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Knowledge Level of OTC and OTC Limited Drugs Use for Self-medication in the Community of Tondo Village, Mantikulore District, Central Sulawesi, Indonesia

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Abstract: Self-medication is treatment without a doctor's prescription. Based on the Indonesia Central Bureau of Statistics (2022), the percentage of self-medication for the people of Central Sulawesi in 2021 is 85.85%. Without the right knowledge, self-medication can have a bad impact, even causing death. The purpose of the study was to determine the community characteristics who did self-medication, minor illnesses that were treated with self-medication, the profile of over-the-counter (OTC) and OTC limited medicines for self-medication, and the level of knowledge of these medicines use for self-medication in the community of Tondo Village. This type of research was descriptive with a sample of 386 respondents who were taken using purposive sampling. Time of data collection during August – November 2021. Based on the results, the respondent's characteristics were female (52.3%) aged 26-35 (24.4%), household work (31.1%), history of high school education (46.4%). Minor illnesses that were treated by self-medication were fever (15.54%), ulcer (7.46%), cough (15.54%), flu (18.91%), diarrhea (2.85%), headache (1 .30%), and allergy (0.78%). The profiles of OTC and OTC limited drugs are limited to paracetamol for fever (33.16%), antacids for ulcers (75.70%), Komix® for coughs (28.8%), Mixagrib® for flu (36.99%), Entrostop® for diarrhea (70,00%), Ibuprofen for headaches (100%), and CTM for allergies (100%). Percentage of drugs purchased in pharmacy or drug store was 61.46%. The selection of drugs was based on experience and personal/family usage history (84.46%), and the reason for self-medication was to save treatment costs (47.15%). The level of knowledge on the use of OTC and OTC limited drugs was categorized as good (75.09%). Based on the findings, we can conclude that the level of knowledge on the use of OTC and OTC limited drugs for self-medication of Tondo people is categorized as good.

Keywords: Over-the-counter medicine (OTC); Self-medication; Drug use knowledge

1. Introduction

Self-medication usually done by the community. This means that if they have to go to a hospital or practice doctor, the patient will be charged for diagnosis and drug costs, thus making the basic reason why many people still carry out self-medication without scientific evidence (1).

The act of self-medication in using over-the-counter (OTC) and OTC limited medicines is based on several considerations, including being easy to do, easy to get, not as expensive as going to the hospital, although they know that the drugs they used only treat the symptoms of the disease. Self-medication can be risky if it is carried out

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continuously for the treatment of diseases that are not healed. People generally don't realize that OTC drugs and limited OTC drugs that they consume can cause adverse side effects to the body. Some drugs that are used freely with self-determined doses are not as safe as drugs with a doctor's prescription. Therefore, when a person consumes OTC and OTC limited drugs that are not in accordance with the recommended dosage, it will cause side effects, other adverse reactions, or poisoning (2)

A number of neighborhood units (*Rukun Tetangga*) in Indonesia that store drugs for self-medication are 103,860 or 35.2%, with the highest percentage being in DKI Jakarta as much as 56.4%. The lowest occurrences (17.2%) are in East Nusa Tenggara (NTT). On average, there are 3 kinds of drugs stored by the people. It was found that 35.2% of households stored OTC drugs, 35.7% of households stored prescription drugs, and 27.8% of households stored antibiotics. The discovery of several prescription drugs and classes of antibiotics for self-medication means that many people still use drugs irrationally. It was found that 81.9% of households in Indonesia used and stored prescription drugs and 86.1% of households in Indonesia stored antibiotics without a doctor's prescription. Drugs can be grouped into several statuses, namely drugs that are 'currently being used' (32%), drugs that are stored 'for stock' (47.0%), and the rest from previous drug use 'leftover drugs' (42.2%). Indonesia government has recommended to throw away the residual of previous use drugs because it can lead to misuse (misused) or expired (3)

Based on data from the Indonesia Central Bureau of Statistics (BPS) regarding self-medication carried out by the Indonesian population, people who did self-medication were 69.43% in 2017, and continuously increases to 70.74% in 2018, and 71.46% in 2019. Meanwhile, the percentage of self-medication in Central Sulawesi was 77.97% in 2017, 73.93% in 2018, 75.45% in 2019, 76.2% in 2020, and 85.85% in 2021 (Indonesia Central Bureau of Statistics, 2022). Based on observations made in 10 pharmacies in the Tondo, Mantikulore, Central Sulawesi, almost all people buy drugs without using a doctor's prescription. Therefore, this study was aimed to determine the knowledge level of the community of Tondo in using of OTC and OTC limited drugs for self-medication.

