



PARENTS' AWARENESS OF RATIONAL DRUG USE

Ebeveynlerin akılcı ilaç kullanım farkındalığı

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Abstract

This study was designed to determine awareness of parents about rational drug use and the influencing factors. The study was completed with 322 parents with children aged 0–18 years who consulted the pharmacy and volunteered to participate in the study. As a data collection tool, a “Descriptive Questionnaire Form” and a “Questionnaire for Awareness of Parents About Rational Drug Use” were employed. The data were assessed using descriptive (number, percentage, and mean) and statistical (t-test, Mann-Whitney U, ANOVA, and Kruskal-Wallis test) methods. It was determined that over-the-counter antipyretics were used by 53.1% of the parents for their children. Parents' awareness of rational drug use was above the average level (43.17±7.34). The use of over-the-counter analgesics, vitamins, and antibiotics for their children, asking the physician to prescribe medication at each examination, educational background, and employment had an effect on their awareness levels of rational drug use ($p<0.05$). It was concluded that the parents used over-the-counter drugs and their level of rational drug use was positive. It is recommended that physicians and nurses provide education and counseling on rational drug use to children and their environment in a holistic manner.

Keywords: Awareness, child, nursing, parent, rational drug.

Özet

Bu çalışma, ebeveynlerin akılcı ilaç kullanımını konusundaki farkındalıklarını ve etkileyen faktörleri belirlemek amacıyla tasarlanmıştır. Çalışma, eczaneye başvuran ve çalışmaya katılmaya gönüllü olan 0-18 yaş arası çocuğu olan 322 ebeveyn ile tamamlanmıştır. Veri toplama aracı olarak "Tanımlayıcı Anket Formu" ve "Ebeveynlerin Akılcı İlaç Kullanımı Konusunda Farkındalık Anketi" kullanılmıştır. Veriler tanımlayıcı (sayı, yüzde ve ortalama) ve istatistiksel (t-testi, Mann-Whitney U, ANOVA ve Kruskal-Wallis testi) yöntemler kullanılarak değerlendirilmiştir. Ebeveynlerin %53,1'inin çocukları için reçetesiz ateş düşürücü ilaç kullandığı belirlendi. Ebeveynlerin akılcı ilaç kullanımını konusundaki farkındalıkları ortalamanın üzerindeydi (43,17±7,34). Ebeveynlerin çocukları için reçetesiz analjezik, vitamin ve antibiyotik kullanmaları, her muayenede doktordan ilaç yazmasını istemeleri, eğitim durumları ve çalışma durumları akılcı ilaç kullanımını farkındalık düzeylerini etkilemektedir ($p<0,05$). Ebeveynlerin reçetesiz ilaç kullandıkları ve akılcı ilaç kullanım düzeylerinin olumlu olduğu sonucuna varılmıştır. Hekim ve hemşirelerin bütüncül bir yaklaşımla çocuklara ve çevrelerine akılcı ilaç kullanımını konusunda eğitim ve danışmanlık vermeleri önerilmektedir.

Anahtar kelimeler: Farkındalık, çocuk, hemşirelik, ebeveyn, akıllı ilaç.

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Introduction

Unconscious and incorrect drug use is one of the most important problems affecting public health, especially children's health, worldwide. Despite the great advances in the pharmaceutical industry in the recent past, it is necessary to attach importance to the establishment of appropriate systems for regular monitoring of rational drug use (1).

Rational drug use refers to individuals' using medicines that meet their clinical needs, in adequate doses according to their individual needs for an adequate duration at the least cost to the individual, society, and country. Irrational drug use is defined as the inappropriate use of over-the-counter medicines in vulnerable groups (children and the elderly) and the unnecessary use of high-cost medicines (2–5). Irrational use of medicines leads to negative consequences such as decrease in the pharmacotherapy quality of drug, high cost of treatment, waste of resources, development of drug resistance and risk of adverse drug reactions (1, 4). In this context, rational drug use is required in children, who are a vulnerable group.

