

Malaysian parental attitudes toward medicine use in children

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ABSTRACT

Introduction: Parental attitudes can have a significant impact on the use of medicines in children. This study aimed to investigate parental attitudes towards medicines used in children in Malaysia and the sociodemographic factors associated with it.

Materials and Methods: A cross-sectional study using convenience sampling was conducted among 230 parents with children aged 12 years and below in Malaysia. Data were collected between November 2020 and January 2021 through online platforms.

Results: The majority of respondents were mothers (67.8%) and aged between 40-49 years (43.0%). The results showed that antipyretics were the most commonly used medicines followed by cough and cold medicines, antibiotics, and analgesics. The results further revealed that parents have neutral attitudes toward the use of medicines in children (69.90 ± 12.12 from a total score of 105), and mothers and younger parents having a significantly more positive attitude than fathers and older parents, respectively ($p < 0.05$).

Conclusion: This study provided insights into the types of medicines commonly used in children and parental attitudes towards medicines used in children in Malaysia.

KEYWORDS:

Attitudes; children; medicines; parents

INTRODUCTION

Children are especially vulnerable to medication errors due to their unique state of physiological development.¹ Also, given that the misuse or abuse of medications in children can lead to numerous health problems, parental monitoring is imperative in administering children's medications.

Previous studies revealed that most parents had positive attitudes toward the necessity of medicines but mostly worried about the adverse effect and interactions of medicines in children.^{2,3} This can be observed among parents with Attention Deficit Hyperactivity Disorder (ADHD) children whereby they discontinued the medications of their children due to the side effect experienced and perceived lack of medication effectiveness.⁴ Similarly, a study involving parents of epileptic children admitted to the importance of medication and expressed concerns about its detrimental

effects.⁵ As a result, parents with concerns on the risk of medicines demonstrated preference towards Complementary and Alternative Medicines (CAMs).⁶ The practice of parental self-medication has also been widely discussed. Parents tend to self-medicate their child if they are familiar with the illness or symptoms or when they consider the disease as mild.⁷

Apart from that, parents can influence the adherence of medication and the medicine-taking behaviour of children because children often grow up to emulate behaviour of the parents. Experience with medicines or observing medication-taking behaviour among family members may also affect beliefs and expectations of children on the use of medicines.⁸ This can be observed in a study among self-medicated adolescents in Kuwait which showed that parents were their common source of information on medications.⁹

To date, general studies on parental attitudes toward medicines use in children in Malaysia is scarce compared to its study on specific medical conditions. Moreover, little is known about factors that contribute to parental attitudes toward medicine used in children. Therefore, this study aimed to investigate parental attitudes toward medicines used in children in Malaysia and its association with sociodemographic factors.

MATERIALS AND METHODS

This was a cross-sectional study using a convenience sampling method. The inclusion criteria include Malaysian parents of children aged 12 years and below who can understand Malay or the English language. Those who did not fulfil the inclusion criteria were excluded. A questionnaire was created using Google Forms and shared by the researchers across various social media platforms such as Facebook, WhatsApp, and Twitter, which was then shared to other contacts, i.e. snowball sampling. The data were collected from November 2020 until January 2021 in Malaysia. The calculated sample size using the Raosoft® calculator for this study was 385 respondents.

Prior to answering the online questionnaire, information on the study and invitation to participate were shared at the social media platforms. The participants would need to read the information about the study before answering the questionnaire. Participation in this study was voluntary and they had the right to withdraw from this study at any time. By answering the questionnaire, they were considered to have consented to participate in the study. The questionnaire was

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answered once by the respondent regardless of the number of children that they have. The data of the respondents were checked thoroughly to ensure that no duplicate responses were recorded. All information gathered in this study were kept anonymous and strictly confidential.

The present study was approved by the Research Committee of Faculty of Pharmacy and the Research Ethics Committee of Universiti Kebangsaan Malaysia (UKM PPI/111/8/JEP-2020-647).

