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Knowledge, Attitudes, and Families Practices in Selecting, Obtaining, Using, Storing, and Disposing of Medicines on Self-Medication Behavior in Indonesia

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Abstract

BACKGROUND: The irrational use of medicine in the family is a serious problem. Advances in education, economy, availability of medicines, regulations, and technology have encouraged people to self-medicate in overcoming their illness. Self-medication behavior is not only carried out by adults but also by the elderly, students, and even children. Self-medication can provide positive health benefits if done correctly starting from selecting, obtaining, using, storing, and disposing medicines. On the other hand, if self-medication measures are carried out inappropriately, they can lead to various drug-related risks.

AIM: Therefore, this study aimed to describe the knowledge, attitudes, and families practice in selecting, obtaining, using, storing, and disposing medicine and to identify the factors influence of this construct.

METHOD: The study was conducted using an analytical method with a cross-sectional approach using a questionnaire for families in Padang Pariaman Regency, West Sumatera, Indonesia, namely, in 2x11 Enam Lingkung and Sungai Garingging Districts. The total sample size obtained was 500 families. Bivariate analysis was determined using Chi-squared test and multivariate analysis was determined using linear logistic regression.

RESULTS: Data from current study found that the percentage of the average score of family knowledge of selecting, obtaining, using, storing, and disposing medicines was in a low category (57.53%), family attitudes were in the negative category (59.38%) and family actions were in the negative category (55.27%). The results of multivariate analysis using linear logistic regression showed that the sub-variables that influenced the knowledge, attitudes, and actions of families about medicines were pharmacists/doctors as the main source of information about drugs (p = 0.006), education in the category of secondary education (p = 0.002) and mothers as family members who had a major role in managing medicines (p = 0.000).

CONCLUSION: The results show that knowledge, attitudes, and practice of families about medicines are still low and very limited. Factors that influence knowledge, attitudes, and practice of families selecting, obtaining, using, storing, and disposing medicine are pharmacists/doctors as the main source of information about medicine, education, and mothers as family members who have a major role in managing medicines. The lack of knowledge, attitudes, and practice related to medicines and the important role of the family is the reason for the very importance of family-based medicines education.

Introduction

Self-medication provides positive health benefits if done properly and responsibly. Self-medication measures can help prevent and treat diseases that do not require medical consultation. Provide a cheaper alternative in treating common diseases [1], [2]. However, inappropriate self-medication can lead to the risk of misdiagnosis, wrong medication, drug abuse, adverse drug reactions or drug-related problems and increase the cost of treatment [3], [4], [5], [6], [7], [8].

People do self-medication not only for over-the-counter or limited-free medicines but also medicines that should be obtained with a doctor's prescription. The study of Widayati et al. (2011) showed that 64% of respondents in the city of Yogyakarta bought antibiotics without a prescription at pharmacies for the reason that most respondents were practical [9]. Meanwhile, the results of the study on the pattern of self-medication of antibiotics in the city of Denpasar showed that 43% of respondents had self-medicated with antibiotics. Previous experience was the main reason for using non-prescribed antibiotics [10].

Pharmacies are the most common source of self-medication medicine in several countries. This is in line with the research of Ocan et al. (2015) who stated that the main sources of antimicrobial self-medication were pharmacies (65.5%), leftover medicine (50%), and drug stores (37.5%) [5]. Another problem with self-medication is improper storage of medicine. The storage of medicine greatly affects their efficacy and contributes

to the irrational use of medicine. Research of De Bolle *et al.* (2008) stated that many medicines stored are far past their expiration date and are stored without a clear identity (such as mixed in containers without the original packaging). Furthermore, 21% of medicines stored in family medicine boxes had expired and 18% had included medicines in the wrong packaging [11].

Meanwhile, the problem of medicine disposal, both from the rest of doctor's prescriptions and self-medication, has not received serious attention from the public. Research results of Atinafu *et al.* (2014) in Ethiopia showed that 25.3% of respondents disposed of leftover medicine by burning, 14.8% disposed them into the toilet, and 14.1% disposed them in more than one way. Furthermore, 13.3% of respondents disposed leftover medicine by returning them to the nearest pharmacy, 11.7% were throwing them into the trash, 11.2% were burying them in the ground and 9.6% were disposing them in other ways [12].