2. Methodology

This study is an observational descriptive research using a questionnaire with a cross sectional approach that met the inclusion and exclusion criteria. The questionnaire format can be seen on the Supplemental Data.

2.1 Time and Place

The research was carried out in the Tondo Village, Mantikulore District, Central Sulawesi. This research was held in August – November 2021.

2.2 Sample and Population

The population of this study were all Tondo people who had self-medication and had met the inclusion and exclusion criteria. The inclusion criteria were people who have done self-medication using OTC or OTC limited medicines, have no mental disorders, were willing to fill out questionnaires, and aged between 18-65 years. The exclusion criteria were incomplete questionnaire data.

3. Results and Discussion

The number of samples collected was 386 respondents with complete questionnaire data (see Table 1). Respondents aged between 18-65 years with a history of education ‘did not go to school’ to undergraduate. This demonstrates that the sample employed was homogenous, making it indicative of the public's level of understanding in self-medication.

According to Table 1, self-medication responders ranged in age from 26 to 45 years. They were confident in self-medication because of previous experience (4). Pain symptoms become more common with age, and there are risk factors for the development of degenerative illnesses in old life (5). Furthermore, individuals in this age group are eager to make initiatives to heal themselves (6). Figure 1 depicts the fraction of disorders that are frequently treated independently.

Table 1. Respondents' characteristics.

Parameters	Number (n = 386)	Percentage
Age (year)		
18 – 25	84	21.8%
26 – 35	94	24.4%
36 – 45	90	23.3%
46 – 55	77	19.9%
56 – 65	41	10.6%
Gender		
Female	202	52.3%
Male	184	47.7%
Job		
Retired	1	0.3%
Government employees	6	1.6%
Entrepreneur	108	28.0%
Private employees	25	6.5%
Housewife	120	31.1%
Student	53	13.7%
Laborer	10	2.6%
Driver	7	1.8%
Farmer	40	10.4%
Honorer	12	3.1%
Security	1	0.3%
Blacksmith	1	0.3%
Bricklayer	2	0.5%
Education		
Unschooled	4	1.0%
Elementary school	117	30.3%
Junior high school	69	17.9%
Senior high school	179	46.4%
Undergraduate	17	4.4%

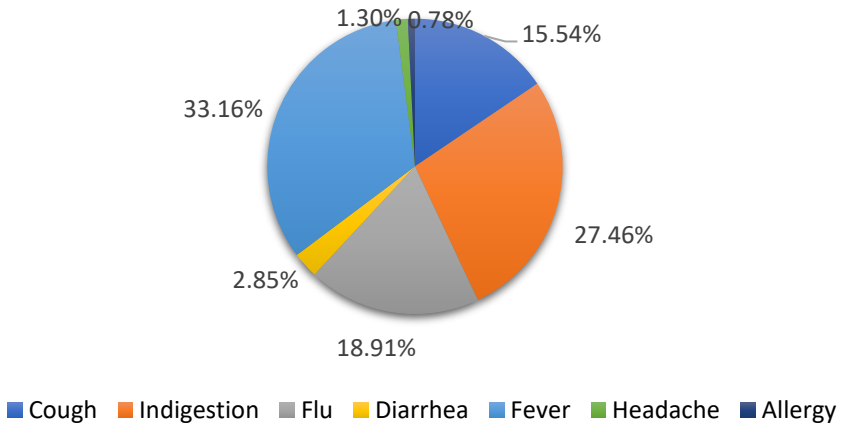

Figure 1. Common diseases treated through self-medication.