Instrument

A questionnaire to explore attitudes of parents towards medicating children was adapted from a validated questionnaire tested in Australia¹⁰, which had also been used on Finnish and Jordanian parents^{2,3}. The English version of the questionnaire was translated into Malay using the forward-backward method and both versions were administered among the participants. The content of the questionnaire was examined by five experts consisted of pharmacists and academicians and was amended accordingly. The questionnaire comprised of three sections described below.

a) Section A

This section consisted of questions on the demographical data of parents such as age, ethnicity, religion, education level, employment status, household monthly income and number of children.

b) Section B

The health status of children was assessed in this section. The questions required a 'Yes' or 'No' answer on medically diagnosed disease, and the current use of prescription and over-the-counter (OTC) medicines in their children. Participants were also asked to select types of medicines commonly used in treating their children.

c) Section C

This section consisted of attitudinal statements of 21 items to analyse parental attitude towards medicating children. Each item was rated using the five-point Likert scale (strongly disagree, disagree, neutral, agree, and strongly agree). The scoring of negative statements was reversed and the total score of attitudes was computed. The total scores ranged from 21 to 105 and were classified into negative (21-48), neutral (49-76), and positive (77-105) attitudes².

A pilot study was conducted among 30 parents to test the suitability and reliability of the questionnaire. Cronbach's alpha was used to test questionnaire scale reliability and a coefficient value of 0.837 was obtained, indicating good internal consistency. Based on the findings of the pilot study, evaluations and amendments were made to the questionnaire including simplification of medical terms to improve participants' comprehension.

Statistical analysis

Data collected were analysed using the IBM® SPSS (version 25.0). Descriptive statistics were tabulated for demographic data, the health status of children, commonly used medicine,

and responses of parents towards attitudinal statements using percentages for categorical variables. Parental attitudes towards medicine were determined using the total score of attitudes with a higher score indicated a more positive attitude. The normality test showed that the data were normally distributed. Independent samples t-test was used to compare the score of attitude of parents toward children's use of medicine between the genders, while one-way analysis of variance (ANOVA) was utilised to test the score difference between the age group, ethnicity, religion, level of education, household monthly income, and number of children. Tukey test was performed following one-way ANOVA with the statistical significance level at $p < 0.05$. Pearson correlation was used to identify correlation between the age of youngest child and total attitude score of the parents.

RESULTS

A total of 272 parents returned the questionnaire; however, only 230 parents were included (84.56%). The remaining were excluded as they did not fulfill the inclusion criteria. The mean \pm SD of the youngest child was 5.62 \pm 3.79. Majority of the respondents were mothers (67.8%) aged between 40-49 years old (43.0%), Malay (91.3%), had college or university qualifications (89.6%), and working (86.5%). Details of the sociodemographic data are presented in Table I.

Table I also demonstrated that only 13.5% of the parents currently used prescription medicines and 34.8% used OTC medicines and vitamins for their children. Antipyretic was noted as the most commonly used medicines by parents (79.1%), followed by cough and cold products (66.1%), antibiotics (38.7%), and analgesics (16.5%). Most of the parents reported having neutral attitude (68.7%) i.e. neither agree or disagree towards medicines used in children. The overall score of parental attitude is categorised as neutral (69.90 \pm 12.12). Furthermore, it was revealed that most parents agreed that medicines (85.7%) and prescriptions by a doctor (88.3%) are necessary for treating illnesses.

Prescription medicines were regarded as effective and safe for 76.5% and 77.4% of the parents, respectively, whereas 60.8% and 55.2%, respectively believed so about over the counter (OTC) medicines. Only 27.4% generally agreed to the statement that they would try to avoid giving medicines to children and 36.5% of the parents considered medicines as unnatural to the human body. Moreover, more than half of the parents expressed concerns about the side effects of medicine (53.5%), and 47.4% worried about the interactions of medicines toward their children. The complete parental responses toward medicines used in children are presented in Table II.