Conditions in Indonesia showed an increase in the percentage of the population who self-medicate with modern medicines over the past month from 85.1% in 2002 to 90.5% in 2014 [13]. This prevalence was much higher than the situation in developed countries such as the US and countries in Europe which ranged from 8% to 14% [14]. Moreover, the results of the 2013 Basic Health Research showed that 35.7% of Indonesians stored prescription medicine and 27.8% of antibiotics for self-medication with an average of 2.9 medicines per household. Furthermore, out of 35.7% of households that kept medicines, 81.9% of households kept hard medicines that were obtained without a doctor's prescription. Likewise with antibiotics, 86.1% of households stored antibiotics without a prescription.

This study aimed to describe the knowledge, attitudes, and practice of families in choosing, obtaining, using, storing, and disposing medicine and the factors influence of these construct.

Methods

This was a cross-sectional survey conducted on families in Padang Pariaman Regency, West Sumatera, Indonesia, namely in 2 × 11 Enam Lingkung and Sungai Garingging Districts. The research was conducted from 1, September to 30, November 2019. This study received ethical approval from the Faculty of Medicine, Andalas University, with letter number 114/KEP/FK/2019 and permission from the Padang Pariaman Regency Government, West Sumatera, Indonesia.

The instrument used in this research was a questionnaire. Questionnaires were used to see the level of knowledge, attitudes, and practice of families in choosing, obtaining, using, storing, and disposing of medicine and the factors that influence them. For the first step, a questionnaire was constructed. The questionnaire was constructed based on similar questionnaires that have been conducted in previous studies [16], [17], [18], [19] and studies by experts in pharmacy and pharmacist practitioners at the Community Health Centers.

This questionnaire was made as closed questionnaire, where the respondent only had to choose one answer that he/she thought it appropriate. Several open-ended questions were also given to support the required data. This questionnaire was divided into four parts, namely: the first part contained sociodemography comprising respondents' characteristics, medicine information, and information on self-medication; the second part contained aspects of respondents' knowledge about medicine; the third part contained aspects of the respondent's attitude to medicine and the fourth part contained aspects of the respondent's practice about medicines.

The answer choices for the questionnaire comprised yes, no, and don't know for knowledge. Meanwhile, for attitudes and practice, the answers comprise agree, disagree, and do not know. Each correct answer was given a score of 1 and those who were wrong or did not know were given a score of 0 [20]. The draft of the questionnaire that had been prepared was asked for opinions from community pharmacists and clinical pharmacists regarding the validation of its content and then validation tests were carried out on 30 families.

Implementation the research was assisted by a team of enumerators who had been given previous training on family data collection techniques. Questionnaires were filled out by families at their respective places of residence assisted by enumerators. Filling out this questionnaire takes about 30 min.

Moreover, the collected data were coded and then entered the Statistical Package for Social Sciences database for the windows version 21 program. The univariate (descriptive) analysis included frequency, percentage, average, and standard deviation. Knowledge, attitude, and practice categories were declared high/positive if the % mean >60% and low/negative if the % mean 60% [21]. Meanwhile, the bivariate analysis between the dependent variable (knowledge, attitudes, and actions about medicine) and the independent variable (respondent sociodemography) was determined using the Chi-squared test. Multivariate analysis was determined using the Linear Logistics Regression test. The level of significance was set at $p < 0.05$.

Results

The sociodemographic characteristics of the respondents in these study areas were listed in Table 1.

Table 1: Characteristics of respondents

Subvariable	Category	n	%
Age	25 years	90	18.0
	26–45 years old	156	31.2
	46–65 years old	186	37.2
	>65 years old	68	13.6
Gender	Man	53	10.6
	Woman	447	89.4
Education	Primary school	186	37.2
	Junior high school	134	26.8
	Senior high school	162	32.4
	College	18	3.6
Work	Civil servant	6	1.2
	Private	85	17.0
	Does not work	409	81.8
Average expenditure per capita/month	<Poverty line	61	12.2
	Poverty line	439	87.8
Health insurance coverage facilities	There is	318	63.6
	There is not any	182	36.4
The first health facility visited when parents were sick	Public health center	306	61.2
	Hospital	15	3.0
	Midwife practice	126	25.2
	Village clinic	32	6.4
	Clinic	15	3.0
	Pharmacy	6	1.2
The first health facility visited when the child is sick	Public health center	272	54.4
	Hospital	27	5.4
	Village clinic	37	7.4
	Midwife practice	143	28.6
	Clinic	19	3.8
	Pharmacy	2	0.4
Reasons why health facilities are first visited when sick	Time	61	12.2
	Distance from home	265	53.0
	Service	134	26.8
	Medicines given	32	6.4
	Previous experience	8	1.6