Based on the results in Figure 1, it can be seen that most of the people carry out self-medication in dealing with fever, followed by ulcers. According to Barbi et al (2017), fever is one of the most common signs of illness (7). According to Taribuka et al, also stated that fever was the reason behind 15-25% of patient visits at health care facilities or emergency units (8). Meanwhile, gastritis is a functional disorder that usually occurs due to excessive gastric acid

production and lack of mucus production (1). As said before, responses range in age from 18 to 65, a productive time that is typically more stressful due to job. Ulcers can also be induced by other causes such as irregular eating patterns, the intake of coffee, tea, cola, alcohol, and spicy foods, and stress (9).

Table 2. Type of medicines used by Tondo people in self-medication.

No	Medicines	Number (n = 386)	Percentage
1.	**Cough**		
	Komix®	17	28.8%
	Vicks®	11	18.6%
	Konidin®	6	10.2%
	Bodrex®	7	11.9%
	Siladex®	11	18.6%
	Bisolvon®	3	5.1%
	Paramex®	1	1.7%
	Dextromethorpen	1	1.7%
	Woods®	2	3.4%
2.	**Maag**		
	Antasida	81	75.7%
	Promag®	15	14.0%
	Mylanta®	11	10.3%
3.	**Flu**		
	Procold®	13	17.8%
	Panadol®	18	24.7%
	Mixagrib®	27	37.0%
	Demacolin®	5	6.8%
	Paramex®	5	6.8%
	Decolgen®	5	6.8%
4.	**Diare**		
	Diatabs®	1	10.0%
	Entrostop®	7	70.0%
	Diaform®	2	20.0%
5.	**Fever**		
	Paracetamol	115	89.1%
	Sanmol®	14	10.9%
6.	**Headache**		
	Ibuprofen	6	100.0%
7.	**Allergy**		
	CTM	2	100.0%

According to Table 2, Komix® led the medications used for cough self-medication by as many as 17 persons with a proportion of 28.81%. This is because Komix® is reasonably priced, easy to procure, and simple to use. Komix® includes dextromethorphan as a cough suppressant, which is the most extensively used due to its availability, effectiveness, and safety profile when taken at a prescribed dosage (10). Antacids were the most often used for stomach ulcers. According to Ulfa (2016), antacids are drugs that can neutralize acid in the stomach and are not absorbed into the body so they are quite safe to use (at recommended dosage) (11). For flu symptoms, self-medication is dominated by Mixagrib®. This is because Mixagrib has a relatively cheap price and is easy to obtain. In addition, Mixagrib® also contains phenylefin which is a decongestant group that has a mechanism of action through vasoconstriction of nasal blood vessels, thereby reducing secretion and swelling of the mucous membranes of the nasal passages and helping to open nasal obstructions (12). For diarrhea, the people of Tondo often use Entrostop®. This is because Entrostop® is relatively safe for consumption by children, pregnant women and breastfeeding mothers. According to Sholekhudin (2014), Entrostop® belongs to the class of adsorbents that work by binding to germs or toxins in the gastrointestinal

tract (13). On the symptoms of fever, it can be seen that the drugs that are often used for self-medication are dominated by generic paracetamol followed by sanmol. As is known that sanmol itself is a drug that contains paracetamol as well. Paracetamol is widely used and relatively easy to find in drug stores and pharmacies. This is in accordance with research conducted by Aqeel T., et al. (2014), which states that the analgesic drug class is widely used in self-medication, especially paracetamol, by 42.8% (14). Ibuprofen is the drug most often used to relieve headaches. According to Fokunang, et al. (2018), Ibuprofen is one of the three most commonly used NSAIDs besides naproxen and aspirin (14). As for allergies, it can be seen that the drug used for self-medication is Chlorpheniramine or commonly abbreviated as CTM. According to Hano et al. (2015), Chlorpheniramine Maleate is an H1 antihistamine drug that is often used as a drug of first choice to prevent or treat symptoms of allergic reactions (15).

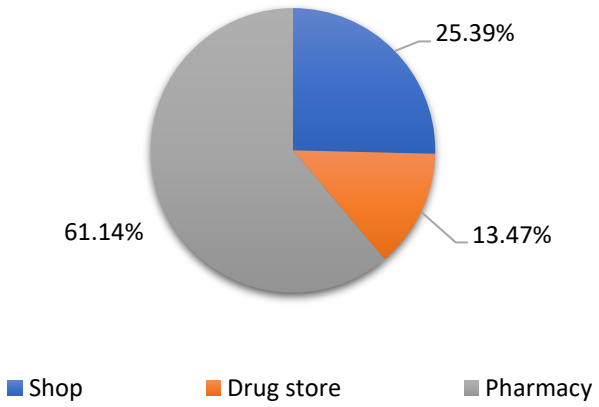

Figure 2. Place to purchase the medicines.

