systematic review study

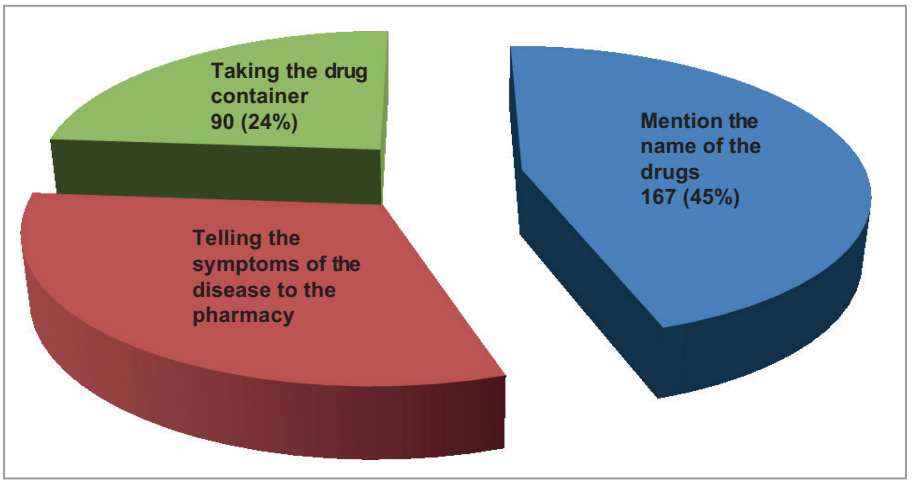

FIGURE 4. Proportion of the manner for requesting medicine from pharmacies.

J Popul Ther Clin Pharmacol Vol 28(2):e62–e70; 10 January 2022.

TABLE 4. Distribution of Study Participants Self-Medication Practice and General Characteristics.

Variable	Self-medication		Total N = 400 (%)	P
	Yes N = 372 (%)	No N = 28 (%)		
Age group (years)				
18–30	166 (94.3)	10 (5.7)	176 (44.0)	0.001
31–45	146 (96.1)	6 (3.9)	152 (38.0)	
46–60	48 (88.9)	6 (11.1)	54 (13.5)	
>60	12 (66.7)	6 (33.3)	18 (4.5)	
Gender				
Male	100 (90.9)	10 (9.1)	110 (27.5)	0.313
Female	272 (93.8)	18 (6.2)	290 (72.5)	
Marital status				
Single	100 (90.9)	10 (9.1)	110 (27.5)	0.173
Married	250 (93.9)	16 (6.0)	266 (66.5)	
Divorced/separated	14 (100.0)	0 (0.0)	14 (3.5)	
Widowed	8 (80.0)	2 (20.0)	10 (2.5)	
Employment status				
Government employee	208 (95.4)	10 (4.6)	218 (54.5)	0.180
Nongovernmental employee	40 (90.9)	4 (9.1)	44 (11.0)	
Student	34 (89.5)	4 (10.5)	38 (9.5)	
Unemployed/housewife	71 (92.2)	6 (7.8)	77 (19.0)	
Others	19 (82.6)	4 (17.4)	23 (6.0)	
Educational level				
Illiterate/read and write/primary schooling	36 (90.0)	4 (10.0)	40 (10.0)	0.321
Secondary school	41 (91.1)	4 (8.9)	45 (11.5)	
Graduate	223 (92.5)	18 (7.5)	241 (60.0)	
Postgraduate	72 (97.3)	2 (2.7)	74 (18.5)	
Monthly income (ID)				
<5,00,000	128 (91.4)	12 (8.6)	140 (35.0)	0.127
5,00,000–7,50,000	74 (90.2)	8 (9.8)	82 (20.5)	
>7,50,000–10,00,000	100 (98.0)	2 (1.9)	102 (25.5)	
>10,00,000	66 (86.8)	10 (13.2)	76 (19.0)	

conducted in Southeast Asia, the prevalence of SM ranged from 7.3 to 85.59% with an overall proportion of 42.64%. Prevalence rate of SM practice also differed greatly between countries and study subjects, with high prevalence reported from India and Nepal, and a low prevalence from Indonesia and Bangladesh.[9]

This wide variation in prevalence of SM practice could be attributed to different socioeconomic profiles, culture, demographic characteristics of

the populations studied, sampling design and tools used, and laws regarding availability of medicines and their use as SM. Important reasons of SM practices observed in this study were lack of need to visit a doctor for simple symptoms, having prior experience of treating similar condition, time-saving by taking SM, using SM for emergency purpose, easy availability of medicines, and SM being more affordable and cost-effective than private consultation. Reasons for not using SM were related to adverse effects of medicines, lack of required medical experience, risk of misdiagnosis, SM being seldom effective, and risk of having wrong dose.

