

Community awareness and using drugs without physician's prescription, (Egypt -Yemen)

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Abstract: Background: Self-medication is a global health issue that is fluctuating and expanding among various populations worldwide. As expected, it is more prevalent in developing countries. Egypt had the highest prevalence. It can be associated with serious events such as antimicrobial drug resistance. Aim: determine magnitude of the problem and factors related to use of drugs without physician's prescription & study knowledge, attitude and practice of population regarding use of drugs without physician's prescription. Methods: A cross-sectional included 804 persons from two countries, Egypt and Yemen. Online and/or paper surveys was conducted from 6 March 2024 to 25march 2024 among the Egyptian and Yemen general population. It was designed as a self-administered Google Form. Data was fed to the computer and analyzed using IBM SPSS (2013) (IBM SPSS Statistics for Windows, Version 22.0). Results: There was statistically significant difference between positive attitude level and age < 30 yrs old (P-value= 0.026), University & postgraduate students (P-value= 0.000), Urban (P= 0.005), enough monthly income (P-value=0.000), Occupation as Student (P-value= 0.001), negative attitude& Egypt country (P-value= 0.000).There was statistically significant difference between practice level (poor) and University & postgraduate students (P-value= 0.000), Egypt country, (fair) (P-value= 0.001), Urban, (good) (P= 0.002) and occupation as student, (poor) (P-value= 0.002). Conclusion: Most of the population used drugs without a physician prescription. Many participants had poor knowledge, practice and good attitude. Factors associated with good knowledge were being females, age less than 30, Yemen, urban area, enough & save economic level, being students. Factors associated with positive attitude age less than 30, university students from Yemen and urban area, enough monthly income, being students. Factors are associated with poor university practice, postgraduate, urban areas. From Egypt (fair level) and being student (good level). Most of the participants who used drugs without a prescription had poor practice with highlv statistically significant difference.

Introduction

Self-medication is the use and intake of drugs, herbs or other pharmaceuticals and therapies without a physician's and specialist prescription and or on the advice of another individual (WHO,2016). The major causes for self-medication: Cure from the disease (77.5%), time saving (76.3%), Mild illnesses (71.1%), Self-confidence (56.7%), indolence and sloth (56.7%), and the use of leftover domestic therapies was common among applied medical students (39.9%).^[1] Risks and complications of self-medications include incorrect self-diagnosis, drug-drug or supplement interactions, wrong choice of therapy, risk of tolerance, abuse and death. Self-medication spread and prevalence between university students is increased, and this represents a health problem that needs correction, solution and awareness.^[2]

Aim of the study:

1-determine magnitude of the problem and factors related to use of drugs without physician's prescription

2-study knowledge, attitude and practice of population regarding use of drugs without physician's prescription.

Methods

A cross-sectional online and/or paper surveys was conducted from 6 March 2024 to 25 March 2024 among the Egyptian and Yemen general population and/or paper surveys. Populations of any gender, and able to respond to the questionnaire in the Arabic language was invited to participate in the study.

Sampling and sample size calculation

The sample size was calculated using a Collaborative, Open-Source Project in Epidemiologic Computing the Open Epi Calculators Version 3.01 using confidence interval of 95.00%, an expected frequency of (62.8%)^[12]

and an acceptable margin of error of 5.00%. The minimum sample size was 359 responses. sample size was increased to 804 to increase the power of the study.

Study tool (questionnaire development)

The questionnaire was developed based on questions from previous studies. It was designed as a self-administered Google Form survey available in Arabic language.

The questionnaire included sociodemographic data including gender, educational level, age groups, countries, residence, marital status, health insurance, economic level, occupation and history of chronic diseases.

Practice of self-medication included:

Care to visit a doctor when experience minor pain symptoms, used medications without a prescription in the last two months, type of drug used, place of injectable drugs, if medical students depending on their study in self-diagnosis, Reading the expiry date on drugs^[13].

Knowledge about self-medication included:

Storing drugs, time intervals between doses, Side effects of drugs, factors affect the efficacy of the drug, Dangers of using drugs without a prescription.

Attitude toward SM included:

Agreement with the pharmacist sells drugs without a prescription, supporting patients' use drugs without a prescription, supporting that use of drugs or herbs without a prescription may hide serious diseases, Agreement with increasing drugs doses without consulting a doctor is completely.

