



# Self-Medication among Attendants to Family Health Units in Sohag Health Directorate

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## Article Information

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**Abstract:** Self-medication is a serious public health concern, It's a fairly widespread practice worldwide Both in developed and developing nations. Self-medication practices (SMP) are highly prone to inappropriate use and have its own drawbacks resulting wastage of resources, increase drug resistance pathogens and adverse reactions. The aim of the current study is to detect the prevalence of self-medication among attendants to three family health units in Sohag directorate and to identify the determinants of participants practicing self-medication. Cross sectional study Studied population in this study was attendants to three family health units in Sohag directorate (Edfain – ElHagarsa – Balasfoura) during the period from 1st September 2019 till 31st March 2020. Data was collected through personal interview with participants using a specially designed multi-item questionnaire. During the period of the study, 400 participants were included. among the studied population 228 cases (57%) identified to practice self-medication and will be considered as the first group. Second group included 172 (43%) not confirmed to practice self-medication. Students and house wives formed the majority of self-medicated participants.

**Keywords:** Self-medication; Antimicrobial; Public health.

## Introduction

Globally, self-medication (SM) is increasingly being considered as a component of self-care. World Health Organization (WHO) defines self-care as what people do by themselves to keep their health, prevent and treat illness. According to WHO's definition, "self-medication involves the use of medicinal products by the consumer to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of medication prescribed by a physician for chronic or recurrent diseases or symptoms" (WHO 2000). Good self-medication practices can provide benefits such as saving scarce medical resources from being wasted on minor conditions, controlling chronic diseases, and reducing absenteeism from work due to minor ailments (Vidyavati et al. 2016). However, inappropriate self-medication with OTC drugs can have serious implications, especially in extremes of ages (pediatrics and geriatrics), pregnant and lactating mothers and patients with co-morbidities (Kasabe et al. 2015). People may practice self medication for a variety of reasons, like the urge for self-care, sympathy for family members in sickness, lack of health services, poverty, ignorance, the belief in the benefits provided by disease treatment/prevention, excessive advertisements of drugs, and availability of drugs in establishments other than pharmacies (Kassie et al. 2018). Additionally These include

socioeconomic factors, lifestyle, ready access to drugs, increased potential to manage certain illnesses through self-care, and greater availability of medicinal products. SM might lead to the occurrence of adverse drug reaction, Wrong dosages, drug resistance, in addition to, SM could play an important role in health costs rise (Yang et al. 2016).

## Aim of the work

The aim of the current study is to Detect the prevalence of self-medication among attendants to three family health units in Sohag directorate (Edfain – ElHagarsa – Balasfoura) during the period from 1st September 2019 till 31st March 2020 and Identify the determinants of participants practicing self-medication.

## Materials and Methods

Studied population in this study was attendants to three family health units in Sohag directorate (Edfain – ElHagarsa – Balasfoura), which were chosen randomly during the period from 1st September 2019 till 31st March 2020. Using sample size formula which is  $N = \frac{z^2 p (1 - p)}{d^2}$  where: N=the desired sample size. Z= statistic for a level of confidence (for the level of confidence of 95%, which is conventional, Z value is 1.96). P= expected prevalence of the problem

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(p is considered 50% and it is expressed in the equation in decimal ,5).d= precision. (d is considered 0.05 to produce good precision and smaller error of estimate). $N=(1.96)^2(.5 \times .5)/(.05)^2=385$ . Study tool: Data was collected through personal interview with participants using a specially designed multi-item questionnaire. The questionnaire was divided into four sections and consisted of 33 questions. The first part of the questionnaire was composed of nine questions that were related to the socio-demographic characteristics of the participants. The second section was composed of thirteen questions which assessed the participants' self-Medication habits such taken self-medication in last three months, reason for self-medication. disease for which self-medication taken in last three months. consideration taken while selecting the drug for self-medication. factors affecting selection of particular brand of drug. Third section was composed of ten questions regarding with anti-infectives. The last part included one question about kind of health insurance.

