Public knowledge of self-medication in Ngaglik subdistrict of Sleman regency

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Original Article

ABSTRACT

Background: Self-medication is using medicines without a prescription or health professional advice. Over-the-counter (OTC) medicines are commonly used in self-medication. Knowledge and practices of self-medication is required to be assessed to ensure appropriate uses of medicines.

Objective: This study is to examine public knowledge and practices of self-medication in Subdistrict of Ngaglik, Sleman, D.I. Yogyakarta.

Methods: A cross-sectional survey was conducted in three villages in Ngaglik, Sleman. 339 participants were selected through a cluster sampling. Data were collected by using a self-administered questionnaire. Descriptive analysis and chi-square test were used to analyse the data.

Results: Most of participants were female (61.7%) aged between 26-45 years (49.9%). More than fifty percent of participants (59%) had education level of senior high school, and 49.9% participants had good knowledge of the OTC self-medication. The level of knowledge of self-medication was significantly associated with the level of education (p values<0.05). The most commonly used OTC medicines for self-medication were analgesics and antipyretics (48.4%), respiratory drugs (29.7%), and gastrointestinal drugs (9.6%). OTC medicine advertisements were common sources of information about medicines for self-medication (39.5%) whereas information sources from health professionals were accounted for only 2.4%.

Conclusion: The public knowledge of self-medication needs to be developed. Health professionals, especially pharmacists, are suggested to provide more information on the OTC medicines for public to allow them to access additional information sources than medicine advertisements.

Latar Belakang: Pengobatan sendiri atau swamedikasi adalah penggunaan obat tanpa resep dokter. Golongan obat bebas dan bebas terbatas merupakan obat yang paling sering digunakan untuk swamedikasi. Pengukuran pengetahuan masyarakat tentang swamedikasi penting dilakukan untuk menjamin penggunaan obat yang tepat.

Tujuan: Penelitian ini bertujuan untuk mengetahui tingkat pengetahuan dan perilaku masyarakat tentang swamedikasi di Kecamatan Ngaglik, Kabupaten Sleman.

Metode: Penelitian cross-sectional dilakukan di 3 desa di Kecamatan Ngaglik, Kabupaten Sleman. Jumlah responden sebanyak 339 yang dipilih menggunakan metode cluster sampling. Data diperoleh dari pembagian kuesioner yang telah tervalidasi kepada responden. Analisis data menggunakan analisis despriktif dan uji chi-square.

Hasil: *Mayoritas peserta adalah perempuan (61,7%) dan berusia 26-45 tahun (49,9%). Lebih dari lima puluh persen responden (59%) berpendidikan SMA. Persentase responden yang memiliki tingkat pengetahuan baik tentang swamedikasi (49,9%). Pengetahuan tentang swamedikasi berhubungan dengan tingkat pendidikan (p<0,005). Obat yang sering digunakan untuk swamedikasi adalah analgetik dan antipiretik (48,4%), obat saluran pernafasan (29,7%), dan obat pencernaan (9,6%). Responden paling banyak mendapatkan informasi tentang obat untuk swamedikasi dari iklan obat, sedangkan yang mendapatkan informasi dari tenaga kesehatan hanya 2,4%.*

Kesimpulan: *Pengetahuan masyarakat tentang swamedikasi masih perlu ditingkatkan. Tenaga kesehatan, terutama apoteker, harus lebih pro-aktif memberikan informasi kepada masyarakat terkait obat-obat yang digunakan oleh masyarakat.*

INTRODUCTION

Self-medication is one of the self-care practices using non-prescription medicines commonly practiced by the public as an effort to maintain their health. Basic health research of 2013 showed that 35.2% households in Indonesia kept medicines at home for self-medication.[1] Meanwhile, 85% of them did not have appropriate knowledge of generic medicines. Based on Widayati's research in 2011, 44% people in Yogyakarta Special Province practiced self-medication for some reasons, such as previous successful self-medication, minor illness perception, time saving, and money saving.[2] Self-medication is defined as the selection and use of medicines by individuals to treat self-recognized diseases or symptoms without prior medical consultation.[3] Some people choose self-medication by seeking OTC (Over The Counter) medicines to relieve symptoms.[4]

Self-medication requires a certain level of knowledge of medicines since it carries the risks of socioeconomic and individual health status. Self-medication may result in adverse drug events that require medical intervention.[5] There were 1.3% people experiencing adverse drug events while practicing self-medication,

and three out of four were reported as severe.[6] Inappropriate self-medication can increase the risk of drug misuse and delay in obtaining medical intervention due to the masking of some symptoms.[7] Self-medication has an association with levels of education. Lacking knowledge of self-medication can lead to inappropriate self-medication that harms an individual's health status.[8] The research about community knowledge on drug storage and disposal is limited, especially in Indonesia, so that we conducted the study about self-medication, include how to get, how to use, the storage, and the disposal of medicines. The objective of this study was to investigate the public knowledge and practices of self-medication in Ngaglik Subdistrict of Sleman Regency.