When children get sick, most of parents first administer medicines (4). Irrational drug use significantly affects the pediatric group due to their physiological structures (4, 6). Based on the developmental physiology of children, treatment should be adjusted according to rational medicine use (4). Medicine administration differs in children compared to adults. When drugs are administered incorrectly, pharmacotherapy fails to achieve the intended health outcomes. Successful pharmacotherapy in children requires the prescription and administration of medicines appropriate for their age (7). It is important for parents to raise their knowledge,

administration, and awareness of rational drug use as they play a mediating role for administering drugs to their children, are decision-makers, and are responsible for administering drugs to their children outside the hospital (4, 8, 9).

One of the primary goals is to prevent physiological, psychological, and biological harms that may come about with awareness of rational drug use and alleviate the economic burden by reducing the incorrect use of drugs (10). The determination of parents' knowledge and awareness levels of rational drug use and the factors affecting rational drug use are considered as crucial for child health. Results from this study; providing education and counselling to parents with a holistic nursing approach to the factors affecting the knowledge and awareness levels of parents in drug use can benefit the improvement of child health.

Number of studies that assess parents' practices, knowledge, and awareness of rational drug use has increased in recent years (1, 4, 7, 11–13). However, most of these studies prefer the sample that visited the physician for examination. The number of studies conducted in different regions with different variables and different areas is limited. We aimed to determine the awareness of parents with children between 0-18 years of age who applied to pharmacies about rational drug use and to identify the factors affecting their awareness.

1.1 Research questions

- What is the parents' awareness of rational medicine use?
- Does the rational drug use of parents differ by various factors?

Material and Method

This is a descriptive and cross-sectional survey was conducted through face-to-face interview with parents with children aged 0–18 who consulted the pharmacies located next to four different health institutions (private hospital, state hospital, training and research hospital, and family health center) in a city center located in the eastern Mediterranean region between

01 November and 31 December 2022 and agreed to participate in the survey. No sampling was used for the study, and the adequacy of the sample was decided based on the outcomes of the post-power analysis. Later, the power analysis showed that of 97% based on a sample size of 322, a confidence interval of 5% and an effective size of 0.2.

As data collection tool, a “Descriptive Questionnaire Form” and a “Questionnaire for Awareness of Parents About Rational Drug Use – QAPRDU” were used.

The descriptive questionnaire form includes a total of thirteen items about rational drug use of individuals, which the researchers prepared based on the literature (4, 11, 12, 14) together with socio-demographic questions such as marital status, age, gender, etc.

The Questionnaire for Awareness of Parents About Rational Drug Use (QAPRDU) was designed by the authors based on the literature review (3, 4, 15). In order to determine the awareness levels of parents towards rational drug use, an expert evaluation form was sent to 8 experts in the field of QAPRDU consisting of 11 questions. The content validity of the questionnaire form was made in line with the expert opinions and suggestions (CSR=0.76-1, CGI=0.91). The possible scores in the QAPRDU vary between 11 and 55 points. A pretest was applied among 10 parents who met the inclusion criteria to test the comprehensibility of the questions.

Statistical Analysis

The data were kept confidential and analyzed on SPSS 29. Descriptive methods

Results

In this part of the research, the outcomes collected from 322 participants were analyzed. It was found that 63.4% of the participants were aged between 31 and 40 years, 79.2% were female, and 63% held a bachelor's degree. Also, 49.4% of the individuals had two children between the ages of 0 and 12, 83.9% had nuclear families, and 59.3% had an income equal to their expenditures (Table 1).

Table 2 shows that family health centers (61.5%) were the health unit to which parents most frequently applied for treatment. Over-the-counter antipyretics were used by 53.1% of parents for their children. Only 11.8% of the parents avoid administering over-the-counter drugs. A statistically significant differences were observed between QAPRDU mean scores and the over-the-counter analgesic use in their children ($p=0.048$). The parents who avoided using over-the-counter analgesics for their children had higher levels

such as percentage, number, mean, standard deviation and statistical methods such as t-test, ANOVA, Mann-Whitney U, Kruskal-Wallis test were used to analyze the data. In the data evaluated with ANOVA test, further analysis was performed with Post-Hoc Tukey and Gabriel tests to determine which group the difference originated from. Skewness and Kurtosis (± 2) (16) values and the Shapiro-Wilk normality test were applied To determine whether the values are normally distributed or not. Cronbach's alpha test was run to calculate the internal consistency coefficient. A level of $p<0.05$ was accepted as statistically significance.