Table III showed the comparison of parental attitude scores between different groups. Mothers displayed a more positive attitude towards medicating children with significantly higher mean scores of attitudes (71.41 \pm 12.03) compared to fathers (66.72 \pm 11.77). The results also showed that attitude scores were significantly different across age group of the parents. The attitudes score of parents aged 20-29 and 30-39 were significantly higher in comparison to other age groups

Table I: Demographic of respondents and child's clinical data (n=230)

Demographic characteristic		Frequency (n%)
Relationship to the child	Mother	156 (67.8)
	Father	74 (32.2)
Age group	20-29	22 (9.6)
	30-39	85 (37.0)
	40-49	99 (43.0)
	≥50	24 (10.4)
Ethnicity	Malay	210 (91.3)
	Chinese	11 (4.8)
	Indian	4 (1.7)
	Others	5 (2.2)
Religion	Islam	214 (93.0)
	Buddha	10 (4.3)
	Christian	3 (1.3)
	Hindu	3 (1.3)
	Others	0 (0)
Highest level of education	Primary school	1 (0.4)
	Secondary school	23 (10.0)
	College or university	206 (89.6)
Current employment status	Student	2 (0.9)
	Housewife	25 (10.9)
	Working (Full time/Part time)	199 (86.5)
	Unemployed	3 (1.3)
	Retired	1 (0.4)
Household monthly income	<RM4000	48 (20.9)
	RM4000 – RM9000	124 (53.9)
	>RM9000	58 (25.2)
Number of children	1	40 (17.4)
	2	46 (20.0)
	3	63 (27.4)
	4	34 (14.8)
	≥5	47 (20.4)
Age of youngest child (mean ± SD)		5.62±3.79
Child has illness diagnosed by doctor	Yes	32 (13.9)
	No	198 (86.1)
Current use of prescription medicine by the child	Yes	31 (13.5)
	No	199 (86.5)
Current use of OTC medicine and vitamin by the child	Yes	80 (34.8)
	No	150 (65.2)
Types of medicines commonly used by child	Antipyretic	182 (79.1)
	Cough and cold	152 (66.1)
	Antibiotics	89 (38.7)
	Analgesic	38 (16.5)
	Others	22 (9.6)
Parental attitudes towards medicines used in children	Overall mean ± SD	69.90 ± 12.12
	Positive	63 (27.4)
	Neutral	158 (68.7)
	Negative	9 (3.9)

Table II: Parental attitudes towards the use of medicine in children (n=230)

