

Mothers' Perceived Risks and Practices for Over Counter Medications of Children Under Five Years

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Background

Over the counter medications are drugs that are purchased without medical prescription. The use of these medications in children is usually initiated by parents. Using over counter medicine in developing countries found to be higher than in industrialized countries. **Aim:** Assess perceived risks and practices for over the counter medications among mothers of children under five years. **Method:** A descriptive cross-sectional study design. The study was conducted at Pediatric outpatient clinics of Tanta and Kafr-Elsheikh University Main Hospital. A convenience sample of 1000 mother of children under age 5 participated in the study. **Tools:** data was collected using three tools: Socio-demographic data questionnaire, Drug Use Health Belief Scale, and Over-the-Counter Medication Practices Questionnaire **Results:** the use of over the Counter medications was reported by all the participants in the study and 43.2% of mothers reported purchasing over the Counter for their children 3-4 times during this month. Most used medication were antipyretics to relieve a child's fever (91.9%). The common reason for using these medicines was to save the life of the child in cases of emergency (62.5%). 58.9% of the participants had unsatisfactory practice regarding over the counter medication use. A highly positive significant correlation ($r=0.69$ $p=0.0001$) was found between mothers' perceived risks and their reported practice. **Conclusion:** using over the Counter medications is common among the study participants and for different reasons. There is a relationship between mothers' perceived risks and practices of using over the counter medications. **Recommendation:** This research draw the attention to this serious problem. Strategies and educational program should be implemented to improve mothers' perception and practice about using over counter medications.

Key words: (Over the counter medicine, under five aged children, Perceived benefits, Perceived barriers, Perceived risks, and self-efficacy).

Introduction

Over-The-Counter (OTC) medications refers to medications that is taken without doctor consultation and a prescription. A culture of OTC medications in most countries began to emerge in the late 19th century when the World Health Organization (WHO) permitted the conversion of various pharmaceuticals to non-prescription status to be supplied over the counter without any prescription to lessen the burden on healthcare professionals. ⁽¹⁾

The prevalence of using OTC is high in most countries. For instance, In Australia, Trajanovska, (2009) found that 98.2% of the parents in their study purchased at least one OTC medicine for their children in 12 months. In the United Kingdom, studies reported that 66% of parents used OTC over 4 weeks (Kemper, 1999). Similarly, According to data from a population-based survey in the United States, 54% of parents used OTC for children less than 13 months to treat cough and cold symptoms (Lokker, 2009).⁽²⁾ Also, a recent study done in Palestine revealed that 91.9% of the parents used drugs without a physician's prescription (Ali, 2020). Figures appear to be similarly high for Egypt where OTC medications can easily be obtained from pharmacies. A cross-sectional study conducted by Zohour (2014) about maternal practices in giving oral medications to young children complaining of common illnesses reported that 70% of the children received OTC medications. ⁽³⁾

There is a wide range of OTC medications that the parents use. The most common medications purchased and used by the parents are cough and

cold products, antipyretics, influenza drugs, and antibiotics. These OTC medications were promoted through radio, television, and print advertising in most countries. ⁽⁴⁾ In Egypt, the Egyptian health authorities published a decree with a precise description of over-the-counter medications at the end of 2015. Following revision and approval by health authorities, the decree also permitted pharmaceutical corporations to advertise their product directly to customers through a variety of media. Through various social media platforms, various pharmaceutical corporations began promoting their medicines to Egyptian consumers and people starts to use them for their children even with the risks that these medications have. ⁽⁵⁾

There are several risks reported in the literature regarding the usage of OTC. Poison due to using these medications has been reported in several pieces of research. This poison can happen due to several factors such as lack of supervision of the children by the parents, lack of child-resistant closure, and lack of parents' knowledge about the medication. ⁽⁶⁾

In addition, most Egyptian parents give OTC Antibiotics to their children. reported that there are high rates of antibiotic misuse in Egypt and 23.3% of the antibiotics purchased in the participating study pharmacies were without prescription. Misuse of antibiotics without a prescription might be associated with serious effects on children's health including bacterial resistance. Bacterial resistance can lead to a prolonged hospital stay and high morbidity and mortality rate. ⁽⁷⁾