#### Data analysis

Data was subjected to analysis and tabulation using SPSS version 25. Description of quantitative data and expressed as mean and standard deviation. Qualitative data were expressed as number and percentage. The data were tested for normality using the Kolmogorov-Smirnov test and for homogeneity of variances prior to further statistical analysis. Statistical tests to determine P-value were Pearson Chi-Square test, Fisher's Exact Test for categorical data and Independent Samples Test for quantitative data. Multivariate logistic regression analysis was used to calculate odds ratio. Odds ratio was calculated , odds ratio of more than 1 means there is a higher risk of practicing self-medication whilst an OR of less than 1 means there is a lower risk of practicing it.

#### Results

This cross-sectional study was conducted at family health units in Sohag Health Directorate to determine the prevalence of self-medication among the attendants and to identify the determinants of practicing self-medication During the period of the study, 400 participants were included. Among the studied population 228 cases (57%) identified to practice self-medication and will be considered as the first group. Second group included 172 (43%) not confirmed to practice self-medication. The data were tested for normality using the Kolmogorov-

Smirnov test and for homogeneity of variances prior to further statistical analysis. Table (1) and figure (1) shows that the overall prevalence of self-medication in the studied group was 57%; 228 participants from 400 studied population. The principal characteristics of the participants who participated in the study and their

Table (1): Prevalence of self-medication, n=400

groups	Frequency	percentage
Self-medication group	228	57%
Non self-medication group	172	43%

relationship on having some form of self-medication are detailed in Table (2). It shows that there was a statistically significant difference between group 1 (Self-medication) and group 2 (non-self-medication). As regard the gender, 57% of self-medication participants were females. significant difference between the non-self-medicated participants and self-medicated participants. Students and house wives formed the majority of self-medicated participants. Self-medication was higher among married attendants (53.9%) and among those with primary educational level (44.7%).

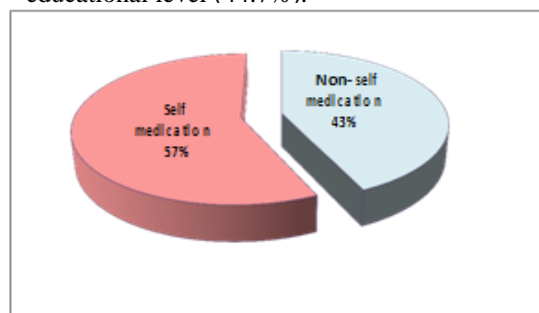


Fig (1): Prevalence of self-medication

(31.6%); other reasons were to save time (24.6%), for the high fees of doctors (20%), they used an old prescribed medication (9.6%) and that they were prompted by a pharmacist (1.3%). According to the complaint for which the self-medication was taken, eye infection represented 10.1% and fever represented 9.2%. About 11.8% had self-medication for more than one complaint. most of self-medication participants had no particular brand to choose (78.5%). Also (13.2%) had chosen the brand recommended by the pharmacy shop. About 9% from the primary health care center. Most of self-medicated participants (74.6%) had never check the prescribing information before self-medication. most of the self-medicated participants had never experienced adverse events with the self-medication drug and only (5.7%) of them had adverse reaction in the form of stomach ache;