Statement	Frequency (% of the responses)				
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Medicines are necessary in treating illnesses.	0 (0)	5 (2.2)	28 (12.2)	108 (47.0)	89 (38.7)
Medicines that a doctor has prescribed for the child are necessary.	0 (0)	2 (0.9)	25 (10.9)	94 (40.9)	109 (47.4)
Prescription medicines are effective.	0 (0)	3 (1.3)	51 (22.2)	126 (54.8)	50 (21.7)
I try to avoid giving medicines to my child.	44 (19.1)	61 (26.5)	62 (27.0)	34 (14.8)	29 (12.6)
Prescription medicines are safe.	2 (0.9)	7 (3.0)	43 (18.7)	110 (47.8)	68 (29.6)
Over-the-side counter (OTC) medicines are effective.	2 (0.9)	8 (3.5)	80 (34.8)	113 (49.1)	27 (11.7)
Over-the-counter (OTC) medicines are safe.	2 (0.9)	7 (3.0)	94 (40.9)	99 (43.0)	28 (12.2)
I take care of my child's minor ailments (eg: diarrhoea, sore throat, cough, fever) by using OTC medicines.	6 (7.0)	29 (12.6)	55 (23.9)	101 (43.9)	29 (12.6)
Fever, a natural means of defense of the child's body, should not be treated artificially with medicines.	31 (13.5)	82 (35.7)	66 (28.7)	35 (15.2)	16 (7.0)
Doctors prescribe antibiotics to children too often.	33 (14.3)	70 (30.4)	74 (32.2)	41 (17.8)	12 (5.2)
Medicines are unnatural to the human body.	12 (5.2)	40 (17.4)	94 (40.9)	52 (22.6)	32 (13.9)
Medicines can disturb the child's body's capability to heal illnesses on its own.	19 (8.3)	65 (28.3)	83 (36.1)	38 (16.5)	25 (10.9)
I try to take care of my child's ailments by some other means rather than using medicines.	21 (9.1)	54 (23.5)	78 (33.9)	54 (23.5)	23 (10.0)
I take my child to see a doctor only when other ways of treatment at home did not help.	26 (11.3)	46 (20.0)	49 (21.3)	75 (32.6)	34 (14.8)
Medicines are dangerous for my child, even when used according to the instructions.	54 (23.5)	96 (41.7)	49 (21.3)	23 (10.0)	8 (3.5)
I usually give less dose of medicines to the child than is recommended in the instructions.	59 (25.7)	91 (39.6)	46 (20.0)	24 (10.4)	10 (4.3)
The child needs to learn how to bear the symptom (eg. pain) to avoid taking medicines (eg. painkiller).	53 (23.0)	64 (27.8)	56 (24.3)	42 (18.3)	15 (6.5)
Side effects of medicines towards children worries me.	6 (2.6)	30 (13.0)	71 (30.9)	63 (27.4)	60 (26.1)
Interactions of medicines worry me.	10 (4.3)	32 (13.9)	79 (34.3)	63 (27.4)	46 (20.0)
Long-term use of medicines (eg. painkiller) reduces the symptom (eg. pain) threshold for your child.	14 (6.1)	28 (12.2)	81 (35.2)	67 (29.1)	40 (17.4)
The more you need to use a medicine (eg. painkiller) on your child, the less effective they are for the symptom (eg. pain).	15 (6.5)	30 (13.0)	92 (40.0)	55 (23.9)	38 (16.5)

($p < 0.05$; Table IV). No significant differences were observed between total attitude scores parents with other sociodemographic variables. There was a significant negative correlation between age of the youngest child and total attitude score ($r = -0.188$, $p < 0.05$).

DISCUSSION

In this present study, age group and respondents' relationship to the child were the only sociodemographic factors that were significantly associated with the attitudes of parents towards the use of medicines in children. Results showed that mothers had significantly more positive attitudes in medicating their children compared to fathers, which might ascribe to the mother's common role in taking care of the family's health.² Other studies also concurred that mothers are the main caretaker of their children and they have better capabilities to manage children's ailment.^{3,11,12}

The present study also found that parents aged 40 years old and above had more negative attitudes in medicating children compared to younger parents. This result is in line with a study by Hameen-Anttila et al. which reported that older parents tend to avoid medicines and had more fears about the risks of medicines.² These were corroborated by a study on parental attitudes towards antibiotic use, which

showed that older parents were more likely to worry over the side effects of antibiotics.¹³ In contrast, a previous study among the general population in Sweden reported that attitude towards medication improved with age.¹⁴ Similarly, Suleman et al. demonstrated that respondents aged 56-65 years old had more positive views toward medicines than the lower age groups.¹⁵ These conflicting findings could be attributed to different medication-taking experiences by the older parents that may influence their attitudes toward medicines.

This study established that antipyretic was the most frequently used medicine by Malaysian parents to treat their children. Similar results were observed in studies conducted among Indian and Korean parents.^{16,17} Other reports also showed that parents often self-medicate their children at home with antipyretics.¹⁸⁻²¹ The result might be attributed to fever being the common illness experienced by children as well as perturbation of parents about the discomfort of their child, persistently high body temperature, and fear of untreated fever complications.^{22,23} Moreover, antipyretics such as paracetamol are readily available at community pharmacies and parents usually have antipyretics stocked at home.⁷ These findings could be due to the fact that paracetamol is considered safe to be used for children if administered at the proper dosage.