Furthermore, studies also suggested that parents have poor knowledge about OTC. Many parents have difficulty understanding the indications and appropriate dosing of OTC medications. For instance, A cross-sectional study conducted in Palestine showed that there is a lack of knowledge among parents about the appropriate dose of medications, a study evaluating the ability of the parents to give the correct OTC medication dose to their children reported that, 70% of the parents were not able to determine the correct dose of medication.⁽⁸⁾ Another study done in Serbia showed that there is pharmacotherapy literacy among parents of preschool children and most of the parent has difficulty understanding information that is given either in written or spoken form about the use of medicines.⁽⁹⁾

Additional concerns about using OTC medications include allergic reactions, drug interactions, and use of inappropriate medications for various diseases, side effects of some medications such as visual hallucinations, irritability, and sleepiness. If there is a great risk in using OTC medications, why parents are using them? And is it effective? In a systematic review research that examined the effectiveness of over-the-counter (OTC) cough medicines for acute cough in children, the researchers reported that there is no good evidence for or against the effectiveness of OTC cough medicines in acute cough.⁽¹⁰⁾

So, despite the risks of using these medications and their unproven effectiveness, there are some factors reported in the literature that make

parents decide to use OTC medications in managing their children's diseases such as accessibility, convenience, and time-saving.⁽¹¹⁾ In a qualitative study that aimed at investigating the situational and social factors that lead parents to use OTC medications, researchers reported that parents use it as a form of "social medication" to give them control over their children's behavior, to reduce the inconvenience to the parents of having a sick child, calming, and sedating the children.⁽¹²⁾

Significance of the study

Healthcare providers including pediatric nurses need to provide current evidence-based information to mothers regarding appropriate and safe medication used for their children. To do that, we must first determine the current OTC medicine practices of Egyptian mothers. The literature surrounding the types of medicines used, risks, and reasons for use is limited in Egypt. Therefore, the present study aimed to describe mothers' perceived risks and practices for over counter medications of children under five years.

Aim of the Study

The general aim of this study was to assess mothers' perceived risks and practices for over counter medications of children under five years and to answer the following research questions

Research question:

- What are mothers' perceived risks and practices for using OTC medications in children under five years?
- What are the most commonly used OTC medications?
- What are the frequency and reasons for using OTC medications?

-What is the relationship between mothers' perceived risk and their practice?

Subjects

Research design:

The cross-sectional descriptive, correlational research design was used in this study

Setting:

This study was conducted at the Pediatric Outpatient Clinics, Tanta and Kafr-Elsheikh University Main Hospitals.

Study subjects:

Convenience sample of 1000 mothers who have at least one child under the age of 5 years, this calculation is based on type I error 0.05 and power of test 90%.

Data collection tools:

The data were collected using face-to-face interviews. The following tools were used to collect the data.

Tool I: Socio-demographic data of the mothers

It includes age, marital status, educational level, residence area, work status, number of children, occupational status, monthly income, and causes of taking over-the-counter medication.

Tool I I: Drug Use Health Belief Scale

This tool assesses the mothers' perception of perceived susceptibility, severity, benefits, barriers, and their self-efficacy of using over counter medication. The scale were was developed by Erci and Cicek's (2017)⁽¹³⁾ and consists of 28 items related to five domains which include: perceived susceptibility (6 items) determines the risks perceived by individuals related to using un-

prescribed drugs, perceived severity (6 items) , the items indicates how the individual perceive the seriously dangerous of the outcomes of using OTC medicine, perceived barriers (6 items) determine the barriers perceived by the individual when he use OTC medicine, perceived benefits (4 items) that ask the participants' about their perception about the benefits of using OTC medicine and self-efficacy (6 items) that determine the individuals self-belief. Each item on the scale is scored on a 5 points Likert type scale, ranging from 1 =strongly disagree to 5=strongly agree. The total scale scores are obtained by summing all the scores together. The maximum score on the scale is 28 and the minimum score is 140. The higher score indicates a higher level of health beliefs related to conscious and prescription drug use. The Cronbach's alpha Coefficient of the scale developed by Eric and Cicek (2017) ⁽¹³⁾ was 0.90. The Cronbach's alpha of the scale of the current study was 0.89

Tool III: Over-the-Counter

Medication Practices Questionnaire

This questionnaire was developed by the researchers after reviewing the relevant literature. The questionnaire consists of 13 close-ended questions related to the most common over the counter medications wrong practices. The score of the questionnaire varied from 0-13. A score range from (0-7) indicates unsatisfactory practice, and a score of (8-13) indicates satisfactory practice. The Cronbach's alpha of the scale was 0.90.