Limitations

This research was carried out in a specific province and region. Therefore, further studies with parents in different regions of the country with different socio-cultural characteristics may give different results.

Ethical Considerations

For the study to be conducted; approval from the non-invasive ethics committee (Date: 25.10.2022, Decision No. 02), written permission from the related pharmacies, and informed consent from the parents were obtained.

of awareness.

There was significant relationship between the mean QAPRDU scores and the use of over the counter vitamins in children ($p=0.046$). Higher levels of awareness were observed in the parents who avoided using over-the-counter vitamins for their children.

A statistically significant differences were observed between QAPRDU mean scores and asking the physician to prescribe medication at each examination ($p=0.002$). Educational background of the parents had a major impact on awareness levels of rational medicine ($p=0.033$). Based on further analyses to determine the cause of this effect, the parents who were high school and elementary school graduates were the cause of this effect.

Employment of the parents had a major impact on awareness levels of rational medicine ($p=0.024$). This effect resulted from the parents who were workers and self-employed.

There was a significant difference between over the counter antibiotic use in children and QAPRDU levels ($p < 0.001$). This difference was considered to be caused by

the higher awareness levels of the parents who avoided using over-the-counter antibiotics for their children (Table 3).

Table 1: Distribution of socio-demographic characteristics of the parents (n = 322).

Socio-Demographic Characteristics	n	%
Age		
20 - 30 years	52	16.1
31 - 40 years	204	63.4
41 years and over	66	20.5
Gender		
Female	255	79.2
Male	67	20.8
Educational background		
Primary school	26	8.1
Secondary school	18	5.6
High school	75	23.3
University	203	63.0
Number of children aged 0-12		
1 child	134	41.6
2 children	159	49.4
3 children	29	9.0
Family type		
Nuclear Family	270	83.9
Extended Family	42	13.0
Broken Family	10	3.1
Family income status		
Income less than expenditures	81	25.2
Income equal to expenditures	191	59.3
Income more than expenditures	50	15.5

Table 2: Distribution of the parents' characteristics of drug use for their children (n=322).

Variables	n	%
Most Frequent Referral for Treatment		
University Hospital	10	3.1
State Hospital	57	17.7
Private Hospital	57	17.7
Family Health Center	198	61.5
Over-The-Counter Drugs for children*		
Antibiotics	20	6.2
Antipyretics	171	53.1
Analgesics	149	46.3
Vitamins	56	17.4
Medication Refusers	38	11.8
Asking the physician to prescribe medication at each examination		
Yes	69	21.4
No	253	78.6

*Percentages were analyzed among themselves.

Table 3: Test results of the variables according to QAPRDU (n = 322).

Variables	QAPRDU			
	n	Mean±SD	Test	p
Use of Over-The-Counter Analgesics for Children				
Yes	149	42.30±7.31	t=-1.98	0.048
No	173	43.92±7.45		
Use of Over-The-Counter Vitamin for Children*				
Yes	56	41.93±6.24	t=-2.00	0.046
No	266	43.54±7.51		
Asking the physician to prescribe medication at each examination				
Yes	69	40.71±7.89	t=-3.18	0.002
No	253	43.84±7.05		
Educational Background				
Primary School	26	39.38±7.67 ^a	F=2.956	0.033
Secondary School	18	43.66±6.99		
High School	75	44.28±7.55 ^a		
University	203	43.20±7.34		
Employment				
Housewife	142	42.80±7.17	F=2.861	0.024
Civil servant	128	43.59±7.48		
Worker	27	40.18±8.23 ^a		
Craftsman	12	44.66±5.77		
Self-employed	13	47.92±4.05 ^a		
Variables	n	Mean Rank	Test	p
Use of Over-The-Counter Antibiotics for Children*				
Yes	20	87.13	U=1532.5	<0.001
No	302	166.43		

t: Independent samples t-test, F: ANOVA, U: Mann Whitney U Test, Superscripts a and b indicate a difference within a group, and the same letters indicate no difference within a group; different letters indicate a difference in a group.

