

Prevalence of self-medication in children under-five years by their mothers in Yogyakarta city Indonesia

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ABSTRACT

Background: The trend of combating minor ailments at home in children is a common practice in Indonesia. When it comes to very smaller children like those of age under-five. **Aims:** Consequences can be worse if not managed well. Self-medication among these children is not well studied in Yogyakarta, Indonesia. **Materials and Methodology:** In this study a questionnaire-based random survey among different areas of Yogyakarta city from the mothers bearing children if age under five. Questionnaire were validated by three experts, for reliability test a pilot study conducted on 10 mothers, after that questionnaire used for data collection. Data were analyzed by using SPSS Descriptive analysis to get frequency and percentage. **Results:** The overall prevalence reported is 58.82% (50/85). An increasing trend of self-medication was seen among high-higher secondary schools education mothers with 35.3%. In income factor 2600K-3000K mostly found in the self-medication. The residential area also seems influential upon this practice, i.e., 58.8% rural people depends on self-medication while urban people only 39.2% involved in self-medications. **Conclusion:** As a large population of very small children is under this practice so, proper education of mothers especially in rural areas is needed for the appropriate use of medicines.

Keywords: Prevalence, self-medication, under five-year child, Yogyakarta

Introduction

Self-medication is a very common practice in many developing and underdeveloped countries where without consulting a doctor or pharmacist, a significant proportion of individuals handle or treat their illnesses.^[1] This way, sadly, is growing day-by-day, leading to severe health-related problems. Its more vulnerable to health issues and can suffer short or long-term health effects if people are self-medicated.^[2] People prefer to search on the internet for their signs and symptoms and use smartphone apps, so they check for alternative drugs and remedies for their symptoms. In addition, if the drug name is searched for in such applications, it may also be possible to find out the clinical indications. In young people, this behavior is very popular.^[3] This information could come

from old prescriptions, drugs suggested by relatives or friends, and advertising as previously mentioned. But if the disease still prevails, the parents plan to go to a hospital. But despite a doctor's visit, it is still a choice to search for a more successful medication.^[4]

There is another case as well. Parents prefer to treat their children with various medications along with self-medication. The administration of side-by-side allopathic and herbal treatments is a common example. Parents take a sick child to the doctor but also provide him with natural home remedies to satisfy themselves.^[5] Mothers are a very significant aspect of this research. The explanation for this is that parents are seen to be more involved and worried for their children. So, in this society, a very close connection is present between mothers and their children. In 2011,^[6] in Ibadan, Nigeria, I conducted a report on the practice of self-medication by their mothers for children under five years of age for disease. According to this research, mothers of under-five children in Ibadan, Nigeria, mothers of under-five children whose child got sick two weeks ago from

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the survey conducted, indicate that as the first action they used self-medication; a lot of revealed that for their children, they always administered non-prescribed drugs, while less than half applied competence-based self-medication, and very few were persuaded to use non-prescribed drugs by family members.^[7] A similar study on self-medication was conducted, found that the prevalence of self-medication was very high. This dramatically increased for children between the ages of three and five and for parents with a high socioeconomic status. Mainly for cough and fever, self-medication was practiced. The principal medicines used were analgesics, antibiotics and anti-malarial drugs.^[8] Dawood, *et al.*,^[9] conducted a study in Malaysia on the understanding and management of the parents of their children's ailments. The results showed that without seeking consultation from the doctor, minor ailments such as fever, cough can be relieved with over-the-counter medications (OTC) such as paracetamol and other common medicines. In 2014, a report on the prevalence of self-medication among the urban and rural population of Islamabad, Pakistan, was carried out by^[10] a big number of participants performed self-medication, and it was more common among groups of 15 to 30 years of age.^[11] A research on fever control in children was performed by their mothers. As one of the complaints raised, one hundred and forty-four mothers whose children were less than 12 years of age had a fever.

Antibiotics were self-medicated (17 percent of users) mainly in urban provinces, according to one study in Indonesia, and people with no health insurance were mostly self-medicated. During the study era, the prevalence of self-medication with antibiotics was 7.3 percent.^[12] 61 percent of the population considered themselves self-medicated in 2014, based on a population survey in Indonesia.^[13] In Indonesia, the role of pharmacists in a community-based approach to engagement among patients with specific diseases such as diabetes and tuberculosis could enhance awareness, actions and attitudes about drug use (Hartayu, 2012). The novelty of this study is that many new aspects of self-medications included that never been applied in Yogyakarta city of Indonesia during that type of research.