Tools Validity

The Perceived benefits, barriers, risks, and self-efficacy questionnaire was translated into Arabic by the researchers through a back translation procedure. To establish the validity of the questionnaire content, all the study questionnaires were reviewed item by item by a panel of experts in pediatric nursing and a physician. In addition, a pilot study was done with 10% of the study sample who had the same inclusion criteria as the subjects in this study to assess the reliability, readability, time needed, and culture congruence of all the study questionnaires. The results of the pilot study helped in refining the questionnaires and were not included in the analysis.

Ethical consideration

Permission to undertake this study was received from the Faculty of Nursing Institution of Ethical Research Committee, Tanta University was obtained with code number (93-9-2022). In addition, written informed consent was granted from the mothers who agreed to participate in the study. An initial interview was conducted with the mothers in a private room to inform them about the objectives and benefits of the study. Mothers were assured that their participation is voluntary, and they can withdraw from the study at any time without any risk.

Data analysis

The data was analyzed using SPSS version 24 for Windows. Following the normality check, descriptive statistics were employed to analyze the percentages, mean scores, and standard deviation of the descriptive demographic data (SD). Pearson

correlation coefficient (r) was used to determine the relationship between the continuous variables. Inferential statistics such as ANOVA was used to determine the relationship between the perceived risks, mother's practice and socio-demographic variables age, educational level, marital, employment status, and monthly income. Statistical significance was set at p -value 0.05.⁽¹⁴⁾

Results

Table (1) Illustrates socio-demographic characteristics of the studied mothers. The results indicated that slightly more than half (52.9%) of mothers were 30- 40 years old. The majority (97.6%) of the mothers were married and 33.7% had secondary school certificates. Slightly more than half (52.9%) of the mothers had 3 - 4 children, while 1.4% only had more than 4 children. Also, about half (50.8%) of the participants earn less than 1000 EGP per month, while 8.7% of them earn more than 5000 EGP per month. Three-quarters (75.9%) of participating mothers were housewives while 10.9% were working in the medical field.

Table (2) Indicates the frequency of using OTC and source of medications, it was found that, 43.2% ($n=432$) of mothers reported purchasing OTC for their children 3-4 times during this month. Regarding the source of advice about the OTC medicine that they should purchase for their children, the most common source was the pharmacist 43.4% ($n= 434$), using the previous physician's prescription 43.9%, ($n= 439$), and asking friends and relatives for prescriptions 12.7% ($n=127$) are next most common.

Table (3): Shows reasons for using over counter medication. It was observed that the most common reasons indicated by the mothers for using OTC was to save the life of the child in the case of emergency (62.5%), the next common reason was effectiveness of the drug (40.7%), followed by the geographical location of the pharmacy near their house (29.5).

Table (4): Shows most common used over counter medication groups. The most used medications were antipyretics to relieve a child's high temperature (91.9%) followed by antitussive medications to treat cough symptoms (33.1%). Antidiarrheal medicine was used by 25.6% (n=356) of the mothers while Antibiotics were used by 17.8% of the mothers. Anti-inflammatory cortisones were used only by 6% of the mothers.

Table (5): Represents mothers' mean scores of the perceived risks for use of over counter medication of their children the results indicated that, the highest mean was related to the susceptibility to risk 27.18 ± 4.44 followed by perceived severity 25.22 ± 4.47 and perceived self-efficacy 23.36 ± 3.59 .

Figure (1): Demonstrates levels of mothers' reported practices regarding use of over counter medication. The findings showed that 58.9% of participants had unsatisfactory practices, whereas 41.1% had satisfactory practices.

Table (6): Shows the correlation between mothers' perception and reported practice regarding use of over counter medication. A highly positive significant correlation ($r=0.69$

$p=0.0001$) was found between mothers' perception and reported practice.

Table (7): Demonstrates the relation between scores of total mothers' perception regarding use of over counter medication and their socio-demographic data. It was found that, there were highly statistically significant differences in total scores of mothers' perception and their socio-demographic data $P=0.0001$, with exception of residence which represents statistically significant difference only $P=0.015$. On the other hand, there were no statistically significant differences between total scores of mothers' perception with their age and source of medicine $P=0.064$ & $P=0.083$ respectively.