Table III: Comparisons of parental attitudes scores between different groups

Variable		Mean ± SD Attitude score	P-value
Relationship with the child a	Mother	71.41 ± 12.03	0.006*
	Father	66.72 ± 11.77	
Age group b	20-29	75.91 ± 13.15	0.001*
	30-39	72.44 ± 12.96	
	40-49	67.54 ± 10.66	
	≥50	65.17 ± 10.07	
Ethnicity b	Malay	69.99 ± 12.23	0.167
	Chinese	65.91 ± 9.59	
	Indian	64.50 ± 11.90	
	Others	79.40 ± 8.62	
Religion b	Islam	70.13 ± 12.21	0.669
	Buddha	65.40 ± 9.95	
	Christian	70.67 ± 15.50	
	Hindu	67.67 ± 12.34	
Highest level of education b	Primary school	61.00 ± 0.00	0.718
	Secondary school	69.09 ± 8.34	
	College or university	70.03 ± 12.50	
Current employment status b	Student	63.50 ± 20.51	0.176
	Housewife	74.80 ± 11.04	
	Working (Full time /Part time)	69.46 ± 12.17	
	Unemployed	61.67 ± 4.73	
	Retired	72.00 ± 0.00	
Household monthly income b	<RM4000	69.75 ± 11.59	0.986
	RM4000 – RM9000	70.02 ± 13.06	
	>RM9000	69.76 ± 10.54	
Number of children b	1	71.68 ± 13.64	0.086
	2	73.46 ± 12.82	
	3	68.97 ± 11.04	
	4	68.62 ± 10.56	
	≥5	67.09 ± 11.93	

*Indicates significant difference at p<0.05

^aIndependent T-test

^bOne-way ANOVA

Table IV: Post-hoc analysis (Tukey Test)

Variable			Mean difference	P-value
Age group 20 -29	30-39	30-39	3.47	0.61
		40-49	8.37	0.02*
		≥50	10.74	0.01*
30-39	20-29	20-29	-3.47	0.61
		40-49	4.90	0.03*
		≥50	7.27	0.04*
40-49	20-29	20-29	-8.37	0.02*
		30-39	4.9	0.03*
		≥50	2.37	0.81
≥50	20-29	20-29	-10.742	0.01*
		30-39	-7.269	0.04*
		40-49	-2.369	0.81

*The mean difference is significant at P<0.05

Cough and cold drugs were the next most commonly used medicine by parents in this study (66.1%). A previous study in Kuala Lumpur revealed that almost 90% of parents had administered cough and cold medicines to their child to relieve the symptoms of upper respiratory tract infections (URTIs) and some parents admitted to administering it for sleepiness effect.²⁴ Nevertheless, it is not encouraged to use cough and cold medicines in children less than two years old because of the unsuitable active ingredients that lack efficacy data and may cause safety concerns in young children.^{25,26}

Parents in this study displayed neutral attitudes toward medicines use in children with a mean score of 69.90 ± 12.12 (max score =105). However, majority of the parents in this study agreed that medicines are necessary for children, which may indicate that most of them have an optimistic attitude towards medicines. This is in accord with an earlier local study by Dawood et al., whereby majority of the parents agreed that medicine is important for their children.¹² The results of this study further showed that more respondents agreed that prescription medicines are effective and safe compared with OTC medicines. Other studies had also shown differing views on prescription and OTC medicines by parents.^{2,3}