The knowledge, attitude, practice questions have been recorded as:

1 for the correct answer and 0 for the incorrect one except for question reading the expiry date on drugs in practice 1 for sometimes, 2 for often and 3 for always. 0-15 knowledge score, 0-7 for practice score and 0- 4 for attitude score. Less than 50% of score is considered poor knowledge or practice.

From 50%-70% is considered fair. More than 70% is considered good.

Data Collection

An online link to the Google form was distributed on the different social media platforms with the help of research team of medical students of merit university (Egypt) and university of Science and Technology (Sana'a-Yemen). The link recorded the data anonymously. Individuals who may not have access to the internet or the link were approached through public places, hospitals, universities and airports were invited to participate and fill in the paper questionnaire. Paper questionnaires were then entered by the research team.

Data management and statistical analysis

Data was analyzed using IBM SPSS (IBM SPSS Statistics for Windows, Version 22.0.

Armonk, NY: IBM Corp). Qualitative data were described using number and percentage The Chi square test was used for comparison of two or more groups of categorical variables. The significance of the results obtained was judged at the 0.05 level. Pearson correlation coefficient was used to determine the strength and direction of a linear relationship between knowledge, attitude and practice^[11].

Results: Our cross – sectional study included 804 persons from two countries, Egypt and Yemen, using self-administered Google Form survey available in Arabic language, was conducted from 6 March 2024 to 25 March 2024. Populations of any age, gender, and able to read and understand Arabic language and able to respond to the questionnaire in the Arabic language were recruited in the study. As shown **in table (1)**, nearly half of them were males (49.69%) and other half were females (50.4).

Sociodemographic data	No. (804)	Percent (100%)
Sex:		
Male	399	49.6%
Female	405	50.4%
Age: (years)		
< 18	51	6.3%
18 - < 30	618	76.9%
30 - < 45	79	9.8%
45 - < 60	39	4.9%
Educational level:		
Secondary	83	10.3%
University	629	78.2%
Postgraduate	41	5.1%
Country:		
Egypt	450	56.0%
Yemen	312	38.8%
Syria	18	2.2%
Saudi Arabia	14	1.7%
Residence:		
Urban	567	70.5%
Rural	237	29.5%
Marital status:		
Single	620	77.1%
Married	168	20.9%
Enough monthly income:		
Yes	445	55.3%
No	359	44.7%
Occupation:		
Professional	118	14.7%
Student	532	66.2%

Table (1) Socio-demographic data of population

About three fourths (76.9%) were between 18 – <30 yrs old, 6.3 % were < 18 yrs old and 2.1% were ≥ 60 yrs old. More than three fourths (78.2%) were university students and 0.6, 0.7 were primary and preparatory school students, respectively. More than half (56%) were Egyptians and 38.8 % were from Yemen. The majority (70.5%) were from urban area and (29.5%) were from rural areas. The majority (77.1%) were single, and the minority (20.9%)

were married. About two thirds (68.8%) had no health insurance. Half of the population studied (55.3%) had enough monthly income. Nearly two thirds (66%) were students and 14.7% were professionals. Of the studied population, as shown **in table (2)**, 28.6% have the care to visit doctors and 71.4% haven't. Most of them (90%), used drug without prescription.

Practice of self-medications	No (804)	Percent (100%)
Care to visit doctor:		
Yes	230	28.6%
No	574	71.4%
Drug use without prescription:		
Yes	724	90.0%
No	80	10.0%
Type of medication: (n= 724)		
Painkiller in tablet form	412	56.9%
Antibiotics in tablet form	205	28.3%
Antipyretics	193	26.7%
Cough medications	179	24.7%
Vitamins	185	25.6%
Place of injection:		
At home	403	55.7%
Pharmacy	151	20.9%
PHC/ hospital	170	23.5%
If you are a medical student, use educational experience in diagnosis:		
Yes	72	23.1%
No	240	76.9%
Use drugs when you feel pain:		
Yes	452	56.2%
No	352	43.8%
Advice against drugs without prescription:		
Yes	590	73.4%
No	214	26.6%