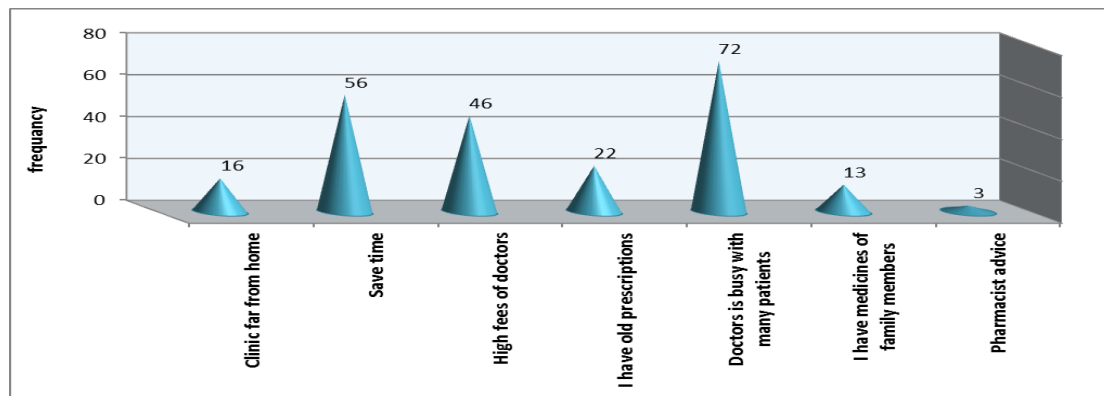


Fig. (2): Causes of self-medication

Table (2): Socio-demographic characters of the studied population

paramet ers	Total (400) No.(%)	Self –medicated (228) No.(%)		Non self - medicated (172) No. (%)	p-value
Gender	<i>Males</i>	188 (47%)	98 (43%)	90 (52.3%)	
	<i>Females</i>	212 (53%)	130 (57%)	82 (47.7%)	
Age (years)	<i>Mean <math>\pm</math> SD</i>	23.6 $\pm$ 19.3	29.2 $\pm$ 18.7	16.3 $\pm$ 17.8	<0.001
	<i>Median</i>	17.5	27	9	
Occupation	<i>Student</i>	152 (38%)	79 (34.6%)	73 (42.4%)	<0.001
	<i>Employee</i>	59 (14.8%)	38 (16.7%)	21 (12.2%)	
	<i>Business</i>	2 (0.5%)	2 (0.9%)	0	
	<i>Housewife</i>	94 (23.5%)	76 (33.3%)	18 (10.5%)	
	<i>Retired</i>	12 (3%)	8 (3.5%)	4 (2.3%)	
	<i>Famer</i>	14 (3.5%)	11 (4.8%)	3 (1.7%)	
	<i>Other</i>	11 (2.8%)	2 (0.9%)	9 (5.2%)	
	<i>Child</i>	56 (13.5%)	12 (5.3%)	44 (24.4%)	
Income/ month	<i>Mean <math>\pm</math> SD</i>	1723 $\pm$ 687.7	1661 $\pm$ 691	18056 $\pm$ 676	0.037
	<i>Median (range)</i>	1700 (350: 3800)	1500 (350-3800)	1800 (500-3800)	
	<i>Unmarried</i>	230 (57.5%)	97 (42.5%)	133 (77.3%)	
Marital status	<i>Married</i>	151 (37.8%)	123 (53.9%)	28 (16.3%)	<0.001
	<i>Others</i>	19 (4.75%)	6 (2.6%)	11 (6.4%)	
Education level	<i>basic</i>	169 (42.3%)	102 (44.7%)	67 (39%)	<0.001
	<i>secondary</i>	73 (18.3%)	56 (24.6%)	17 (9.9%)	
	<i>University and</i>	65(16.25%)	47 (20.6%)	18 (10.4%)	
Family members	<i>Mean <math>\pm</math> SD</i>	5.4 $\pm$ 1.7	5.6 + 1.6	5 + 1.6	0.000
	<i>Range</i>	1:12	1 - 9	2 - 12	
Religion	<i>Muslims</i>	340 (85%)	207 (90.8%)	133 (77.3%)	0.000
	<i>Christians</i>	60 (15%)	21 (9.2%)	39 (22.7%)	

pharmacist. 86.8% of self-medication participants obtained the drug used in self-medication from (2.6%) of those who had experienced adverse reaction went to the pharmacist. Most respondents had taken infection (86.9%) in the last three months, and (62.7%) of them had practiced self-medication with antimicrobial drugs. Amongst all who self-medicated by antimicrobials, the most recent disease or condition for self-medication was due to fever (11.8%) and eye infection (10.5%); followed by running nose (7.9%) and dental problem (7.5%).

Antimicrobial self-administration was mainly practiced based on consulting pharmacist (n= 113; 49.6%). While a previous experience about the dosage represents (3.1%), there was a highly statistically significant difference between self-medication group and non-self-medication group as regard the kind of their health insurance, 45.2% of self-medication participants had no health insurance versus 16.7% had governmental sponsored insurance and 38.2% of them had rural insurance.