Discussion

In this survey conducted to determine the awareness levels of parents on rational use of medicines, it was revealed that parents used over-the-counter medicines for their children and that the majority of these medicines were antipyretics, painkillers, vitamins and antibiotics. The studies with parents have reported that over-the-counter drug use is one of the very common ones rational drug use errors made by parents and they mostly use analgesics and antipyretics among these drugs (8, 12, 17, 18). On the basis of the results of the research and the evidence from the literature; it was observed that the parents used over-the-counter drugs for their children, and the most common types among those drugs were antipyretics

and analgesics. Infectious diseases are prevalent in childhood, and fever and pain are among the most common symptoms manifested in infectious diseases. Parents who encounter a condition are thought to use these over-the-counter medications based on their previous experiences and/or the advice of other people. A study has shown that self-care through patient education with nursing support can improve medication adherence and lifestyle (19–21). The fact that nurses and physicians inform the individuals they examine about drug use will help reduce parents' rational drug use errors.

The level of parents' awareness about rational drug use was above the average value. From this point of view, it can be said

that their awareness of rational drug use is positive and at a good level. When the literature studies are examined, studies that reported positive levels of rational drug use are available (4, 8, 11, 12, 17). Parents' awareness of rational drug use is considered significant for child health, public health, and national welfare. Despite the positive level of QAPRDU among parents, the high rate of over-the-counter drug use indicates that they still require to be informed about rational drug use. As indicated by literature studies (20, 22), health professionals should support parents in health literacy.

It was also found that use of over the counter analgesics, vitamins and antibiotics had a significant effect on QAPRDU levels in children. A study conducted with women reported that the use of over-the-counter analgesics had a significant effect on their health beliefs about drug use, but the mean scores of those who avoided using over-the-counter analgesics were significantly higher (19). The study findings showed that the awareness levels of parents who did not use over-the-counter drugs were significantly higher, which is compatible with the literature studies. This is thought to be because parents who use over-the-counter medicines do not know enough about analgesics, vitamins and antibiotics. It can be argued that increasing the awareness and the knowledge status of parents will reduce the use of over the counter medication. Studies support this idea (23, 24).

The parents who did not ask the physician to prescribe medication at each examination had higher levels of awareness than those who did. The reason for this is that parents with low level of knowledge about medication use ask the physician to prescribe medication for precautionary purposes or to keep it handy at home, even though the physician considers it unnecessary for their

Conclusions

Consequently, it was concluded that the parents used over-the-counter drugs for their children and had a positive level of awareness about rational drug use and that their use of over-the-counter analgesics, vitamins, and antibiotics, asking the physician for medication at each examination, and their educational level and employment had an effect on their levels of awareness about rational drug use. This

children to use medication for therapeutic purposes.

The parents with high educational levels had higher levels of awareness, as well. It has been reported that parental educational level has a major influence on rational drug use (4, 8, 11, 14, 20). It was observed that parents' level of education significantly shaped their level of rational drug use.

Increased reading habits and health literacy of individuals with higher levels of educational are considered to contribute to the elevation of their knowledge levels of rational drug use. In this context, health personnel should focus more on risky groups, considering the education level of parents.

It is emphasized that parents' employment rate significantly affects the level of rational drug use (14, 20). There are studies reporting that the employment has no impact on the rate of rational drug use (21, 22). Besides parental employment status, the choice of profession is also considered to have an effect on rational drug use. Findings of the study revealed that the effect was caused by parents who were workers and self-employed. Worker ones had lower levels of awareness about rational drug use, compared to different occupational groups.

It is thought that worker parents have difficulties in accessing health services due to situations their educational backgrounds, low health literacy, economic difficulties, failing to find time and failing to take leave from work, as well as their use of medicines at home.

The main strengths of this work are that the data were obtained from four centers with different socio-cultural characteristics, rather than from a single center, and that it provides a unique perspective for health personnel on awareness of parents' rational use of medicines.

study gives deep insights into the rational drug use of parents.

