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The Effect of Rational Drug Use Training Given To Parents On Parental Attitudes

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ABSTRACT

The study aims to examine the effect of rational drug use education given to parents on parental attitudes.
The pretest-posttest randomized controlled experimental study was carried out in Erzurum between June 2020 and September 2021. The study population comprised parents of children aged 0 to 12 who were registered a Family Health Center in Erzurum. The study sample consisted of 100 parents who came to the FHC on the specified dates and matched the research criteria. "Parent Introductory Form", "Parental Attitude Scale for Rational Drug Use (PASRDU)" and "Rational Drug Use Education" were used to collect research data.
The post-test mean score of the parents in the education group increased after the educational intervention compared to the pre-test mean score, and the difference between the two scores was statistically significant ($p<.001$).The difference between the post-test mean scores of the parents in the education and control groups was found to be statistically significant ($p<.001$).
Parents' rational drug use was found to have improved as a result of the education provided during the study. It is advised that education and counselling services be provided at regular intervals to raise parents' understanding of rational drug use and to help them develop the proper behaviour.

Keywords: Attitude, rational drug use education, parent.

Introduction

Rational drug use (RDU) is a critical component of providing high-quality health care to patients and the general public. In the world and in Turkiye, rational drug use is a top priority, and many health-related organizations, including the World Health Organization (WHO), are working on it.

Rational drug use is defined as "the set of rules that must be followed in order for patients to take drugs in accordance with their clinical needs, in doses that meet their personal needs, in a sufficient time frame, at the lowest cost to themselves and to society" (1). The four essential concepts of RDU, the right drug, the right dose, the right treatment period, and the appropriate cost, are highlighted in this definition (2). RDU's aim is to reduce the social and financial costs of drug usage in society while also preventing physiological, biological, and psychological adverse effects (3).

According to the WHO findings, more than half of all drugs are not taken correctly. Findings in Turkiye show that the results announced by WHO are also valid for our country (4). It has been discovered that the rate of irrational drug use among parents has risen in developed countries as well (5). Studies have revealed that drugs are not used properly in children (6,7).

Too many drugs are consumed for the treatment of diseases and vitamin/mineral support for children. The main differences between adults and children in drug administration are age, weight, and physiological differences (8,9). Children are one of the high-risk populations for drug usage due to certain processes in drug absorption, distribution, metabolism, excretion, and deficits in specific medications. There are a number of factors that make the pediatric population more vulnerable to potential drug-related complications. These factors are different doses of the same drug, wrong dosing, lack of standard dosing regimen, and immaturity of the organ system (10-12). In children, the most important problems regarding RDU occur in the use of antipyretic, antibiotics, and cough medicine groups (13). As a result, while rational drug use is important for everyone, it is especially crucial for children. The role of parents' attitudes and behaviours in the rational use of drugs in children grows even more.

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Children are given medicines by their parents. Parents should pay attention to the effect, usage, time, dose, and adverse effects of the drugs during the therapy phases outside of the hospital. The nurse's role in guiding and educating parents is essential in RDU. However, in order to organize counselling and education, it is necessary to understand parents' attitudes toward rational drug use and the influencing factors. The nurse's responsibilities regarding RDU are to provide education to parents and to provide necessary observations in terms of the side effects of drugs. The nurse should initially ask the parents about their knowledge of the drugs' indications, usage, time, dose, and side effects. Then, (s)he should give information about the indications of the drugs, the dose amount, the right time, and the points to be considered (14).

Nurses can influence parents' rational drug use attitudes and contribute to society's benefit by replacing erroneous information with accurate knowledge. They can help to improve and develop the health of children by educating and counselling parents, particularly mothers, about the rational use of drugs in children. At the same time, they are critical in determining the current state of mothers' rational drug use, identifying deficiencies and inaccuracies, taking the necessary precautions, and ensuring the continuation of rational drug use with the discharge training to be given (14). The study aims to examine the effect of RDU education given to parents on parental attitudes.

Hypotheses of the Research

H_0: Rational drug use education does not affect parental attitudes.

H_1: Rational drug use education positively affects parental attitudes.

Materials and Methods

Type of the Research: The study was conducted as a randomized controlled trial with a pretest-posttest design.

Place and Time of the Research: The research was conducted between June 2020 and September 2021 in a Family Health Center (FHC) in Erzurum.

Population and Sample of the Research: The study population comprised parents of children aged 0 to 12 who were registered a FHC in Erzurum. The study sample consisted of 100 parents who came to the FHC on the specified dates and matched the the research criteria. Power analysis was used to determine the sample size in the study using the G.Power 3.1.9.2 application. In the power analysis, it was determined that 104 parents should be reached, 52 parents in the education group and 52 parents in the control group, with a 95% confidence interval, 80% theoretical power, and 0.5 impact power. At this point, 2 education and 2 control parents who did not want to participate in the study were removed from the study, bringing the total number of participants to 100 (50 education, 50 control).