Table (3): Binary logistic regression of factors that may affect practicing self-medication, n=400

	Odds ratio	95% C.I.for		p-value
		Lower	Upper	
Age	1.007	0.987	0.500	0.500
Income(>2000 /<2000)	0.999	0.999	0.006	0.006
Family members	1.340	1.148	0.000	0.000
Gender(male)	1.215	0.734	0.449	0.449
Religion(Muslim)	0.348	0.174	0.003	0.003
Educational level (Secondary school and	2.758	1.302	0.008	.008
Marital status (married)	0.154	0.067	0.000	0.000
Occupations(employee or business	2.019	0.735	.173	0.173
Insurance (no health insurance)	0.836	0.320	0.714	0.714

## Discussion

### 1 Prevalence of self-medication

This study showed a prevalence of self-medication 57% which is in line with other studies carried out in different parts of the world such as Greece 54.7% (Papakosta *et al.* 2014) ; also Similar to community based, cross-sectional study in rural Meghalaya, India In which prevalence of practice self-medication was 55% among the rural population (Marak *et al.* 2016). However, the current finding is greater than those of studies conducted in South India (35.9%) (Divya *et al.* 2016) ; in China (32.0%) (Shaghaghi *et al.* 2014); Brazil (16.1%) (Arrais *et al.* 2016); Sire town (27.16%) (Jaleta *et al.* 2016) ; Spain (22%) (Nicolós *et al.* 2018). This points to the fact that self-medication in our community is very common even when compared to other areas across the world. The prevalence of SMP in this study is lower than those conducted in India (92.8%) (Kumar *et al.* 2015) ; Pakistan (85%) (Haseeb and Bilal 2016); Yemeni (85%) (Mojali *et al.* 2015) ; Latin American immigrants (77.4%) (Gonzalez *et al.* 2012) ; Kenya (76.9%) (Owour 2015) ; Latin American immigrants in Seville, Spain 77.4% (Gonzalez-Lopez *et al.* 2012) ; Italy 69.2% (Garofalo *et al.* 2015). Compared to the previously reported prevalence in other Egyptian studies. Our study revealed a lower prevalence of self-medication as a study among the general population in El-Minia, Egypt showed a higher prevalence (73%) (Ghazawy *et al.* 2017). Another cross-sectional study in Ismailia, Egypt .. prevalence of self-medication among the study sample had reached 96% (Zeid *et al.* 2020). And according to The study in a family health center in, Menoufia governorate, About (72%) of the attendants were taking self-medication (Farahat *et al.* 2016). The variations in the reported prevalence can be explained by the difference characteristics of populations across different studies, due to the varying nature of definitions used, recall period considered, region selected and

methodology adopted, the role of country culture, healthcare systems and the perceived role of health professionals (Mathewos *et al.* 2021).

### 2 Factors associated with Self-Medication

Data from the present study showed that age, monthly income, educational level , religion and number of family members had significant association with self-medication practice. This finding is consistent with studies conducted in Brazil which reported that the prevalence of self-medication in the Brazilian population had significant association with age ( $p < 0.001$ ) and Education ( $< 0.001$ ) (Arrais *et al.* 2016). Also this is similar to cross sectional study which was performed in Iran which had shown that there was a significant correlation between self- medication and education level ( $p=.008$ ), Marital status ( $p=0.002$ ), and medical insurance ( $p=0.001$ ) variables (Jafari *et al.* 2015). In Italy a self-medication were higher in females (75.9%) (Garofalo *et al.* 2015). Globally, the association between education and self-medication has been in debate. People's health-seeking behavior is influenced by their educational level; self-medication was found to be more common among those with a primary educational level in our study. Unsimilarly, Kaushal *et al.* demonstrated that the prevalence of self-medication was higher among well- educated people (53%) compared to illiterate or low-educated people (Kaushal *et al.* 2012) . It is worth noticing that Female respondents in our results were more likely to practice self-medication than males. Possible explanations for the increasing practice of self-medication among females take account of the fact that they have large social duties, they are more firmly self-care oriented than males and are more actively involved in household activities, making them less likely to seek other medical services (Papakosta *et al.* 2014). However, contradicting literature highlighted that men self-medicate more than women were found in South Karnakata , Self-medication was high in male (82.76%) than female (72.87%) (Nagarajaiah *et al.* 2016). We