Methodology

Study design

The study design was a cross-sectional study with a random sampling technique a survey-based. Data collected from a defined population at one time rather than a period and the population of the research was 85 out of it 50 were self-medicated mothers. This research was conducted in rural and urban areas of Yogyakarta city of Indonesia from November 19, 2019 to April 4, 2020. Mothers bearing children of five or less age was the focus of data collection. Random sampling is done from urban and rural places of the special region of Yogyakarta. The purpose and details of the study were explained to subjects and only those willing and ready to sign the informed consent were included in the study. The participants were assured that records and data identifying the subject are kept confidential and are not made publicly available. If the results of the study are published, the

subject's identity remains confidential. For data collection, a questionnaire was developed by a detailed literature review.

The questionnaire is constituting different questions relevant to the study. the questionnaire was divided into two parts: the first part involves 11 questions and the second part constitutes 14 questions. The first part demonstrates the practice, method, and even medicines used for the sake of self-medication. In the second part, the questions described are quite specific and close-ended. The questionnaire was validated by 4 experts and after it used for data collection. About 85 questionnaires are filled by mothers only 50 show prevalence of self-medication, out of 50 self-medicated mothers 20 were from urban while 30 were from rural areas. The sampling is done from both educated and less educated mothers as well as low income and high-income mothers. Data were analyzed by using software SPSS version 26", and descriptive analysis used for getting graphs, frequencies, and percentages. A sample of the questionnaire is given in Table 1.

Inclusion criteria

Subjects with address proof of residency in Yogyakarta, ready to sign the informed consent, who understood Indonesian language or English were eligible to participate in the study.

Exclusion criteria

Subjects having communication problem, severe illness or mentally challenged were excluded from the study.

The study was approved by the independent ethics

The purpose and details of the study were explained to subjects and only those willing and ready to sign the informed consent were included in the study. The participants were assured that records and data identifying the subject are kept confidential and are not made publicly available. If the results of the study are published, the subject's identity remains confidential.

Results and Discussion

Results about the prevalence of self-medications are given below, a lot of mothers found self-medications having children less than five years.

Prevalence self-medication

The overall reported prevalence of 58.82% (50/85). Most of the mothers hesitated to tell that they are doing self-medication but when questions were asked from a different angle, they accepted that they did self-medication, around 39.2% of mothers said its good practice but have to consult a doctor. It's not a good practice so must avoid 31.4%, it's a good practice and nothing wrongdoing it 13.7%, some said "I don't know" 9.8% and some of them were surprised and they answer "what" with 3.9%. The following Table 2 shows the overall trend of self-medication.

The below graph is also explaining about self-medications of mothers under 5 years of age, about the prevalence of

Table 1: Sample of items used in questionnaire

Question	0	1	2	3	4
When did you brought your kid last time in the hospital?	Last week	Last month.	6month ago.	Last year.	Never
Your kid often suffers from:	Never before.	Fever or headache.	Abdominal pain, vomit, diarrhea.	Flu	Cough or sore throat.
When your kid gets sick you prefer to give him medicine:	As your doctor prescribes.	By using old prescriptions	With the help of advertisements.	Whatever, your relatives or friends told you.	By your own personal experience.

Table 2: Prevalence of Self-medication

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
What?	2	3.9	4.0	4.0
I Don't Know	5	9.8	10.0	14.0
Its good practice but consult doctor	20	39.2	40.0	54.0
It's not a good practice so must avoid	16	31.4	32.0	86.0
It's a good practice & nothing wrong	7	13.7	14.0	100.0
Total	50	98.0	100.0	
Missing				
System	1	2.0		
Total	51	100.0		

self-medication highest graph showing mostly moms' answer is it's a good practice but have to consult a doctor before doing self-medication which is a very sign of awareness. The second highest peaks show that mothers said it's not good practice and must avoid self-medication. The third highest peak shows that the mother's response is it's a good practice and nothing wrong. Some mothers found to surprise by over questions and said they don't know or in some questions, they said what's that self-medication, it means they are unaware of the name of self-medication more details are given in Figure 1.