How can this knowledge influence the practice of health professionals?

Medicines are an essential component of health care and play an important role in saving lives; their use is a complex issue involving the physician, the nurse and the parent who prepares the

medicine for the child. Therefore, physicians and nurses have a great responsibility for rational use of medicines, which is used to address the problem of inappropriate medication.

In this study, factors affecting rational drug use were revealed. Knowing the factors affecting rational drug use will contribute nurses to prevent health deviations caused by incorrect drug use for their protective role, to guide parents and children on rational drug use for their counseling role, and to conduct intervention studies that support positive behavioral changes that increase awareness about rational drug use in parents for their research role.

In the light of this information, physicians or nurses should provide training and counseling to all parents, especially parents with low educational level and working parents, with a holistic approach on rational drug use, and ensure correct and

conscious drug use by increasing the health competence of individuals.

What Did the Study Contribute to the Literature?

- In addition, intervention studies that support positive changing behaviors that improve awareness of rational drug use in parents are needed.
- Providing information to the parent by the nurse about drug use helps to reduce rational drug use errors.
- Parents' level of education and employment status encourage the use of over-the-counter medicines by their children.

Conflict of Interest Declaration

There is no financial conflict of interest with any institution, organization, person related to our article titled "Parents' Awareness of Rational Drug Use" and there is no conflict of interest between the authors.

References

1. Bilal AI, Osman ED, Mulugeta A. Assessment of medicines use pattern using World Health Organization's Prescribing, Patient Care and Health facility indicators in selected health facilities in eastern Ethiopia. *BMC Health Serv Res.* 2016;23;16(1). doi:10.1186/s12913-016-1414-6.
2. Macit M, Karaman M, Parlak M. Bireylerin akılcı ilaç kullanım bilgi düzeylerinin incelenmesi. *İstanbul Gelişim Üniversitesi Sosyal Bilimler Dergisi.* 2019;6(2):372-87.
3. Beggi B, Aşık Z. Aile hekimliği polikliniğine başvuran hastaların akılcı ilaç kullanımı yönünden değerlendirilmesi. *Ankara Medical Journal.* 2019;19(1). doi.org/10.17098/amj.582021.
4. Utli H, Turan M. 0-12 yaş arası çocuğa sahip ebeveynlerin akılcı ilaç kullanımına yönelik tutumlarının incelenmesi. *Ege Üniversitesi Hemşirelik Fakültesi Dergisi.* 2020;36(2):87-95.
5. Nadeshkumar A, Sathiadas G, Sri Ranganathan S. Rational dispensing of oral dosage forms of medicines to children at a teaching hospital in Sri Lanka. *BMC Health Serv Res.* 2020;20(1). doi:10.1186/s12913-020-05246-x.
6. Çiftçi B, Aksoy M. Çocuklarda akılcı ilaç kullanımı ve hemşirelerin sorumlulukları. *Gümüşhane University Journal of Health Sciences.* 2017;6(3):191-4.
7. Nadeshkumar A, Sathiadas G, Sri Ranganathan S. Administration of oral dosage forms of medicines to children in a resource limited setting. *PLoS One.* 2022;17(12). doi:10.1371/journal.pone.0276379.
8. Tural Büyük E, Ünalı Baydın N. Hasta güvenliği kapsamında akılcı ilaç kullanımında annelerin tutumlarına yönelik bir araştırma. *Journal of Anatolia Nursing and Health Sciences.* 2021;24(3):349-56. doi.org/10.17049/ataunihem.791942.
9. Şendir M, Çelik Z, Güzel E, Büyükyılmaz F. Aile sağlığı merkezlerine başvuran bireylerde akılcı ilaç kullanım alışkanlıklarının belirlenmesi. *TAF Preventive Medicine Bulletin.* 2015;14(1):15-22. Available from: <https://search.trdizin.gov.tr/tr/yayin/detay/200115>
10. Tosun N, Hoşgör H. E-sağlık okuryazarlığı ve akılcı ilaç kullanımı farkındalığı arasındaki ilişkinin belirlenmesine yönelik bir araştırma. *Cumhuriyet Üniversitesi İktisadi ve İdari Bilimler Dergisi.* 2021;22(2):82-102. doi:10.37880/cumuiibf.896847.
11. Kuloğlu Ç, Ekici E. Ebeveynlerin akılcı ilaç kullanım tutumlarının incelenmesi. *Turkish Journal of Pediatric Disease.* 2021;2022(16):1-10. doi.org/10.12956/tchd.860536.