found that Self-medication was higher among married attendants., this is unlike the results in community based cross-sectional study which was conducted among households at Gondar town, Northwest Ethiopia which indicated that the odds of SMPs among unmarried participants were 3.12 times higher than the odds of married participants (Jember *et al.*, 2019) and different from the finding in India as the practice of self-medication was found to be high among unmarried individuals (51%) (Divya *et al.* 2016). In the current study, there was a significant difference between the self-medication and non-self-medication groups in terms of the type of health insurance they had, which is consistent with other research in Vietnam that found health insurance to be an important associated factor of self-medication., a higher number of family members with health insurance was associated with a decreased likelihood of self-medication (OR=0.82,  $p<0.01$ ) (Hoai *et al.* 2017). The lack of medical insurance increases the chance of self-medication because people without medical insurance preferred to purchase pharmaceuticals directly from pharmacies due to the high fees of medical appointments. This result might indicate a need for public insurance for all people in the community (Karimy *et al.* 2019). This was On contrary, with study conducted by Widayati *et al.* who reported that Indonesian who had perceived access to health care (having insurance) were 1.47 times more likely to self medicate than those who reported not having insurance (OR = 1.47) (Widayati *et al.* 2011) and study conducted by Sarahroodi *et al.* who reported no statistically significant difference between self-medication and having or not having medical insurance (Sarahroodi *et al.* 2012)

### 3 Common complaints and reasons for using Self-Medication

The results of many studies have pointed out that the two most commonly used drugs in self-medication were analgesics and cough or flu medicines , Kumar *et al* also observed that fever and common cold were the common complaints for which self-medication was practiced (Kumar *et al.* 2015) .Eye infection was the primary complaint for practicing self-medication in the present study, this finding different from results of study conducted in, Pakistan, in which headache was the most frequently reported complaint for self-medication (Haseeb and Bilal 2016) . Research conducted in Alexandria., Egypt found that the most common reasons was a minor illness not need consultation (44.5%), followed by past experience with the treatment (31%), and (24 %) stated for other reasons (Sallam *et al.* 2009). Another study Revealed that long wait at clinics

(31.6%), mild nature of the illness (27.56%) and financial problems (17.35%) were most common reasons for adopting self-medication among Indian population (Swetha and Usha 2016) . Similar observations were reported in another study in which respondents reported that the reasons for practicing self-medication were their perception that the illness is minor (79.1%) and previous experience or knowledge about the disease and treatment (46.6%) (Jawahir and Aziz 2017).

### 4 Antimicrobial Self-Medication

Self-medication with antibiotics (SMA) is considered one chief factor driving inappropriate utilization of antibiotics which is closely related to the emergence of antimicrobial-resistant strains (Auta *et al.* 2019). The practices of SMA are reported to be considerably high with European countries recording highest rates within the southern Europe countries such as Greece (20%), Romania (16%), and (14%) for Cyprus. In contrast, other European countries such as Sweden (2%) and Slovakia (3%) have the lowest rates (Lescure *et al.* 2018). Yet, a recent systematic scoping review of 31 studies conducted in the USA reported frequent practices of SMA were the prevalence of non-prescription antibiotic use varied from 1% to 66% (Grigoryan *et al.* 2006). Moreover, the statistics for SMA in Africa ranges from 24% to 76% with Northern Nigeria at 50.3%, Sierra Leone 68.9%, Ghana 70%, Uganda 65.1%, and Sudan at 76% (Owour *et al.* 2015). Approximately 64% of the studied population used antibiotics without prescription (El-Hawy *et al.* 2017)., This is similar to our study. , but this was lower than other Egyptian study, About 71% of the responders use antibiotics without consulting the physician (Maraghy *et al.* 2016). Lower prevalence was reported from study in Saudi Arabia in which only 10.9% of the contributors reported self-prescription of antibiotics, 5.2% reported pharmacist consultation, 5.4% reported family member advice and 78.5% reported the doctor's prescription as a source of antibiotics using (Alanazi *et al.* 2021).