Table (2) Practice of self-medications

Nearly the half (56.9%), used pain killer in tablet form and less than one third (28.3%), used antibiotics in tablet form. More than half of the

studied population (55.7%) was at home during drug injection. More than three fourths of medical students (76.9%) didn't use educational

experience in diagnosis, while about three fourths (73.4%) were advised against drug use without prescription. There was a weak correlation of statistically significant difference between knowledge score and attitude score (r- value=

0.191& P-value= 0.000), between knowledge score and practice score (r- value=0.259 & P-value= 0.000) and between attitude score and practice score (r- value=0.083 & P-value= 0.019), as shown **in table (3) and figure (1).**

Scores	Value	Knowledge score	Attitude score	Practice score
Attitude score	r-value	0.191		
	P-value	0.000*		
Practice score	r-value	-0.259	-0.083	
	P-value	0.000*	0.019*	

Table (3): Correlation between knowledge, attitude and practice levels scores

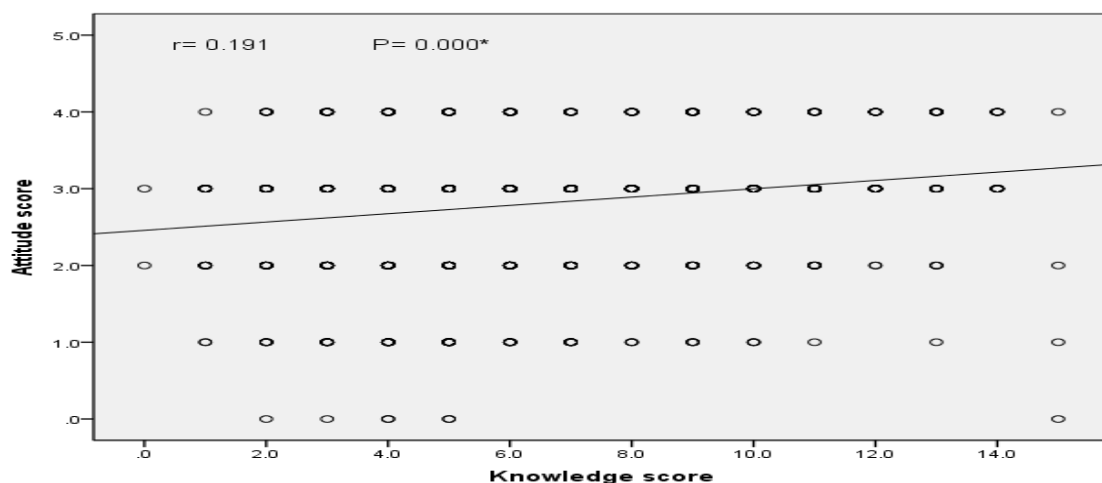


Figure (1): Correlation between knowledge, attitude and practice levels scores

There was statistically significant difference between female sex and good knowledge level (P-value= 0.013), University & postgraduate students and good knowledge level ((P-value= 0.012), Yemen country and good knowledge level (P-value= 0.000), Urban and good knowledge level (P= 0.0020). enough monthly income and fair & good knowledge evel(P-value=0.000), Occupation

as Student and both fair and good knowledge levels (P-value=0.024), this is shown **in table (4).**

As shown **in table (5).** there was statistically significant difference between positive attitude level and age < 30 yrs old (P-value= 0.026), University & postgraduate students (P-value= 0.000), Egypt country (P-value= 0.000), Urban (P= 0.005), enough monthly income (P-value=0.000), Occupation as Student (P-value= 0.001).

Personal data	Knowledge level						P-value
	Poor (n= 527)		Fair (n= 168)		Good (n= 109)		
	No.	%	No.	%	No.	%	
Sex:							
Male	275	52.2%	84	50.0%	40	36.7%	0.013*
Female	252	47.8%	84	50.0%	69	63.3%	
Age: (years)							
< 30	439	83.3%	137	81.5%	93	85.3%	0.711
≥ 30	88	16.7%	31	18.5%	16	14.7%	
Educational level:							
Less than secondary	41	7.8%	8	4.8%	2	1.8%	0.012*
Secondary	64	12.1%	12	7.1%	7	6.4%	
University/ Postgraduate	422	80.1%	148	88.1%	100	91.7%	
Country:							
Egypt	320	60.7%	88	52.4%	42	38.5%	0.000*
Yemen	181	34.3%	73	43.5%	58	53.2%	
Residence:							
Urban	350	66.4%	129	76.8%	88	80.7%	0.002*
Rural	177	33.6%	39	23.2%	21	19.3%	
Marital status:							
Married	111	21.1%	37	22.0%	20	18.3%	0.754
Not married	416	78.9%	131	78.0%	89	81.7%	
Enough monthly income:							
Yes	254	48.2%	116	69.0%	75	68.8%	0.000*
No	273	51.8%	52	31.0%	34	31.2%	
Economic level:							
Not enough	94	17.8%	20	11.9%	5	4.6%	0.001*
Enough	293	55.6%	89	53.0%	60	55.0%	
Enough and save	140	26.6%	59	35.1%	44	40.4%	
Occupation:							
Professional	74	14.0%	31	18.5%	13	11.9%	0.024*
Employee	20	3.8%	7	4.2%	7	6.4%	
Student	335	63.6%	112	66.7%	85	78.0%	