Age category of respondents 46–65 years (37.2%), females (89.4%), elementary school education (37.2%), and not working (81.8%). Meanwhile, the average expenditure of respondents per capita/month is above the poverty line (87.85), respondents have health insurance coverage (83.6%). The first health facility visited when parents and children were sick was the Community Health Centers (61.2% and 54.4%) with the reason for choosing the first health facility to be visited when sick was because of the distance from their place of residence (53.0%).

Sociodemographic characteristics of respondents related to medicine information as presented in Table 2. Respondents 81.0% did not know

Table 2: Medicines information

| Sub-variable	Category	n	%
Meaning of medicine sign marking	Do not know	405	81.0
	Know one medicine sign	51	10.2
	Know two medicine signs	13	2.6
	Know the three-drug signs	1	0.2
	Know all medicine signs	30	6.0
Home medicine supplies	There is	185	37.0
	There is not any	315	63.0
The purpose of storing medicine at home	Treating pain	84	45.4
	Stock	101	54.6
Source of medical supplies at home	Doctor's prescription	101	54.6
	Self-medication	36	19.4
	Previous leftover medicine	22	11.9
	Doctor's prescription and self-medication	7	3.8
	Other sources	19	10.3
Classes of medicines stored at home	Free	106	57.3
	Unlimited free	26	14.0
	Medicines prescribes	9	4.9
	Herbal/traditional	8	4.3
	Other	36	19.5
The place to store the medicine at home	Plastic bags	89	48.1
	Cupboard	52	28.1
	Refrigerator	14	7.6
	Drawer	13	7.0
	Other	17	9.2
Family members who have a major role in managing medicines in the family	Father	114	22.8
	Mother	336	67.2
	Child	50	10.0

the meaning of medicine sign marking, respondents kept medicines at home (37.0%) to stock up when sick (54.6%). Meanwhile, the source of supply of medicines at home comes from previous doctor's prescriptions (54.6%), classes of medicines at home are over-the-counter drugs (57.35), and places to store medicines at home in plastic bags (48.1%). Furthermore, family members who have a major role in managing medicine in the family is the mothers (67.2%).

The sociodemographic characteristics of respondents related to self-medication information are as presented in Table 3. The main source of respondents' information about medicine was pharmacists/doctors (66.4%), the practice taken by respondents when self-medication treated with branded medicine (52.4%). Meanwhile, the main source of information for self-medication was family (52.0%), consideration in choosing medicine was from a previous doctor's prescription (56.6%), and the place to get medicine was a pharmacy (48.2%). Furthermore, instructions for using medicine when self-medication from pharmacists at pharmacies (48.8%).

Table 3: Information on self-medication

Sub-variable	Category	n	%
The main source of information about medicines	Pharmacist/doctor	332	66.4
	Family	91	18.2
	Friends/others	33	6.6
	Print media	4	0.8
	Electronic media	40	8.0
Actions when doing self-medication	Using branded medicine	262	52.4
	Using traditional/herbal medicine	230	46.0
	Other	8	1.6
The main source of information on self-medication	Family	260	52.0
	Pharmacist/doctor	156	31.2
	Advertisements/brochures	15	3.0
	Friends/others	58	11.6
	Other	11	2.2
Where to get medicine when self-medication	Pharmacy	241	48.2
	Drug store	59	11.8
	Shop	112	22.4
	Other	88	17.6
The basis for choosing medicines when self-medication	Previous doctor's prescription	283	56.6
	Pharmacy pharmacist information	84	16.8
	Information on family/neighbors/friends	110	22.0
	Advertising/brochure information	13	2.6
	Other	10	2.0
Instructions for using medicines when self-medication	Pharmacy pharmacist	244	48.8
	Family/neighbors/Friend	169	33.8
	Packaging/brochure	56	11.2
	Advertisement	13	2.6
	Other	18	3.6