12. Yılmaz D. Çocuğu hastanede yatan ebeveynlerin akılcı ilaç kullanımına yönelik tutumlarının belirlenmesi. *Sağlık Bilimleri Üniversitesi Hemşirelik Dergisi*. 2020;30;2(3):129–36. doi: 10.48071/sbuhemsirelik.773332.
13. Johnson C, Nordby A, Brage Hudson D, Struwe L, Ruppert R. Quality improvement: Antimicrobial stewardship in pediatric primary care. *J Pediatr Nurs*. 2023;70:54–60. doi:10.1016/j.pedn.2023.02.002.
14. Yazıcı T, Kutlu R. Evaluation of fever management and rational drug use in mothers of children under the age of five. *Journal of Istanbul Faculty of Medicine / İstanbul Tıp Fakültesi Dergisi*. 2022;85(3):404–15. doi:10.26650/IUITFD.1000301.
15. Karaman A, Ayoğlu T, Aydoğan MN, Kuşu E. Hemşirelik Öğrencilerinin Akılcı İlaç Kullanma Durumları. *Florence Nightingale Hemşire Derg*. 2019 Jun 1;27(2):143-156. doi: 10.26650/FNJJN18021.
16. Sousa B de. *Introduction to IBM SPSS Statistics 25*. 1th ed. England: MARK0793-1 Marketing Research; 2020.
17. Yılmaz Kurt F, Kahriman İ, Atay S, Aldemir F. Annelerin akılcı ilaç kullanımına yönelik tutumları ve reçetesiz ilaç kullanım durumlarının incelenmesi. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi Araştırma Makalesi GUJHS*. 2022 [cited 28.06.2022];10(2):487–96. Available from: <https://dergipark.org.tr/en/download/article-file/1844597>
18. Gulcan MK, Sahiner NC. Determining the fever-related knowledge and practices of mothers with children aged 1–5 years presenting to a child emergency service with fever complaints in Türkiye. *J Pediatr Nurs*. 2023;69:e13–20. doi:10.1016/j.pedn.2022.11.024.
19. Rostami A, Sabet HR, Azarm E, Kangari H, Elihaei Z, Khodadoustan Shahraki B, et al. Self-Care management, patient education, and nursing support in patients with diabetes and hypertension. *Galen Medical Journal*. 2024;13:e3166. doi.org/10.31661/gmj.v13i.3166.
20. Kahrizi N, Basiri K, Rostami M, Najafi A, Navkhasi S. The necessity of health literacy in the nursing unit for patient education and follow-up. *Journal of Education and Community Health*. 2023;10(1):58–9. doi:10.34172/jech.2023.2218.
21. Yıldırım Z, Kaşıkçı M. The effect of education on self-care agency and rational drug use of patients with COPD. *Patient Educ Couns*. 2023;114:107804. doi: 10.1016/j.pec.2023.107804.
22. Cakmak V, Pakyuz S. The effects of education given by nurses on rational drug use and health literacy of patients receiving hypertension treatment. *Journal of Nursing and Midwifery Sciences*. 2021;8(4):246. doi:10.4103/jnms.jnms_168_20.
23. Dinçoğlu H. Diabetes mellitus, insulin therapy, oral antidiabetic, rational drug use. *The Journal of Turkish Family Physician*. 2020;11(3):131–40. doi: 10.15511/tjtfp.20.00331.
24. Özdemir A, Yeniçeri EN, Topal Y. The effect of long-term drug use on rational use of medicines in children with medical illness. *Family Practice and Palliative Care*. 2023;8(6):165–9. doi:10.22391/fppc.1370127.