Table (4) Relation between knowledge and sociodemographic factor

Personal data	Attitude level				P-value
	Negative		Positive		
	No.	%	No.	%	
Sex:					
Male	123	50.2%	276	49.4%	0.828
Female	122	49.8%	283	50.6%	
Age: (years)					
< 30	193	78.8%	476	85.2%	0.026*
≥ 30	52	21.2%	83	14.8%	
Educational level:					
Less than secondary	28	11.4%	23	4.1%	0.000*
Secondary	28	11.4%	55	9.8%	
University/ Postgraduate	189	77.1%	481	86.0%	
Country:					
Egypt	171	69.8%	279	49.9%	0.000*
Yemen	66	26.9%	246	44.0%	
Residence:					
Urban	156	63.7%	411	73.5%	0.005*
Rural	89	36.3%	148	26.5%	
Marital status:					
Married	57	23.3%	111	19.9%	0.274
Not married	188	76.7%	448	80.1%	
Health insurance:					
Yes	73	29.8%	178	31.8%	0.564
No	172	70.2%	381	68.2%	
Enough monthly income:					
Yes	112	45.7%	333	59.6%	0.000*
No	133	54.3%	226	40.4%	
Economic level:					
Not enough	45	18.4%	74	13.2%	0.065
Enough	137	55.9%	305	54.6%	
Enough and save	63	25.7%	180	32.2%	
Occupation:					
Professional	41	16.7%	77	13.8%	0.001*
Employee	14	5.7%	20	3.6%	
Student	141	57.6%	391	69.9%	

Table (5): Relation between level of attitude and sociodemographic factors

As shown in table (6), There was a statistically significant difference only with poor practice level (P=0.000), as shown in table (7). There was good relation of statistically significant difference between practice level and University &

postgraduate students (P-value= 0.000), Egypt country, fair and good relation (P-value= 0.001). Urban, poor relation (P= 0.002) and occupation as student, good relation (P-value= 0.002).

Personal data	Practice level						P-value
	Poor		Fair		Good		
	No.	%	No.	%	No.	%	
Sex:							
Male	238	47.7%	103	51.2%	58	55.8%	0.283
Female	261	52.3%	98	48.8%	46	44.2%	
Age: (years)							
< 30	415	83.2%	163	81.1%	91	87.5%	0.365
≥ 30	84	16.8%	38	18.9%	13	12.5%	
Educational level:							
Secondary	41	8.2%	25	12.4%	17	16.3%	0.000*
University/ Postgraduate	438	87.8%	149	74.1%	83	79.8%	
Country:							
Egypt	255	51.1%	137	68.2%	58	55.8%	0.001*
Yemen	218	43.7%	53	26.4%	41	39.4%	
Residence:							
Urban	370	74.1%	122	60.7%	75	72.1%	0.002*
Rural	129	25.9%	79	39.3%	29	27.9%	
Marital status:							
Married	110	22.0%	40	19.9%	18	17.3%	0.515
Not married	389	78.0%	161	80.1%	86	82.7%	
Health insurance:							
Yes	148	29.7%	70	34.8%	33	31.7%	0.407
No	351	70.3%	131	65.2%	71	68.3%	
Enough monthly income:							
Yes	285	57.1%	102	50.7%	58	55.8%	0.307
No	214	42.9%	99	49.3%	46	44.2%	
Economic level:							
Not enough	69	13.8%	35	17.4%	15	14.4%	0.472
Enough	269	53.9%	114	56.7%	59	56.7%	
Enough and save	161	32.3%	52	25.9%	30	28.8%	
Occupation:							
Professional	81	16.2%	26	12.9%	11	10.6%	0.002*
Employee	20	4.0%	7	3.5%	7	6.7%	
Student	335	67.1%	127	63.2%	70	67.3%	