The percentage of the average score of respondents' knowledge about medicine is as presented in Figure 1. The percentage of the average score for each category of knowledge starting from selecting,
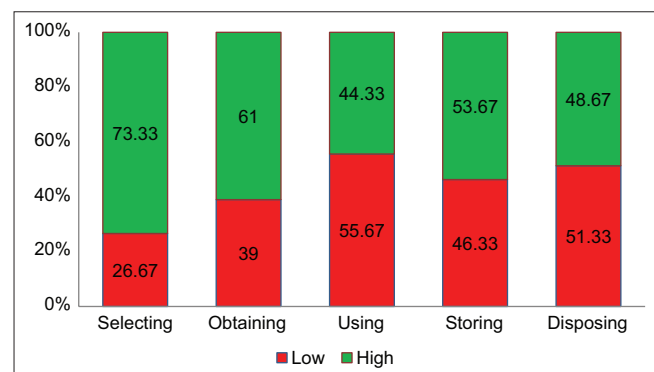
Figure 1: An average score of respondents' knowledge about medicine

obtaining, using, storing, and disposing of medicine was obtained successively 73.33%, 61, 0%, 55.67%, 46.33%, and 51.33% or average 57.53%. Based on these results, only respondents' knowledge of choosing and obtaining medicine is in the high category (>60.0%).

The results of the Chi-squared test of the relationship between respondent characteristics and knowledge scores that were significantly related (p < 0.05) was the reason the first health facility was visited when sick (p = 0.032). Meanwhile, the results of the Chi-squared test of the relationship between medicine information and self-medication with knowledge scores obtained results that were significantly related (p < 0.05) were family members who had a major role in managing medicine (p = 0.000), the main source of information about the medicine (p = 0.000), the basis for selecting self-medication (p = 0.013), where to get medicine when self-medication (p = 0.000) and instructions for using medicine when self-medication (p = 0.044).

The results of the bivariate analysis of the knowledge variable as presented in Table 4 were followed by multivariate analysis using linear logistic regression to determine the sociodemographic sub-variable which had the greatest influence on the knowledge variable. After 12 times of modeling, the final result is that there is a significant relationship between the respondent's knowledge of medicine and the main sources of information about medicine by pharmacists/ doctors (p = 0.006), family (p = 0.012), and media/friends/ others (p = 0.015). From the results of the analysis, it was obtained that the OR = 1.9 in the family category, meaning that respondents who received information about medicine from their families had a 1.9 times chance of having a low risk of knowledge when compared to pharmacists/doctors. Furthermore, in the category of media/friends/others, the value of OR = 2.206.

Table 4: Sociodemographic sub-variables related to knowledge

Sub-variable	p-value
Reasons why health facilities are first visited when sick	0.032
Family members who have a major role in managing medicines in the family	0.000
The main source of information about medicines	0.000
The basis for choosing self-medication	0.013
Where to get medicine when self-medication	0.000
Instructions for using medicines when self-medication	0.044

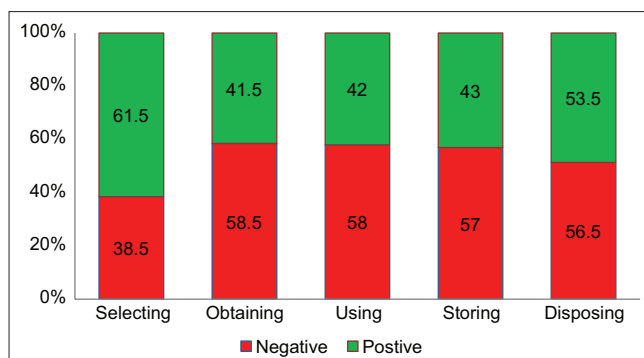The percentage of the average score of respondents' attitudes about medicine was as presented in Figure 2. The percentage of the average score for each attitude category starting from selecting, obtaining, using, storing, and disposing of drugs was obtained 61.5%, 58.5%, 58.0%, 57.0%, and 56.5%, respectively, or average 58.38%. Based on these results, only the attitude of the respondents selecting medicine that were in the positive category or >60%.