Aside from that, small proportions of parents found to preferably avoid giving medicines to their children and more than half of the respondents felt worried about the side effects and interactions of medicines and may choose to use lower dose of medicines for their children. This happened as some parents are not knowledgeable about the side effects of medicines and consequently might avoid medicines or find other alternatives.^{3,12} Prior studies reported parallel results with 69% and 80% of Finnish and Jordanian parents expressed concerns regarding medicine interactions and side effects and suggested the need for education on these aspects.^{2,3} Therefore, physicians and pharmacists should help educate parents on medicines' side effects and interactions as some parents admitted willingness to initiate medication after being more informed about the medicines.²⁷

There were several limitations to this study. The convenience sampling method employed may have resulted in selection bias. Additionally, the relatively small sample size, which did not cover all the states and unequal representation of each ethnicity in Malaysia, might limit the generalisation of the population. Furthermore, the accuracy of the findings in this survey was dependent on the honesty and understanding of the respondents. Future research could benefit from a stratified random sampling method to reduce sampling bias and to ensure proper representation of the Malaysian population. Despite these limitations, this study was the first to report on Malaysian parental attitudes towards medicines used in children.

CONCLUSION

This study provides valuable baseline information into the types of medicines commonly used in children and the parental attitudes towards medicines use in children in Malaysia. Antipyretics were reported as the most commonly used medicines and the majority of the parents had a neutral

attitude towards medicine used in their children. Also, mothers and younger parents displayed a more positive attitude towards medicines than their counterparts. Efforts to improve the attitude of parents towards medication use are imperative such as providing education to them particularly regarding the importance of medicines as well as its efficacy and safety. This can be done by disseminating relevant information through mainstream and social media or conducting awareness campaigns focusing on children's health and medicines. Further researches are needed to explore other factors that may influence parental attitudes toward medicine used in children in Malaysia.

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REFERENCES

- Lan YH, Wang KW, Yu S, Chen JJ, Wu HF, Tang FI. Medication errors in pediatric nursing: assessment of nurses' knowledge and analysis of the consequences of errors. *Nurse Educ Today* 2014; 34(5): 821-8.
- Hameen-Anttila K, Halonen P, Siponen S, Holappa M, Ahonen R. Parental attitudes toward medicine use in children in Finland. *Int J Clin Pharm* 2011; 33(5): 849-58.
- Mukattash TL, Ny AL, Abu Farha RK, Jarab AS, Hameen-Anttila K, Vainio K et al. An audit on parental attitudes towards medicines used in children. *Saudi Pharmaceutical Journal* 2017; 26(1): 133-137.
- Toomey SL, Sox CM, Rusinak D, Finkelstein JA. Why do children with ADHD discontinue their medication? *Clinical Pediatrics (Phila)* 2012; 51(8): 763-769.
- Ilić V, Bogičević D, Miljković B, Vezmar-Kovačević S. Association between adverse effects and parental beliefs about antiepileptic medicines. *Medicina* 2018; 54(4): 60.
- Siponen S, Ahonen R, Kiviniemi V, Hameen-Anttila K. Association between parental attitudes and self-medication of their children. *International Journal of Clinical Pharmacy* 2013; 35(1): 113-20.
- Mukattash TL, Jarab AS, Khawaldeh A, Nusair M. Parental self-treatment of their children in Jordan, a qualitative study. *Journal of Pharmaceutical Health Services Research* 2019; 10(3): 317-23.
- Dawood OT, Ibrahim MIM, Abdullah AC. Factors influencing children's knowledge and attitudes toward medicines in Malaysia. *Journal of Men's Health* 2011; 8(4): 288-98.
- Abahussain E, Matowe LK, Nicholls PJ. Self-reported medication use among adolescents in Kuwait. *Medical Principles and Practice* 2005; 14(3): 161-4.
- Halim M, Vincent H, Saini B, Hameen-Anttila K, Vainio K, Moles R. Validating the children's medicines use questionnaire (CMUQ) in Australia. *Pharmacy World & Science* 2010; 32(1): 81-9.
- Awadh AI, Hassali MA, Al-Lela OQ, Bux SH, Elkalimi RM, Hadi H. Does an educational intervention improve parents' knowledge about immunization? Experience from Malaysia. *BMC Pediatrics* 2014; 14(1): 254.
- Dawood OT, Ibrahim MIM, Palaian S. Parent's knowledge and management of their children's ailments in Malaysia. *Pharmacy Practice* 2010; 8(2): 96-102.
- Rousounidis A, Papaevangelou V, Hadjipanayis A, Panagakou S, Theodoridou M, Syrogiannopoulos G et al. Descriptive study on parents' knowledge, attitudes and practices on antibiotic use and misuse in children with upper respiratory tract infections in Cyprus. *International Journal of Environmental Research and Public Health* 2011; 8(8): 3246-62.