Inclusion criteria for the study;

- Being a 0-12 age group child
- Being literate
- Not having any communication problems
- Previous drug use for the child.

Data Collection Tools: "Parent Introductory Form", "Parental Attitude Scale for Rational Drug Use" and "Rational Drug Use Education" were used to collect research data.

Parent Introductory Form: In this form, which was prepared by the researcher based on the literature (6,15,16), there are 13 questions in total about age, gender, place of residence of the parents, family type, social security, socioeconomic level, educational status, and occupation, the number of children aged 0-12, the presence of children with chronic diseases, where they most often apply for drug treatment when their child is sick, and the most frequently non-prescribed drugs.

Parental Attitude Scale for Rational Drug Use (PASRDU): It was developed by Çelebi and Çelebioğlu in 2018 (17). The scale consists of 2 sub-dimensions and 40 items. The sub-dimensions of the scale "Correct and Conscious Use" consist of 29 items and "Effective and Safe Use" consists of 11 items. PASRDU is a 5-point Likert-type scale consisting of five questions with the answers "(1) strongly disagree, (2) disagree, (3) indecisive, (4) agree, (5) strongly agree". While 12 of the 40 items in the scale were negative (16,30,31,32,33,34,35,36,37,38,39,40) statements, 28 items consisted of positive statements. The negative items were reverse-scored. The higher the score obtained from the scale, the higher the positive attitude of parents towards rational drug use.

Rational Drug Use Education: An education booklet was created by the researchers based on the literature (8,9,12,14,18). What is a drug? What is rational drug use? What are the benefits of rational drug use? What are the principles of rational drug use? What is irrational drug use? What are the main effects of irrational drug use? What are the problems of irrational drug use? Who makes up the rational drug use team? What are the most common errors mothers make when giving their children drugs? What should be known about rational drug use? What