The results of the Chi-squared test of the relationship between respondent characteristics and attitude scores that were significantly related (p < 0.05) were education and health insurance facilities (p = 0.041). Meanwhile, the results of the Chi-squared test of the relationship between medicine information and self-medication with attitude scores had no sub-variables that were significantly related (p < 0.05).

The results of the bivariate analysis of the attitude variables as presented in Table 5 were followed by multivariate analysis using linear logistic regression to determine the sociodemographic sub-variables that had the greatest influence on the attitude variable. After 11 times of modeling, the results showed that there was a significant relationship between respondents' attitudes about medicines and basic education (p = 0.004), secondary education (p = 0.002), and higher education (p = 0.006). Meanwhile, from the results of the analysis, the value of OR = 24.490 in the basic education category, meaning that respondents with basic education have a 24.490 times more chance of having a negative attitude about medicines than respondents with secondary education. Furthermore, in the category of higher education also obtained OR = 17.396.

Table 5: Sociodemographic sub-variables related to attitude

Sub-variable	p-value
Education	0.000
Health insurance facilities	0.041

The percentage of the average score of the respondent's practice regarding the medicine is as presented in Figure 3. The percentage of the average score for each attitude category starting to selecting, obtaining, using, storing, and disposing of medicine was obtained, respectively, 59.33%, 53.67%, 55.67%, 51.33%, and 56.33% or average 55.23%. Based on these results, the respondent's practice regarding medicines are in the negative category or <60%.
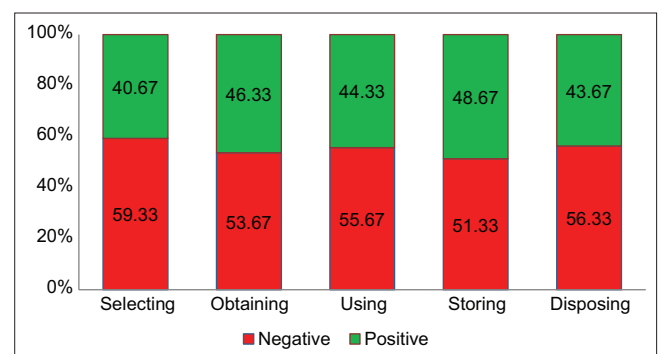

Figure 2: An average score of respondents' attitudes toward medicine

Figure 3: An average score of respondents practices on medicine

The results of the Chi-square test of the relationship between respondent characteristics and practice scores obtained results that were significantly related (p < 0.05) were gender (p = 0.042), education (p = 0.017), and the reason for the first health facility visited when sick (p = 0.016). Meanwhile, the results of the Chi-square test of the relationship between medicine information and self-medication with the practice score showed that the results were significantly related (p < 0.05) with the practice score being family members who had a major role in managing medicine (p = 0.000). The main sources of information about medicine (p = 0.000), the basis for selecting medicine when doing self-medication (p = 0.000), where to get medicine when doing self-medication (p = 0.036), and instructions for using medicine when doing self-medication (p = 0.010).

The results of the bivariate analysis of the practice variables as presented in Table 6 were followed by multivariate analysis using linear logistic regression to determine the sociodemographic sub-variables that had the greatest influence on the practice variables. After twelve times of modeling, it was found that there was a significant relationship between the respondent's practice regarding drugs and the mother who had the main role in managing medicine (p = 0.000), the father who had the main role in the managing medicine (p = 0.002) and the child who had the main role in the managing medicine (p = 0.003). Meanwhile, the results of the analysis also obtained an OR = 0.228 in the father category, meaning that fathers who have a major role in managing medicine will have a 0.228 times lower chance of taking action than mothers. Furthermore, in the child category, the value of OR = 0.329.