Pharmacies are the most common places to purchase drugs for self-medication. As is well known, pharmacies are pharmaceutical service facilities where pharmacists practice. Tondo has 17 pharmacies, making it easier for consumers to access and purchase medications. A professional pharmacist must oversee the operation of the pharmacy (16). People trust pharmacists more when it comes to medicine purchases, based on the amount of people who shop at pharmacies. Another factor might be because pharmacists provide comprehensive medication information (17). Furthermore, respondents feel that pharmaceuticals supplied in pharmacies are of higher quality (18).

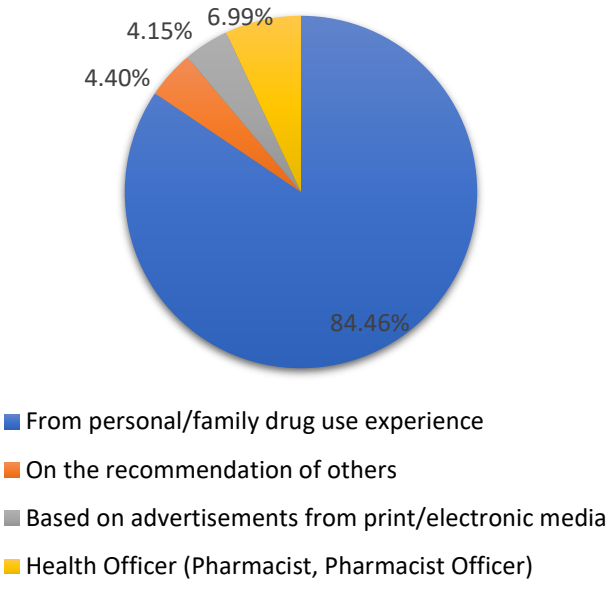

Figure 3. Factors affecting drug selection.

Based on Figure 3, the most common reason for doing self-medication is experience in using the drug, either personally or from the family. This is in accordance with the results of research by Andika, CR & Lestari (2020) regarding information sourced from family and relatives which is very high compared to treatment information from other sources (19). Respondents believe that the pharmaceuticals used by their family will have the same therapeutic impact on them

(18). Furthermore, the effect of the family happens indirectly through the behaviours of other family members in carrying out their own treatment, whether from the sort of medicine used or how it is consumed. Other indirect impacts may emerge as a result of the family providing medicine at home, which will be utilized by family members if someone has a health concern. As a result, one family has a propensity to use the same type/brand of drugs for the same health issues.

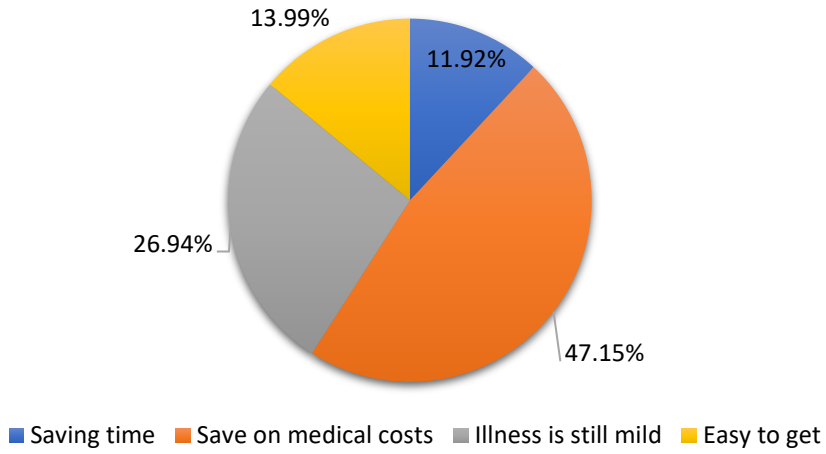

Figure 4. Reason for self-medication.