The same results about SM practices have been reported frequently by other studies. Yousef et al. in 2008 demonstrated that the most common reasons for SM practice included the symptoms of disease were too minor to be checked by a doctor, long waiting period for doctor consultation, and avoiding cost of doctor consultation.[10] A study conducted by Al-Flaiti et al. in Oman in 2014 demonstrated that respondents practiced SM either because their illness was not serious or they had prior experience with the medicine.[11] The present study found that maximum information was collected from medicine leaflets, prior experience, doctor's old prescriptions, conversation with a family member or relatives, and talking to nurse or health assistant. Nearly similar results were obtained in the studies conducted by Ahmed et al.[4] in Iraq, Eticha and Mesfin in Ethiopia,[6] and Alghanim in Al-Riyadh, Saudi Arabia,[12] where the most important sources of information were private pharmacy (over-the-counter medication), left over prescriptions, talking to family/friends as well as a systematic review and meta-analysis. Studies conducted in developing countries revealed that maximum information came from relatives or friends and prior successful experience of SM practice.[13]

Importance of written information of treatment to improve patient's knowledge about their therapy is necessary and it must not be replaced by verbal consultation, especially if no improvement is observed or side effect or other problems appear. This study shares the main sources of getting medicines for SM with the studies conducted in Iraq in 2017[4] and Egypt in 2011.[14] There also the main source of having medicines was the community pharmacy. This and other studies[6,15] demonstrated the same manner of getting medicines from pharmacies, either by mentioning the name of medicine, or stating symptoms to pharmacist , or showing an old sample.

According to the Charter of Collaboration between Pharmaceutical Group of European Community and European Proprietary Medicines Manufacturers Association, pharmacist is a key figure and an adviser to the public on everyday healthcare issues. In supply and delivery of medicines to consumers, pharmacy, in its professional capacity, has direct contact with patients and is competent to provide sound advice on supply of medicines.[6]

Pharmacists are responsible for the extensive misuse of drugs in the Middle East societies as reported by different studies. Thus, pharmacists play an important role in identifying, solving, and preventing drug-related problems for achieving optimal patient outcomes and quality of life. Ambulatory care pharmacists have the opportunity and responsibility to foster safe, appropriate, effective, and economical use of medications, especially the medicines that patients take for SM. Pharmacists must guide their customers to consult physician before selecting self-medication. Studies from different regions have demonstrated contradictory results for association between SM practices and age, gender, educational level, working position, and income of respondents. Several studies,[16,17] were consistent with the results of the present study, where statistically lower prevalence of SM was observed by adults at a later stage of life. This could be due to higher use of health services by the elderly population but low level of awareness toward SM among other age groups. On the other hand, there were studies that didn't

match with the results of this study considering the prevalence of SM and socio-demographic data of respondents. This could be due to different factors such as culture, education, income, religion, free healthcare, and health insurance. Aghdash et al. in their study revealed that SM practices were more prevalent among the elderly, the households, and students.[18] Shafie et al. revealed in their study conducted in 2018 that females, married, and secondary education respondents and low monthly income group were significantly associated with SM practice.[15] These findings were not consistent with the results of a study conducted by Awad et al. in 2005, where the middle-income group was found to be more self-medicating.[19] A study from Sira town, Oromia, West Ethiopia, done by Jaleta et al. in 2016,[20] revealed no association of SM practice with sex, educational status, occupation, and income. Tesfamariam et al. in 2019 demonstrated that low education was associated with higher risky patterns of SM use, and more prevalence of SM among low-income groups.[21] The results of these studies established that low affordability of the cost of medications could be responsible for SM. Hence, it is important that the health system must ensure to provide free and optimal medical services to those who couldn't afford the cost of healthcare.

CONCLUSIONS

Self-medication is a common healthcare practice among attendants of outpatients at Baghdad teaching hospital. It presented different socio-demographic characteristics, with more prevalence in younger age group and among low-income population. A significant association was observed between age and SM practice. The elderly practiced less SM because of chronic diseases and their using health services for multiple therapies. The usage of SM has increased due to easy accessibility of medicines from pharmacies, paramedics, and street vendors