Table 6: Sociodemographic sub-variables related to practice

Sub-variable	p-value
Gender	0.042
Education	0.018
Average expenditure per capita/month	0.082
The main source of information about medicines	0.000
The first health facility to visit when parents are sick	0.054
Reasons why health facilities are first visited when sick	0.016
The basis for choosing self-medication	0.000
Where to get medicines when self-medication	0.036
Instructions for use of medicines when self-medication	0.010
Family members who have a major role in managing medicines in the family	0.000

Discussion

Characteristics of respondents in the study (Table 1) affect family health literacy, especially related to knowledge, attitudes and practice in selecting, obtaining, using, storing and disposing of medicine. This was in line with the results of Min-Li *et al*. (2016) who stated that age group, gender, the highest level of education, and family members who work in the health sector are factors that are significantly associated with health literacy levels [22].

Meanwhile, health insurance facilities are the first health facilities to be visited when parents and children are sick with the reason that the distance from where they live is closer. These data were inconsistent with the results of previous studies. For example, Liew and Gardner in 2014 using data from the Indonesia Family Life Survey (IFLS, 2014) stated that most people are reluctant to seek treatment due to the condition of health facilities. Location of health services, waiting time, and cost of care are factors that have a significant effect on an individual's decision to do outpatient care at a health facility [23]. Likewise with the results of the 2018 Basic Health Research stated that the majority of people find it difficult to access primary and secondary health services [24].

Furthermore, the characteristics of respondents related to medicine information (Table 2) due to the low education of respondents, who on average were only elementary school students over 45 years of age. Moreover, educational level and age were very influential on the ability to obtain health information including drugs. According to Berkman, *et al*. (2011) someone with a higher level of education shows a higher level of health literacy compared to a person with a lower level of education. People with higher education have better reading and comprehension skills and this allows them to have a positive effect on health literacy [25].

The behavior of respondents storing medicine at home to supply when sick was in line with the results of the 2013 Basic Health Research which showed that 35.2% of the sample of households kept medicine for self-medication purposes. Meanwhile, Gitawati's research (2014) showed that 82% of respondents stored medicines, 37.6% of medicines were intentionally stored for supplies in case of illness [26]. The existence of this medicine storage can trigger drug-related problems including the risk of medication errors.

The types of medicine that respondents keep at home from previous doctor's prescriptions were in line with Gitawati's research (2014) which shows that 31.6% of medicines stored by respondents are leftover from previous prescriptions [26]. Furthermore, the respondent's behavior of storing medicines in plastic bags can affect its efficacy and contribute to irrational drug use [27], [28]. Another problem that can occur in storing medicines incorrectly is the safety of medicines for other people, especially children. The results of the study by Sloand *et al*. (2001) showed that 89% of children aged 10–14 years had access to medicines at home, of which 36% had self-medication [29].

The family member who has the main role in managing medicines when the father or child is sick is the mother. The results of this study were following Andersen's theory which states that a mother's response when her child is unwell includes self-medication, seeking traditional medicine, and visiting health facilities. Meanwhile, several previous studies have stated that women are active seekers of health

information [30], [31]. Moreover, they are more sensitive to health and preventive measures than men [32]. Other research shows women are significantly more willing to play a role in solving health problems than men [33]. The results of this study were also strengthened by the research of Irawaty *et al.* (2019) who states the mother in Minangkabau adat was positioned as a central figure in the family and has a very strong position and role even under certain conditions as decision-makers in the family [34].

Characteristics of respondents regarding self-medication information (Table 3) regarding the main sources of information about drugs and self-medication was in line with the research of S.D. Cîrstea (2017) who stated that patient decisions in purchasing OTC medicine are determined by two important factors, namely doctor/pharmacist recommendations and previous experience [35]. Respondents' practice when self-medication used more branded medicine because of considerations of safety and trust in the family that had been passed down from generation to generation [36], [37].

Respondents' considerations in choosing self-medication based on previous doctor's prescriptions and getting them from pharmacies are in line with previous studies which stated that the main source of self-medication of antibiotics in Saudi Arabia came from previous doctor's prescriptions [38]. Meanwhile, Ocan *et al.* (2015) stated that the main source of antimicrobial self-medication was 65.5% from pharmacies. Furthermore, 48.8% of instructions for using self-medication were obtained from pharmacists in pharmacies [5].