METHODS
Study design

A cross-sectional study was conducted in 3 villages in Ngaglik Subdistrict of Sleman Regency. This study was approved by the Medical and Health Research Ethics Committee (MHREC) of the Faculty of Medicine Gadjah Mada University number KE/FK/0641/EC/2018.

Sample size

A total of 339 participants were selected using the clustered random sampling method. The inclusion criteria were individuals aged 18-65 years old who agreed to fill out the inform consent and have used OTC medicines for a minimum of one month. Healthcare professionals were excluded from the study. The participants became the representative of each household visited by the researcher.

Study setting

A structured questionnaire was developed upon completing the literature review, consisting of three sections of sociodemographic characteristics, OTC self-medication knowledge, and self-medication practices. The knowledge section contained 4 domains, including how to get, how to use, the storage, and the disposal

of medicines. In addition, the self-medication behavior questions included the most commonly used medicines for self-medication and the source of information about OTC medicines. Content validity was done to ensure the questionnaire validity. The questionnaire was also distributed to 30 respondents who met the inclusion criteria for a pilot study to confirm the validity and reliability. Some of the wording was modified in a number of questions to achieve high consistency and reliability (Cronbach's alpha = 0.84).

The data were collected through a self-administered questionnaire. Only one person could be the participant from each household. The aims of this study and confidentiality were explained to the participants, and they should fill out the questionnaire on the spot accompanied by the researcher or facilitator.

Data analysis

A descriptive analysis and chi-square test were performed to analyze the data. The knowledge questions had two responses ("yes" and "no"). Each response was scored for data analysis where score 1 was given to correct answer and score 0 was for incorrect answer. The level of knowledge was categorized based on mean cumulative score ($\bar{x}$ = 12.17). Participants who had a cumulative score equal or above the mean score were categorized into "good knowledge", whereas those with a cumulative score below the mean score was considered in "poor knowledge". Chi-square test was used to analyze the association between level of knowledge and socio-demographic characteristics ($p<0.05$).

RESULTS

Demographic characteristics

The total number of participants in this study was 339 respondents, and most of them were female (61.7%) with only 38.3% male. The age distribution was 17-25 years (22.7%), 26-45 years (49.9%), and 46-65 years (27.4%). More than fifty percent participants (59.0%) attended senior high school, and the rest attained the highest level in university (18.9%), junior high school (13.3%), and elementary school (8.8%).

Participant's practices of self-medication

All of the participants in this study used OTC medicines for self-medication. A total of 202 participants (48.4%) used analgesics and antipyretics for self-medication, followed by respiratory drugs taken by 124 participants (29.7%). The other medicines included gastrointestinal medicines (40 participants/9.6%), herbal preparation (33 people/7.9%), and anti-allergic drugs (4 people/1%). The analgesics and antipyretics were most likely used to treat headache and fever with paracetamol as the most commonly used medicine. The sources of information about OTC medicines came from advertisements (39.5%), family (23.6%), friends (18.3%), references (2.4%), healthcare professionals (2.4%), and others (13.9%).

Knowledge of self-medication

The level of knowledge of OTC medicines for self-medication is explained in Table 1. Overall, 49.9% participants had good knowledge whereas 50.1% had poor knowledge. There was a correlation between knowledge and level of education ($p<0.05$), while gender, age, and occupation had no relationships with knowledge ($p>0.05$) (Table 2).

DISCUSSION

This study revealed that analgesics and antipyretics were the most commonly used in OTC self-medication practices followed by respiratory drugs. Other studies showed a similar result in that the majority of people used paracetamol to treat headache and fever, whereas respiratory drugs were for treating common cold.[9–11] The primary source of information about the medicines used for self-medication was medicine advertisements while only a few participants sought information from pharmacists. This result contradicted a study in Taiwan which found that pharmacists became the primary source of information on medicines.[7]

Table 1. Percentage of correct response about knowledge of self-medication

Questions domain	Correct response from participants	
	Frequency	Percentage (%)
How to get medicines		
All medicines can be bought in a supermarket	279	82.3
We can get medicines from family or friends	270	79.6
Antibiotics can be bought in a supermarket	262	77.3
The use of medicines		
Paracetamol is used for fever only	143	42.2
The meaning of twice daily is taking medicines in the morning and afternoon	61	18
Syrup is allowed to be used anytime as long as its physical appearance does not change	226	66.7
Sore throat is treated using mucolytics	184	54.3
Povidone iodine is used to treat wound before it is cleaned	253	74.6
Eye-drop medicines can be directly dripped on the cornea	125	36.9
Medicine storage		
Suppositories are stored in the medicine cabinet	245	72.3
All OTC medicines can be stored in the refrigerator	238	70.2
Medicines can be stored in a non-original packaging	289	85.3
Eye drops can be stored for more than one month after opening the seal	210	61.9
Liquid dosage form medicines are stored in the refrigerator to maintain their stability	162	47.8
Medicine disposal		
Medicines must be removed from the packaging at the time of disposal	200	59.0
Liquid medicines in the package can be directly disposed of in the trashcan	189	55.8
All expired medicines can be disposed of in the trashcan	141	41.6
Drug packaging in a cardboard form must be cut before disposal	226	66.7
Tablets must be crushed before disposal	205	60.5
Tablets are disposed by being buried in the ground	218	64.3