Figure 4 shows that the majority of respondents preferred to self-medicate in order to save money on medical bills. This occurs because individuals believe that hospital treatment would be provided with additional expense. Furthermore, the use of BPJS must go through a time-consuming process. Furthermore, the second most common explanation given by respondents was that the disease was still mild. This occurs because individuals believe that mild ailments do not require medical attention since the self-medications, they are receiving is enough. Self-medication services are projected to be the primary service in the community for the treatment of minor ailments. This is consistent with the viewpoint of Ilmi, T. et al (2021), who argue that economic difficulties are one of elements associated to the practice of self-medication (5).

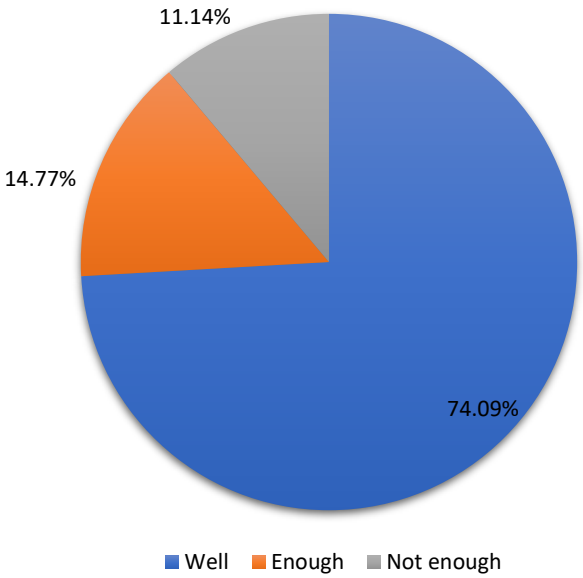

Figure 5. Level of knowledge in using OTC and OTC limited.

According to Figure 5, the majority of Tondo residents are knowledgeable of self-medication. This is complemented by detailed indication and usage information visible on the package, making self-medication easy for the general population. Furthermore, the age level of respondents, which is dominated by adults with a high school or similar education background, might make it simpler for individuals to comprehend and apply information, whether it is gained from other people, electronic media, or health education. According to Notoatmodjo (2012) in his book Health Promotion and Health Behavior, education influences the learning process; the better a person's education, the simpler it is for that person to acquire knowledge (20). According to Ukkas (2017), the productive age range is 15-50 years (21). People of this generation can swiftly adapt to, comprehend, and apply technology, and their horizons are wider than

those of non-productive ages. Furthermore, the questionnaire answers suggest that the majority of respondents are well-versed on the classification of drugs, their usage, and how to utilize them. Respondents can recognize the symbol or label on drug packaging for both OTC and OTC limited medicines. OTC pharmaceuticals have a green circle with a black border, whereas OTC limited drugs have a blue circle with a black border (22). Furthermore, responders can clearly grasp the drug's advised use on the container (23).

4. Conclusion

Tondo residents whose self-medicate are between the ages of 26 - 35, mostly female (53.3%), a housewife (31.1%), and have completed high school (46.4%). Fever (33.16%), ulcer (27.46%), cough (15.54%), flu (18.91%), diarrhea (2.85%), headache (1.30%), and allergies were the most often self-medicated diseases or symptoms. OTC and OTC limited drugs used for self-medication include paracetamol (33.16%), antacids (75.70%), Komix® for cough (28.8%), Mixagrib® for flu (36.99%), Entrostop® for diarrhea (70.00%), Ibuprofen (100%), and CTM for allergies (100%). People believe more and are prefer to get medications from pharmacies. In addition to saving money on medical bills, the most common reasons for self-medication include personal experience and a family history of usage.

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Conflict of Interest

The authors declare no conflicts of interest.

Authors contribution

Conceptualization	: Ainun Jariya; Andi Atirah Masyita; Ririen Hardani
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Supervision	: Ainun Jariya; Andi Atirah Masyita; Ririen Hardani
Administration	: Ainun Jariya; Andi Atirah Masyita; Ririen Hardani
Writing and Editing	: Ainun Jariya; Andi Atirah Masyita; Ririen Hardani

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