Socio-demographic characteristics of the participants
Mothers education

The frequency range for mothers' education is set from illiterate to masters and above. Most of the mothers completed their high and higher secondary examinations. Variables included are illiterate mothers, mother passed primary or middle school exams, mothers with a high or senior high certificate, mothers who have done bachelors and mothers with masters or above qualification. Mother education was found dependent on self-medication. From results show that most educated mothers do self-medication because they can get information from different sources or read in somewhere and then did self-mediations mostly high and senior high school passed mothers agreed on self-medication with 35.3%. Master and above degree mothers have 31.4% percentage, bachelor degree mothers 21.6% while the lowest one was illiterate mothers 3.9%. As some other studies also observed that educated parents usually practiced it due to some knowledge of disease and medicines.^[14] If mothers have been educated about self-medication it can be controlled like in one of study the educational intervention, a significant relationship was found between the case and control groups, and the women's performance in terms of self-medication

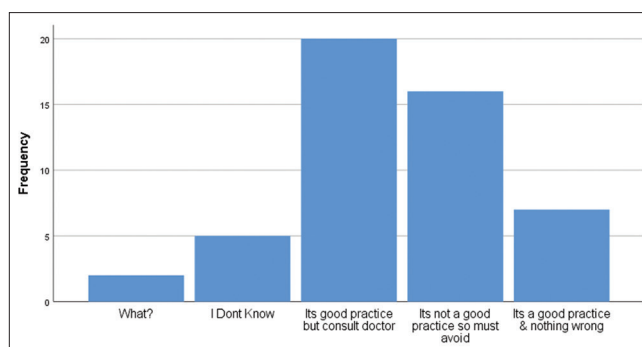


Figure 1: Prevalence of self-medications

reduced.^[15] Educational Intervention may be promoted by the knowledge and performance of mothers about self-medication in children.^[16] Education for mothers of children under age six can improve their knowledge and attitudes and increase their understanding and can also improve practices related to the lack of self-medication for their children.^[17]

Below in graph results explain clearly that most educated mothers did self medications and high-senior high schools educated mothers were on high numbers while the master and highly educated mothers were second, bachelor degree mothers on third while illiterate and elementary education mothers found less self-medicated, more details are available in Figure 2 and Table 3.

Income factor

Self-medication also directly affects high-income mothers, a mother whose monthly income was higher which was ranges Rp. 2600K-3000K/- has 31.4% its shows high-income mothers were found more in self-mediations. Rp. 2100K-2500k/- was on the second number with 27.5% self-mediators' mothers, from

Rp. 1600K-2000K/- have 23.5% and very a smaller number of mothers agreed upon the usage of self-medication with Rp. 1000K-1500K/-with 15.7% income. It shows that economic status does influence self-medication especially high-income mothers who did more self-medication compare to fewer income mothers. As some other studies show that self-medication is an inferior good at high-income levels and a normal good at low-income levels, and it shows a strong and robust negative insurance effect more details can seen in Table 4.^[18]

As the graph below also shows that high-income mothers between Rp. 2600k-3000k/- has the highest peak its means high-income mothers do more self-medication second highest peak is Rp. 2100k-2500k/- income mothers while the lowest peak is of Rp. 1000k-1500k income mothers. Its conclusion by both table as well as a figure that mostly high-income mothers shows more self-medication, more details is given in Figure 3.

Table 3: Mothers' education

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
Illiterate	2	3.9	4.0	4.0
Elementary School	3	5.9	6.0	10.0
High-Senior High School	18	35.3	36.0	46.0
Bachelor	11	21.6	22.0	68.0
Master and Above	16	31.4	32.0	100.0
Total	50	98.0	100.0	
Missing				
System	1	2.0		
Total	51	100.0		

Table 4: Economic status of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
1000K-1500K	8	15.7	16.0	16.0
1600K-2000K	12	23.5	24.0	40.0
2100K-2500k	14	27.5	28.0	68.0
2600K-3000K	16	31.4	32.0	100.0
Total	50	98.0	100.0	
Missing				
System	1	2.0		
Total	51	100.0		

Table 5: Residential areas

	Frequency	Percent	Valid percent	Cumulative percent
Valid				
Urban	20	39.2	40.0	40.0
Rural	30	58.8	60.0	100.0
Total	50	98.0	100.0	
Missing				
System	1	2.0		
Total	51	100.0		

Residential areas effects

Moreover, more than half of the participants belonged to the rural areas, with frequency 30 and percentage of 58.8 that shows self-medication while urban areas 20 respondents with 39.2% mothers agree on self-medications. In simple words, the residential area also affects self-medications. As another study prevalence of self-medication is associated with place of residence, and health status of the study participants^[19] self-medication is a common practice as it provides a low-cost alternative for people who cannot afford the high cost of clinical service, and is time-efficient. Rural individuals preferred self-medication with the opinion of saving time and urban people felt that it was less expensive.