REFERENCES

1. World Health Organization. (2000). Guidelines for the regulatory assessment of medicinal products for use in self-medication. World Health Organization.
2. Hussain S, Malik F, Ashfaq KM, Parveen G, Hameed A, Ahmad S, et al. Prevalence of self-medication and health-seeking behavior in a developing country. Afr J Pharm Pharmacol. 2011 Jul 31;5(7):972–8. https://doi.org/10.5897/AJPP11.302
3. Ali AN, Kai JT, Keat CC, Dhanaraj SA. Self-medication practices among healthcare professionals in a private university, Malaysia. Int Curr Pharmaceut J. 2012 Sep 5;1(10):302–10. https://doi.org/10.3329/icpj.v1i10.11846
4. Ahmed NM, Sulaiman KH. Self-medication practice among patients attending a sample of primary health care centers in Erbil City. J Educ Pract. 2016;7(24):73–9.
5. Ayalew MB. Self-medication practice in Ethiopia: A systematic review. Patient Prefer Adher. 2017;11:401. https://doi.org/10.2147/PPA.S131496
6. Eticha T, Mesfin K. Self-medication practices in Mekelle, Ethiopia. PLoS One. 2014 May 12;9(5):e97464. https://doi.org/10.1371/journal.pone.0097464
7. Saber AA. Mohseni M, Etemadi M, et al. Prevalence and cause of self-medication in Iran: A systematic review and meta-analysis article. Iran J Public Health. 2015 Dec;44(12):1580–93. PMCID: PMC4724731
8. Khalifeh MM, Moore ND, Salameh PR. Self-medication misuse in the Middle East: A systematic literature review. Pharmacol Res Perspect. 2017 Aug;5(4):e00323. https://doi.org/10.1002/prp2.323
9. Nepal G, Bhatta S. Self-medication with antibiotics in WHO Southeast Asian region: A systematic review. Cureus. 2018 Apr;10(4):e2428. https://doi.org/10.7759/cureus.2428
10. Yousef AM, Al-Bakri AG, Bustanji Y, Wazaify M. Self-medication patterns in Amman, Jordan. Pharm World Sci. 2008 Jan;30(1):24–30. https://doi.org/10.1007/s11096-007-9135-x
11. Al-Flaiti M, Al-Badi K, Hakami WO, Khan SA. Evaluation of self-medication practices in acute

diseases among university students in Oman. J Acute Dis. 2014;3:249–52. https://doi.org/10.1016/S2221-6189(14)60056-1

12. Alghanim SA. Self-medication practice among patients in a public health care system. East Mediterr Health J. 2011;17(5):409–16.
13. Ocan, M., Obuku, E. A., Bwanga, F., Akena, D., Richard, S., Ogwal-Okeng, J., & Obua, C. (2015). Household antimicrobial self-medication: a systematic review and meta-analysis of the burden, risk factors and outcomes in developing countries. *BMC public health*, *15*(1), 1-11.
14. El Ezz NF, Ez-Elarab HS. Knowledge, attitude and practice of medical students towards self-medication. Egypt J Prev Med Hyg. 2011;52(4):196–200. PMID: 22442925
15. Shafie M, Worku Y, Martín-Aragón S. Prevalence and determinants of self-medication practice among selected households in Addis Ababa community. PLoS One. 2018 Mar;13(3):e0194122. https://doi.org/10.1371/journal.pone.0194122
16. Carrasco-Garrido, P., Hernández-Barrera, V., Lopez de Andres, A., Jiménez-Trujillo, I., & Jiménez-García, R. (2010). Sex—Differences on self-medication in Spain. *pharmacoepidemiology and drug safety*, *19*(12), 1293-1299.
17. Galvão TF, Silva MT, Pereira MG, et al. Prevalence and associated factors of self-medication in adults living in the Federal District, Brazil: A cross-sectional, population-based study. Prevalence of self-medication in the adult population of Brazil: A systematic review. Epidemiol Serv Saúde. 2017;26(2):319–30. https://doi.org/10.5123/S1679-49742017000200009
18. Aghdash SA, Mohseni M, Etemadi M. Prevalence and cause of self-medication in Iran: A systematic review and meta-analysis article. Iran J Public Health. 2015 Dec;44(12):1580–93. PMID: 26811809; PMCID: PMC4724731
19. Awad A, Eltayeb I, Matowe L, Thalib L. Self-medication with antibiotics and antimalarials in the community of Khartoum State, Sudan. J Pharm Pharm Sci. 2005 Aug 12;8(2):326–31. PMID: 16124943
20. Jaleta A, Tesema S, Yimam B. Self-medication practice Sire-town, west Ethiopia: A cross sectional study. Cukurova Med J. 2016;43:447–52. https://doi.org/10.17826/cukmedj.237467
21. Tesfamariam S, Anand IS, Kaleab G, Berhane S, Woldai B, Habte E, et al. Self-medication with over the counter drugs, prevalence of risky practice and its associated factors in pharmacy outlets of Asmara, Eritrea. BMC Public Health. 2019 Dec;19(1):159. https://doi.org/10.1186/s12889-019-6470-5