Table (6): Relation between level of practice and sociodemographic factors

	Drug use without prescription				P-value
	Yes		No		
	No.	%	No.	%	
Knowledge level:					
Poor	474	65.5%	53	66.3%	0.958
Fair	151	20.9%	17	21.3%	
Good	99	13.7%	10	12.5%	
Attitude level:					
Negative	225	31.1%	20	25.0%	0.262
Positive	499	68.9%	60	75.0%	
Practice level:					
Poor	483	66.7%	16	20.0%	0.000*
Fair	175	24.2%	26	32.5%	
Good	66	9.1%	38	47.5%	

Table (7): Relation of drug use without prescription with level of knowledge, attitude and practice:

Discussion

The self-medication (SM) practice is common among populations worldwide.^[3] A lot of causes push people to self-medicate, due to their unawareness of the consequences and undermining them. The causes vary from individual level to community level as reported by other various study types.^[4]

A cross-sectional survey was performed to achieve the target of this study. This study aimed to assess the awareness and practice of SM in both Egypt and Yemen and to study knowledge, attitude and practice of population regarding use of drugs without physician's prescription.

Nearly half of our studied population used drug without prescription when they felt pain and stopped drugs when pain stopped. As in Thapa et al. study, in which the most noticed symptom was pain. So, pain relievers were used by participants.^[5] If pain is mild, patients think that this does not need a physician or specialist advice. This study added more understanding of SM because it zoomed more on the general public's opinions rather than the pharmacists and drug sellers. About two thirds of studied population (62.7%) documented that pharmacists sell

medications and as regard patient use drugs without prescription (81%) didn't support this. These findings are comparable to Al-Mohamadi et al.'s study, 2013.^[6] While less than one third (28.5%) of our study learned about medication by pharmacist's advice.

More than half of recruited population (55.2%), documented that the use of drugs or herbs without prescription didn't hide serious diseases, while most of them (92.7%) documented that, the increasing drug doses was not safe and this coincided with Zaidi et al, 2023 study^[7] that reported that the majority of the study population (65.9%) believed that SM is dangerous. Zaidi et al, 2023 also said that they were obligated to self-medicate when circumstances for them are not suitable to consult a doctor.^[7] Of our studied population, 28.6% have the care to visit doctor and 71.4% hadn't. Most of them (90%), used drug without prescription.

Indian study showed that the prevalence of self-medication was found to be 11.9%. Males, age >40 years and occupations of moderate level activity, were significantly associated with higher self-medication usage ($P < 0.05$).^[8] If these findings

compared with our results, there were nearly half males (49.69%) and other half were females (50.4). About three fourths (76.9%) were between 18 – <30 yrs old, and 2.1% were $\geq$ 60 yrs old.

More than eighty percent (84.4%) of the studied population were university undergraduates and postgraduates, with statistically significant difference P- value (0.01).

In a study conducted on 1630 Egyptian individuals, there were around 55.97% and 48.28% of the participants had favorable knowledge and attitudes toward SM respectively, while 62.8% had done self-medication in the previous three months. About 60.74% used pain relievers followed by antibiotics (32.13%).^[9] These findings were contradictory to our study results, which showed small percent (13.6%) had good knowledge and more than two thirds (69.5%) had positive attitude of drug use without prescription, while 37.2% had practiced self-medications once daily.

In a study conducted in Saudi Arabia and Egypt, a total of 500 male and females' participants used drugs without a doctor consultation. About (67.38%) used antibiotics followed by antiacids (20.34%).^[10]

Conclusion: Most of the population used drugs without a physician prescription. Most participants had poor knowledge, practice and good attitude. Factors associated with good knowledge were being females age less than 30, From Yemen and urban area, enough economic level, being students. Factors associated with positive attitude age less than 30, university students from Egypt and urban area, enough monthly income, being students. Factors associated with good practice university, postgraduate, from Egypt, urban areas and being student. Most of the participants who use drugs without a prescription had poor practice with highly statistically significant difference.

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