*Total number of participants: 339 respondents

Most of the participants already had good knowledge of the place for getting OTC medicines. More than half bought OTC medicines from a pharmacy (74.6%), and others went to a drug store and supermarket. The source to obtain drugs for self-medication was the same as that revealed in a study in Purbalingga and systematic review by Limaye et al. in which most of the respondents purchased medicines at the pharmacy.[12,13] The public should be more encouraged to buy medicines at the pharmacy to ensure that the medicines are of good quality and the public receives information about medicines from pharmacists.

The knowledge of medicine use among the community members in Ngaglik should be

Table 2. Correlation between sociodemographic characteristics and knowledge of self-medication

Sociodemographic characteristic	Knowledge score	Self-medication knowledge level		Total	P-value
	Mean ± SD	Good	Poor		
Gender					
Male	12.23 ± 3.39	62 (47.7)	68 (52.3)	130 (100)	0.606
Female	12.13 ± 3.17	107 (51.2)	102 (48.8)	209 (100)	
Years of age					
18 - 36	12.19 ± 3.09	84 (49.4)	86 (50.6)	170 (100)	0.957
37 - 65	12.15 ± 3.42	85 (50.3)	84 (49.7)	169 (100)	
Educational attainment					
Lower than Senior High School	11.12 ± 3.37	26 (34.7)	49 (65.3)	75 (100)	0.004*
Senior High School and University	12.47 ± 3.17	143 (54.2)	121 (45.8)	264 (100)	
Occupation					
Employed	12.11 ± 3.33	98 (49.5)	100 (50.5)	198 (100)	0.963
Unemployed	12.25 ± 3.14	71 (50.4)	70 (49.6)	141 (100)	

*Significant value: p<0,05

improved. Most of them did not understand that paracetamol is not only for fever but also for pain treatment. A study in India showed a similar result in that only 6.8% participants had good knowledge of paracetamol use.[14] Moreover, only 18% participants gave correct response about the time to administer medicines. This has to be an essential concern since the appropriate time of medicine administration is correlated with the dosage.[15] Medicine indications, interactions, side effects, and other information must be clearly understood for the efficacy and safety of OTC self-medication. Therefore, health professionals, especially pharmacists, should provide medicine information for patients or community members about how to practice self-medication appropriately and the impacts if it is not done properly, thereby improving health literacy.

A qualitative study found that it is a challenge for a pharmacist with limited time has to communicate with the patient through simplified information. In the population with low health literacy, they will not necessarily self-identify and sidestep to the pharmacy. The-effective pharmacist interventions require to inquire patients in their neighborhood, for example, pharmacy home visits or community groups.[16] Besides, Manchanayake et al, showed that most-often the pharmacist assumed that patients are adequate to read and recognize dosing directions, but the study points out that several dosing directions were misread or misunderstood. They suggested the need for dosing directions standard and advised pharmacists to give the medication information to the patients considering their demographics such as age, education level, functional and language barriers.[17]

Medicine storage and disposal are also essential to be understood by the public practicing self-medication. The participants still had a lack of knowledge of liquid dosage form and eye drops storage. More than 50% participants thought that all liquid dosage form could be stored in the refrigerator. A study in Taiwan also found that some people believed that all types of medicine could be stored in the refrigerator.[7] Furthermore, the knowledge of medicine disposal should be improved because inappropriate medicine disposal will lead to pollution, thus putting the public at risk.[18,19]

The participants' knowledge of self-medication can be affected by sociodemographic

characteristics.[20] In this study, the knowledge was significantly associated with level of education. The highest score of knowledge was achieved by the participants who had a university background. Previous studies revealed the relationship between education and knowledge.[20-22] People with higher education are more likely to access different sources of information compared to those with low education attainment.[20]

Strengths and limitations of the study

This study has the strength of the topic of knowledge measurement. It measured not only the knowledge of how to use OTC but also that of how to get, how to store, and how to dispose OTC medicines used in self-medication. The limitation of the study, on the other hand, is caused by the lack of funding. The area of the study only covered 3 villages in Ngaglik Subdistrict while it would be far better if the study was carried out over a wider area.

CONCLUSION

The public knowledge of self-medication still needs improving. Health professionals, pharmacists, in particular, should give more information to the public about OTC medicines to prevent them from obtaining information only from medicine advertisements. The interventions could be direct to the patient with provided clear medication information, or through the community groups. A quasi-experimental study is required for future research to investigate the improvement in the knowledge among participants after receiving education intervention using a pre-test and post-test.

CONFLICT OF INTEREST

Theres is no conflict of interest in this study.

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