Table (8): Shows relation between scores of total mothers' practices regarding use of over counter medication and their socio-demographic data It was observed that, there were highly statistical significant differences in total scores of mothers' practices and their socio-demographic data $P=0.0001$, with exception of age which represents statistical significant difference only $P=0.016$. On the other hand, there were no statistical significant differences between total scores of mothers' practice with their number of children in family and source of medicine $P=0.429$ & $P=0.183$ respectively.

Table (1): Socio-demographic characteristics of the studied mothers (n=1000)

Bio-socio-demographic characteristics	The studied mothers (n=1000)	
	No.	%
Age (years)		
Less than 20	3	0.3
20 - < 30	344	34.4
30 - < 40	529	52.9
≥ 40	124	12.4
Residence		
Rural	714	71.4
Urban	286	28.6
Educational level		
Illiterate	233	23.3
Primary	24	2.4
Preparatory	154	15.4
Secondary	337	33.7
University	205	20.5
Post graduated	47	4.7
Marital status		
Married	976	97.6
Divorced	21	2.1
Widowed	3	0.3
Number of children in family		
1 - 2	465	46.5
3 - 4	521	52.1
More than 4	14	1.4
Monthly income		
Less than 1000 EGP	508	50.8
From 1000 – less than 2000 EGP	281	28.1
From 2000 – 5000 EGP	124	12.4
More than 5000 EGP	87	8.7
Employment status		
House wife	759	75.9
Working in medical field	109	10.9
Working outside medical field	132	13.2

Table (2): Frequency of using over counter medication and source of medications

Variable	(n=1000)	%
Frequency of using OTC over one month		
1 – 2 times	313	31.3
3 – 4 times	432	43.2
More than 4 times	255	25.5
Source of advice		
Pharmacist	434	43.4
Physician in previous visit	439	43.9
Friends and relative	127	12.7

Table (3): Reasons for using over counter medication.

Reasons	(n=1000)	%
Near of pharmacy	295	29.5
Less cost	275	27.5
Other suggests	20	2.0
Effectiveness of drug	407	40.7
Save life for children in severe casasa	625	62.5
From previous experience	181	18.1

*Respondents could choose more than one reason

Table (4): Most common used over counter medication groups.

Medications group	N	%
Antipyretic	919	91.9
Anti-inflammatory cortisone	50	5.0
Anti-edematous	91	9.1
Antitussive	331	33.1
Antibiotics	178	17.8
Antidiarrheal	256	25.6
Anti-emetic	136	13.6

*Respondents could choose more than one reason

Table (5): Mothers' mean scores of the perceived risks for use of over counter medication of their children (n=1000).

Domain	Mean	SD	Scale range	Study range	participants
Perceived Susceptibility	27.18	4.44	6-30	10 – 30	
Perceived severity	25.22	4.47	6-30	10 – 30	
Perceived benefits	8.36	2.59	4-20	4 – 19	
Perceived barriers	9.39	3.78	6-30	6 – 25	
Perceived self-efficacy	23.36	3.59	6-30	10 – 30	

**Figure (1): Levels of mothers' reported practice regarding use of over counter medication (n=1000)****Table 6: Correlation between mothers' perceived risks and reported practice regarding use of over counter medication (n=1000)**

Variables	Mothers' perceived risks (n=1000)	
	r	P
Mothers' reported practice	0.69	0.0001**

** (P<0.01)

Table (7): Relation between scores of total mothers' perceived risks regarding use of over counter medication and their socio-demographic data (n=1000).