### Conclusion

The concept of self-medication encourages an individual to look after minor illnesses with simple and effective remedies which has been adopted worldwide. The increase in self-medication attributed to a number of factors such as socio- economic factors, lifestyle, ready access to drugs, the increased potential to manage certain ailments through self-care, and greater availability of medicinal goods in the market. The patient serenity with the healthcare

provider, long waiting times, cost of the drugs, educational level, age, and gender are the other important factors influences self-medication. One of the most common reasons for indulging in self-medication includes high-cost fees of private doctor's consultations. The condition is worst in rural or distant corners, where the people are deprived socially, economically, with inadequate health facilities. The patient's evaluation of his illness has been minor also identified as one of the major factors for self-medication. Although, OTC drugs are intended to be used as self-medication and are of established efficacy and safety but their inappropriate use due to lack of knowledge of their side effects and drug interactions could have a serious consequence.

### Recommendations

After what we found in this study about assessment of self-medication practices of participants about self-medication, we recommend that: There is a need to improve population knowledge about drugs and promote healthier practices through health Education.

This requires a multi sectorial effort. Mass media can also play an important role in disseminating the appropriate information to the general public. Stringent laws should be enforced by the governments that prohibit the availability of drugs especially antibiotics as over the counter drugs. Also, pharmacist should be encouraged to give only the amount of antibiotics as mentioned in the prescription and not as per pack sizes. Health professionals can play a vital role by educating people about the potential risks of self-medication as people are more likely to trust and consider their therapeutic advice and medical knowledge. Increase awareness and education regarding implications of self-medication, enforcing strict rules regarding misleading pharmaceutical advertising, working towards making health care facilities easily available, Availability of health care provider, Control toward rational diagnostic tests, Control of prescriber's consultation and laboratory tests fee.

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## التطبيق الذاتي بين المشرفين على وحدات صحة الأسرة بمديرية صحة سوهاج

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### الملخص العربي:

التطبيق الذاتي هو مصدر قلق خطير للصحة العامة ، إنه ممارسة منتشرة في جميع أنحاء العالم في كل من الدول المتقدمة والنامية. ممارسات التطبيق الذاتي عرضة بشدة للاستخدام غير الملائم ولها عيوبها الخاصة مما يؤدي إلى هدر الموارد وزيادة مسببات الأمراض المقاومة للأدوية.

### الهدف من الدراسة:

هو الكشف عن مدى انتشار العلاج الذاتي بين القائمين على ثلاث وحدات صحية للأسرة بمديرية سوهاج والتعرف على محددات المشاركين الذين يمارسون العلاج الذاتي. هذه دراسة مقطعية. كان السكان الذين تمت دراستهم في هذه الدراسة مراقبون لثلاث وحدات صحية للأسرة في مديرية سوهاج (ادفين - الهجارس - بالصفر) خلال الفترة من ١ سبتمبر ٢٠١٩ حتى ٣١ مارس ٢٠٢٠. خلال فترة الدراسة ، تم تضمين ٤٠٠ مشارك. من بين السكان المدروسين ، تم تحديد ٢٢٨ حالة (٥٧٪) لممارسة التطبيق الذاتي وستعتبر المجموعة الأولى. المجموعة الثانية ضمت ١٧٢ (٤٣٪) غير مؤكدة لممارسة التطبيق الذاتي.

شكل الطلاب وزوجات المنزل غالبية المشاركين الذين عالجوا أنفسهم بأنفسهم. كان السعر أعلى نسبة من بين الاعتبارات الأخرى التي اتخذت عند اختيار عقار التطبيق الذاتي. من بين جميع الذين عولجوا بأنفسهم بمضادات الميكروبات، كان المرض أو الحالة الأخيرة للتطبيق الذاتي ناتجة عن الحمى والتهاب العين؛ يليه سيلان الأنف ومشاكل الأسنان. تمت ممارسة الإدارة الذاتية لمضادات الميكروبات على أساس استشارة صيدلي