In the below Figure 4, and Table 5 clearly shows that most rural mothers did self-medications because the graph is higher than

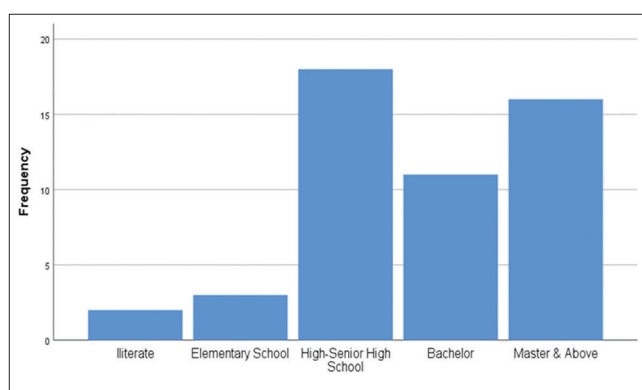


Figure 2: Graphical representation of mother educations

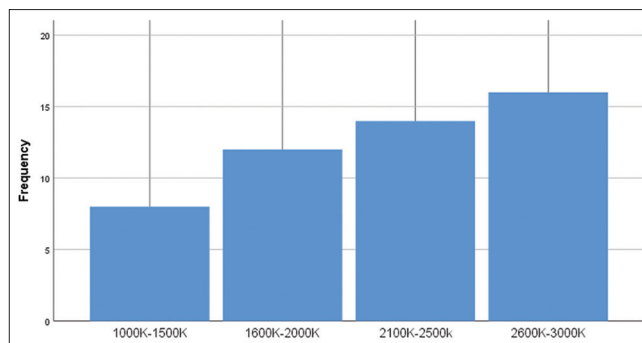


Figure 3: Income of mothers

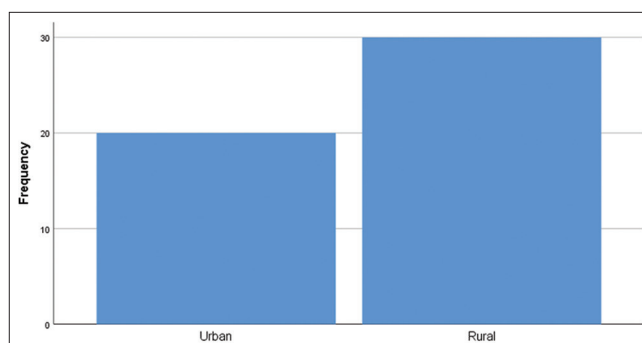


Figure 4: Urban and rural population

urban areas mothers, while urban areas mothers also show a significantly high number in self-medications.

Discussion

Self-medication prevalence among parents was 58.82% which was high as compared to the study conducted in 1995 in Karachi that was 58%.^[20] Different studies were also documented extremely variable rates of self-medication in children by parents ranging from 43% to 95.7%.^[21] The reasons for this variation might be due to different methods of data collection, availability of free medical for children in some countries, parents' concern about the safety of medicine and high cost of medical care. Present study reveals that parent's high salary 2600K-3000K Indonesian rupiah monthly income usually practiced more self-medication to their child. This might be due to high consultation fee of physician and more family responsibilities. This finding has similarity with that studied in Germany where self-medication practice was more in families with high income.^[22]

Reasons that enforced parents to self-medicate their child were also investigated. The most common reason was found to be "Its good practice but consult doctor" 39.2% that might be due to previous experience of sickness or some knowledge. This practice may lead to misdiagnosis and may prolong the child sickness. Perception of illness was also found among main reasons in another study conducted in Vietnam.^[2] Another common reason was lack of time, perhaps this might be due to working status of both parents and they could not get enough time to visit physician/health care facility. Other reasons included were economical constraint, high consultation fee of physician as seen in another study conducted in Sudan.^[23] Self-medication practices are of great concern in the case of children as children are considered to be more vulnerable regarding the use of medicines. In some other studies it is also found that in developing countries children constitute a large percentage of the population and they are more vulnerable and susceptible to different diseases.^[24] In another study about self-medication, most of the parents take the illness as of mild nature that does not need the service of any physician. Studies also show that old prescriptions are commonly used for treating similar complaints.^[25,26] A higher prevalence in a rural area than in urban slum area (58.5%). This variation in prevalence because of differences in recall period, the definition of self-medication used, different methodology, and various socio-demographic variables.^[27]

Conclusion

The overall prevalence of self-medication observed is 58.82% in under-five children by their mothers. The factors most dependent on self-medication are the economic status of mothers, other factors are education and residence. Mother knowledge regarding the use of medicines on their initiative should be needed, side-effects, and hazardous effects on under five-year-old children, a special seminar on child health needed in each area.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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