Bio-socio-demographic characteristics	The studied mothers (n=1000)	
	Mean ± SD	F value or t-test
Age (years)		
Less than 20	70.33 ± 1.52	2.433
20 - < 30	73.80 ± 6.54	0.064
30 - < 40	72.79 ± 6.75	
≥ 40	72.22 ± 7.47	
Residence		
Rural	73.39 ± 6.62	2.431
Urban	72.24 ± 7.12	0.015*
Educational level		
Illiterate	68.91 ± 6.92	
Primary	71.75 ± 6.55	
Preparatory	72.81 ± 6.07	8.360
Secondary	73.37 ± 6.44	0.0001**
University	74.72 ± 7.85	
Post graduated	75.50 ± 3.76	
Marital status		
Married	76.93 ± 3.92	
Divorced	75.33 ± 7.99	37.084
Widowed	72.91 ± 6.54	0.0001**
Number of children in family		
1 – 2	72.18 ± 8.71	
3 – 4	72.45 ± 7.23	12.128
More than 4	74.38 ± 5.96	0.0001**
Monthly income		
Less than 1000 EGP	69.82 ± 0.832	
From 1000 – less than 2000 EGP	72.22 ± 7.89	10.205
From 2000 – 5000 EGP	73.73 ± 5.61	0.0001**
More than 5000 EGP	75.58 ± 11.53	
Job		
House wife	70.60 ± 7.07	
Working in medical field	73.38 ± 9.21	8.135
Working outside medical field	73.26 ± 6.16	0.0001**
Source of medicine		
Pharmacist	72.75 ± 5.40	
Physician in previous visit	73.78 ± 7.39	5.751
Friends and relative	71.64 ± 8.41	0.083

* P<0.05 , ** P<0.01

Table (8): Relation between scores of total mothers' practices regarding use of over counter medication and their socio-demographic data (n=1000).

Bio-socio-demographic characteristics	The studied mothers (n=1000)	
	Mean ± SD	F value or t-test
Age (years)		
Less than 20	7.300 ± 0.05	4.821
20 - < 30	7.555 ± 2.33	0.016*
30 - < 40	7.880 ± 1.50	
≥ 40	7.435 ± 2.76	
Residence		
Rural	7.767 ± 1.99	7.029
Urban	7.580 ± 2.03	0.002**
Educational level		
Illiterate	7.438 ± 2.26	
Primary	7.900 ± 0.00	
Preparatory	7.915 ± 1.37	17.936
Secondary	8.918 ± 1.56	0.0001**
University	8.936 ± 2.32	
Post graduated	9.340 ± 1.20	
Marital status		
Married	9.315 ± 2.02	
Divorced	8.300 ± 0.47	9.961
Widowed	6.954 ± 6.05	0.0001**
Number of children in family		
1 – 2	7.543 ± 2.22	
3 – 4	8.243 ± 1.86	4.921
More than 4	8.757 ± 0.36	0.429
Monthly income		
Less than 1000 EGP	7.490 ± 1.88	
From 1000 – less than 2000 EGP	7.950 ± 1.68	28.951
From 2000 – 5000 EGP	8.371 ± 1.92	0.0001**
More than 5000 EGP	9.197 ± 2.72	
Job		
House wife	7.682 ± 2.05	
Working in medical field	9.623 ± 1.09	10.872
Working outside medical field	8.143 ± 2.09	0.002**
Source of medicine		
Pharmacist	8.842 ± 2.02	
Physician in previous visit	8.471 ± 2.05	6.921
Friends and relative	8.445 ± 1.48	0.183

* P<0.05 ,

** P<0.01

Discussion

Using over-the-counter medications for children is a commonly neglected problem in developed and undeveloped countries, especially in Egypt. There are scarce studies done in Egypt that investigated this problem and most of them were done in Upper Egypt and Alexandria and non were carried out in the Egypt Delta region⁽¹⁵⁾. The present study aimed to assess mothers' perceived risks and reported practices regarding over counter medications for children under five years.

All mothers in the present study frequently used OTC for their children and nearly half of them used OTC three to four times over the last month. This may be due to repeated chest infections and inflammatory conditions for this age group of children and maternal desires to manage repeated symptoms at home. Also children less than five years old are characterized by active movement and curiosity to discover their environment which increases the risks to acquire repeated infection. Our finding is in agreements with **Younes (2011)**⁽¹⁶⁾ who reported that nearly one-quarter of their participated mothers used OTC medication at least once per week.

The primary source of over-the-counter medication information in the current study was physicians followed by pharmacists then friends and relatives. These results matched with **Alenazi K 2021**⁽¹⁷⁾ who reported that the primary source of the parents' information about medication ranked as the follow 87.4% the physicians, 25.7% pharmacists, internet 22.2%, friends 8.6%, and relative 7.2%. The primary reason for utilizing over-the-

counter medications, according to nearly two-thirds of the mothers, was to preserve their children's lives in emergencies. This finding is consistent with **Younes 2011**⁽¹⁶⁾, who indicated that treating the child in severe situations, particularly at late hours of the night, was the primary reason for using OTC medications for children.