14. Isacson D, Bingefors K. Attitudes towards drugs – A survey in the general population. *Pharmacy World & Science* 2002; 24(3): 104-10.
15. Suleman F, Ally S, Bayat S, Essack R, Moodley R, Mtembu T et al. Differences in attitudes towards medication between population groups in the Durban metropolitan area of South Africa. *International Journal of Pharmacy Practice* 2009; 17(4): 237-41.
16. Naaraayan S, Rathinabalan I, Seetha V. Self-medication pattern among children attending a tertiary hospital in South India: A cross-sectional study. *International Journal of Contemporary Pediatrics* 2016; 3(4):1267-71.
17. You M-A, Nam S-M, Son Y-J. Parental experiences of medication administration to children at home and understanding of adverse drug events. *The Journal of Nursing Research* 2015; 23(3): 189-96.
18. Albattat F, Al-Omran Z, Alkhars A, Alhashim H, Alnazhah S, Alghadeer F. The prevalence and attitude of parental self-medication among children in Al Ahsa, Saudi Arabia. *International Journal of Medicine in Developing Countries* 2020; 4(11): 1952-58.
19. Gohar UF, Khubaib S, Mehmood A. Self-medication trends in children by their parents. *Journal of Developing Drugs* 2017; 6(2): 173.
20. Pileggi C, Mascaro V, Bianco A, Pavia M. Over-the-counter drugs and complementary medications use among children in Southern Italy. *BioMed Research International* 2015; 1-8.
21. Zyoud SE, M Shtaya R, Q Hamadneh D, N Sawalmeh S, A Khadrah H, R Zedat R, et al. Parental knowledge, attitudes, and practices towards self-medication for their children: A cross-sectional study from Palestine. *Asia Pacific Family Medicine* 2020; 18(1).
22. Badawy NA, Alhajraf AF, Alsamdan MF. Kuwaiti parent's knowledge of their children's fever and their patterns of use of over the counter antipyretics. *Australasian Medical Journal* 2017; 10(10): 848-55.
23. Bong WT, Tan CE. Knowledge and concerns of parents regarding childhood fever at a public health clinic in Kuching, East Malaysia. *Open Access Macedonian Journal of Medical Sciences* 2018; 6(10): 1928-33.
24. Yong CC, Islahudin F, Shah NM. Knowledge, attitude and perception of parents on the use of cough and cold medications in children. *Southeast Asian Journal of Tropical Medicine and Public Health* 2015; 46(3): 512-25.
25. Eiland L, Salazar M, English T. Caregivers' perspectives when evaluating nonprescription medication utilization in children. *Clinical Pediatrics* 2008; 47:578-87.
26. Martin-Perez M, Lopez De Andres A, Barcenilla Gonzalez MA, Jimenez-Garcia R, Hernandez-Barrera V, Jimenez-Trujillo I, et al. Parental administration of over-the-counter medication to Spanish children: A population-based national study. *Journal for Specialists in Pediatric Nursing* 2016; 21(2): 64-73.
27. Khan MU, Aslani P. Exploring factors influencing medication adherence from initiation to discontinuation in parents and adolescents with Attention Deficit Hyperactivity Disorder. *Clinical Pediatrics (Phila)* 2020; 59(3): 285-96.