The level of knowledge in terms of the average score of respondents' knowledge, only the category of selecting and obtaining drugs has a mean percentage value of a total score of >60% (high category), namely 73.33% and 61.00%, respectively. Meanwhile, for the category of using, storing, and disposing of medicines, the mean percentage value of a total score of <60% (low category) is 55.67%, 46.33%, and 51.33%, respectively. The results of the bivariate analysis using the test Chi-square on sociodemographic sub-variables that were significantly related (p < 0.05) with a variable score of knowledge was the reason the health facility was first visited when sick, family members who a major role in managing medicines, the main source of information about medicine and the basis for medicine selection self-medication.

Meanwhile, the results of multivariate analysis using regression test linear logistics on the results of the bivariate test of the knowledge variable (Table 4) found that the sub-variables were significantly related (p < 0.05) with knowledge about medicine as the main source of information about medicines. Furthermore, the main sources of information about medicine were pharmacists/doctors (p = 0.006), family (p = 0.012) and media/friends/others (p = 0.015). Findings related to

pharmacists/doctors as the main source of information about this medicine are not much different from the results of research by Alghadeer *et al.* (2017) who stated that the top sources of information about self-medication with antibiotics in Saudi Arabia were previous doctor's prescriptions (36.6%), advertisements (26.5%), and pharmacist advice (19.7%) [38]. Meanwhile, the category of family and media/friends/others as the main sources of information about medicines is in line with the results of research by Kayalvizhi *et al.* (2010) which states that family, community, and advertisements from sharing media are the drivers of self-medication behavior [39]. The results of Dianawati *et al.* (2008) showed that medicine advertisements on television had a significant effect on adolescent self-medication behavior in Surabaya. The information contained in drug advertisements can create trust in the public so that the knowledge of the perception results will affect their behavior [40].

The attitude category is reviewed based on the average score of the respondent's attitude, so only the category of selecting a medicine has a mean percentage value of a total score of >60% (positive category) which is 61.5%. Meanwhile, the category of obtaining, using, storing, and disposing of medicine has a mean percentage value of a total score of <60% (low category), namely, 58.5%, 58%, 57%, and 56.9%, respectively. The results of bivariate analysis using test Chi-Square on sociodemographic sub-variables that were significantly related (p < 0.05) with the attitude variable scores were education and health insurance facilities.

Meanwhile, the results of the multivariate analysis using logistic regression test on the results of the bivariate test of the attitude variable (Table 5) showed that the sub-variables were significantly related (p < 0.05) with the attitude variable about medicines were education. Furthermore, the education categories were basic (p = 0.02), middle (p = 0.004), and high (p = 0.006) education. These results are in line with several previous studies which state that a person's education will greatly affect his knowledge, attitudes, and actions about medicine [41], [42]. The negative attitude of respondents' knowledge about medicines in terms of Lawrence Green's theory can be caused by trust factors obtained from parents or family, education, motivation, and perception [43].

The category of practice about medicines based on the average score of the respondent's actions in all categories of variables has a mean percentage value of the total score <60% (negative category). The results of the bivariate analysis using the Chi-square test on sociodemographic sub-variables that were significantly related (p < 0.05) with the score of the practice variables were gender, education, the reason for visiting the first health facility when sick, family members who had a major role in the managing medicine, the main source of information about medicine, the basis for choosing

self-medication medicine, where to get medicine when self-medication, and instructions for using medicine when self-medication.

Meanwhile, the results of multivariate analysis using regression test linear logistics on the results of the bivariate test of the practice variable (Table 6) found that the sub-variables that were significantly related (p < 0.05) with the practice about medicines were family members who had a major role in managing medicines. Furthermore, the categories of family members who have a major role in managing medicines in the family is the mother (p = 0.000), father (p = 0.002), and children (p = 0.003). The results of this multivariate test are very possible because socio-culturally women play a very important role in maintaining the health of their families. The responsibility for treatment in the family is more often held by the wife (mother). Women are psychologically more anxious about the presence of health problems in the family [44], [45], [46]. The results of another study show that mothers are the closest family members to their children, especially when they are sick [47]. Mothers have a strong influence on the orientation of family members about health including medicine problems [48].

Conclusion

The results of this study indicate that the knowledge, attitudes, and practice of families in selecting, obtaining, using, storing, and disposing of medicine are still low and very limited. The role of family members is very important as the main source of information about medicine in the family. The lack of knowledge, attitudes, and practice related to medicines and the important role of the family is the reason for the very importance of family-based medicines education.

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