Regarding most common group of medication used, most of the mothers reported using antipyretic making it the most frequently used medications category followed by antitussive. This may be connected to the fact that fever and coughing are the most typical symptoms of illness among children under the age of five. These findings are consistent with those of **Alenazi K 2021**⁽¹⁷⁾, **Kasim K (2018)**⁽¹⁵⁾ who reported that 70% of their participants mothers gave OTC antipyretics to children under 5 years who complained of fever, and common cold.. Additionally, **Suluhan (2016)**⁽¹⁸⁾ revealed that mothers administered antipyretics to their children without seeking medical advice.

In this study, the mean scores of mothers' perceptions regarding perceived risks of over counter medications related to perceived susceptibility, severity, and self - efficacy were high while the mean scores of mothers' perception of perceived benefits and barriers were low. The presenting mean scores of mothers' perceived risk scale are arranged from the highest to lowest as follows perceived susceptibility (27.18), perceived severity (25.22), perceived self-efficacy(23.36), perceived barriers (9.39), and perceived benefits(8.36). These

findings might be explained by the reason that mothers were more aware of the dangers of taking drugs without a prescription as a result of extensive media exposure. This finding in agreement with **Alosaimi (2022)**⁽¹⁹⁾ who stated that the mean score for perceived risk scale domains ranked from the highest to the lowest were as follows: perceived susceptibility (1.56; 0.36), perceived severity (1.52;0.29) and self- efficacy (1.45;0.32).

The present study evaluated that mothers practices regarding use of over counter medication and found that more than half of the participating mothers had unsatisfactory practice. The researcher's explanation is the majority of the studied mothers had Lower educational level and this may be lack knowledge about searching, finding, understanding and evaluating the medical information, as opposed to those with higher education levels. The results of the present study in accordance with **Sezer T (2022)**⁽²⁰⁾, **Pavyde (2015)**⁽²¹⁾ and **Yu (2014)**⁽²²⁾ who show that individuals with higher education levels used medication more appropriately than those with lower education levels. The present study evaluated mothers ' practices toward over counter in relation to their socio-demographic characteristics (age, residence, education, marital status, monthly income). It was observed that, there were highly statistical significant differences in total scores of mothers' practices and their socio-demographic data $P=0.0001$, with exception of age which represents statistical significant difference only $P=0.016$. The finding in accordance the **Suluhan(2016)**⁽¹⁸⁾

and **Barutcu (2017)**⁽²³⁾ who reported that that mothers with lower educational levels exhibit behaviors of using medication without prescriptions and improper storage of unused medicine.

The finding of the present study indicated that the age of more than half of the participated mothers was ranged between thirty to forty years old and had three to four children. This indicates that their experience with age and maternal hood might have a role in increasing their frequency usage of medication for their children without medical description. This finding was in agreement with the study conducted by **Alenazi K 2021**⁽¹⁷⁾ who found that most of the parents were more than thirty years of age and had more than five children.

Regarding job type, three quarter of mothers were housewife and the educational level of the majority was precollege education. The monthly income less than one thousand EGP. From the researcher point of view, all of the previous factors had the main impact on the prevalence of maternal self- medication behavior in Egypt especially in rural areas. The present finding congruent with **Castro A (2022)**⁽²⁴⁾ who stated that the prevalence of self-medication was 49.6% related to many factors such as age, having two or more children, children, medium educational level, unemployment and socioeconomic level. In the same line other study conducted by **Alosaimi (2022)**⁽¹⁹⁾ who suggested that education and job type influence OTC medication use.

However findings reported by **Sharma (2006)**⁽²⁵⁾ contradict with the present

results who observed that increased mothers self-medication for their children was associated with higher education level and socioeconomic status. Also **Zaki and Albarraq (2014)** ⁽²⁶⁾ stated that the high prevalence of well-educated mothers in their study might help mothers to conduct internet searches and gain knowledge regarding over counter drug use.

Conclusion

Based on the results of this study, it can be concluded that using OTC medications is common among the study participants and for different reasons. There is a relationship between mothers' perceived risks and the practices of using the OTC medications. The practices of using OTC were related to the participants' socio-demographic background.

Recommendations

Public education programs should be organized regarding the use of over counter medication.

Mothers' awareness should be raised regarding benefits and barriers of over counter medication through mass media.

Health regulation polices should be made to regulate mothers use of over counter medication and decrease adverse effect of it.

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