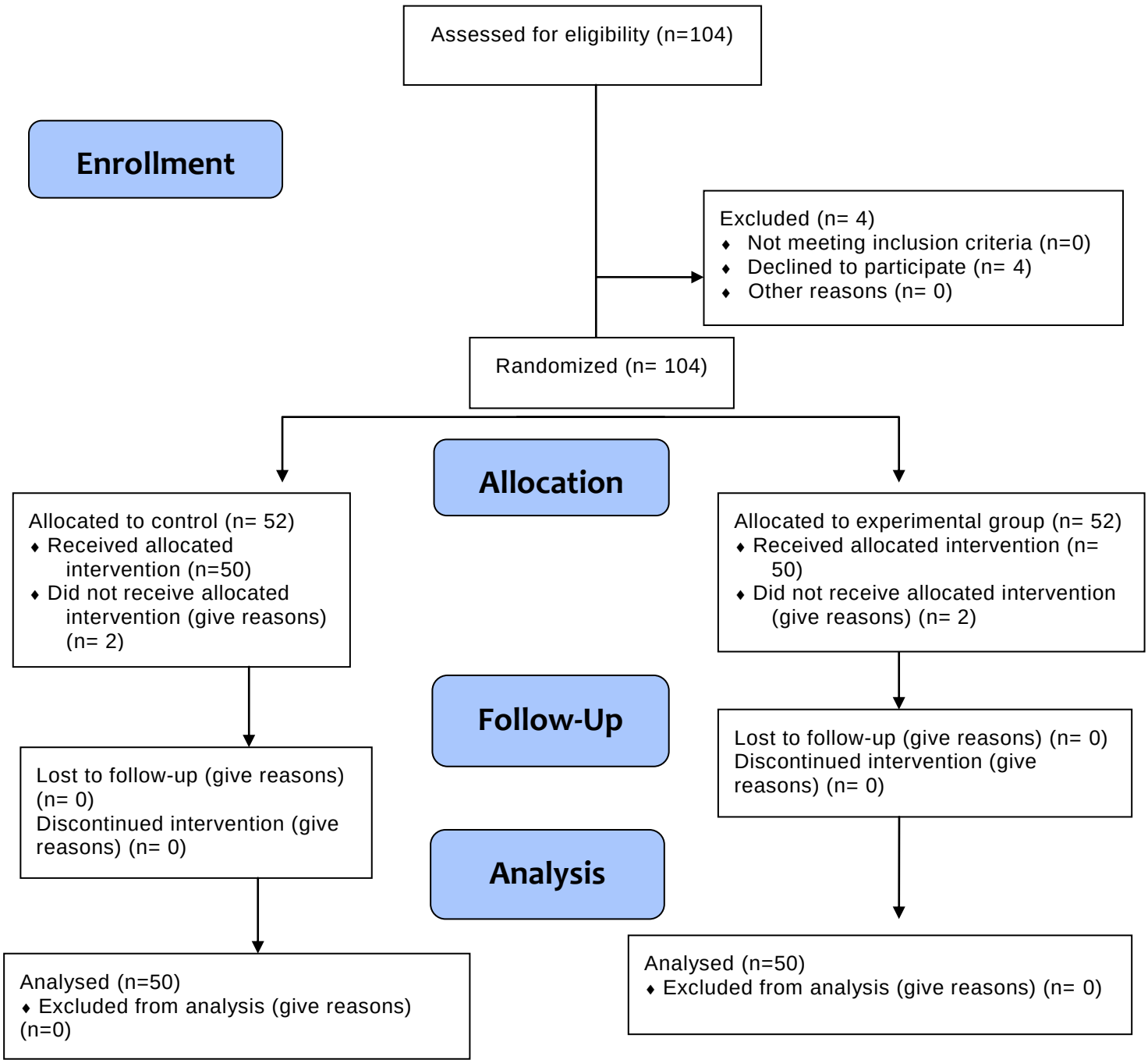

Fig. 1. Flow of study

should we pay attention to when giving a drug to children? These are some of the questions it contains.

Data Collection: The parents were assigned to one of two groups according to a computer-generated randomization list, using the closed envelope technique (Figure 1).

Control Group: Initially, control group data were collected. In the first interview, pre-test data were collected by applying the "Parent Introductory Information Form"and "Parental Attitude Scale for Rational Drug Use". It took roughly 15-20 minutes to complete the forms. No education was provided. Covid-19 precautions were taken while collecting data. One month after the pre-test application, the post-test was applied. Post-test data were collected by the telemonitoring method.

Education Group: In the first interview, pre-test data were collected by applying the "Parent Introductory Information Form" and "Parental Attitude Scale for Rational Drug Use. It took roughly 15-20 minutes to complete the forms. A PowerPoint presentation developed by the researcher was used to provide rational drug use training. The parents were given the prepared education booklet so that they

Table 1. Distribution of Parents In The Education and Control Groups By Descriptive Characteristics (n=100)

Features	Education (n=50)		Control (n=50)		t	p
	Mean±SD		Mean ±SD			
Age	32.76±5.61		32.060±5.30		-0.640	0.523
Number of child	1.52±0.64		1.44±0.61		-0.636	0.526
	n	%	n	%	X2	p
Family type						
Nuclear family	39	78.0	42	84.0	0.585	0.444
Extended family	11	22.0	8	16.0		
Social security status						
Available	47	94.0	45	90.0	0.543	0.461
No	3	16.0	5	10.0		
Socioeconomic level						
Less than expenditure	5	10.0	10	20.0		
Equal income and expenditure	39	78.0	26	52.0	0.256	0.613
More than expenditure	6	12.0	14	28.0		
Education status						
Primary school graduates	21	42.0	17	34.0		
Secondary school graduates	14	28.0	10	20.0	2.772	0.250
Faculty graduates	15	30.0	23	46.0		
Occupation						
Housewife	35	70.0	22	44.0		
Officer/worker	12	24.0	21	42.0	8.865	0.102
Self-employment	3	6.0	7	14.0		
Childhood chronic illness						
Available	3	6.0	5	10.0		
No	47	94.0	45	90.0	0.543	0.461
Place of admission in case of children's disease	10	20.0	8	16.0		
University hospital	17	34.0	14	28.0	2.179	0.536
Public hospital	5	10.0	10	20.0		
Private hospital	18	36.0	18	36.0		
FHC						
Non-prescribed drug administration status						
Antipyretic	40	80.0	41	82.0		
Antibiotic	4	8.0	3	6.0	3.412	0.332
Vitamin	3	6.0	2	4.0		
No drugs	3	6.0	4	8.0		

may utilize it whenever they required it. Covid-19 precautions were taken while collecting data. One month after training, posttest data were collected. Telemonitoring method was used to collect post-test data.

Evaluation of the Data: The statistics were assessed through blinding method. The data were collected by the researcher. They were analyzed by a statistician. The data were sent after making sure that they were coded in a way that preserved blinding (without knowing which groups were the control and education group).

Statistical analysis of the research data was evaluated using the SPSS 22.0 (Statistical Package for Social

Table 2. Comparison of the PASRDU Pretest-Posttest Mean Scores of The Parents of The Education and Control Groups (n=100)

	Education(n=50) Mean±SD	Control(n=50) Mean±SD	Test and p
Pretest	140.10±18.17	140.56±19.72	t= -1.331 p= 0.741
Posttest	160.56±19.72	143.42±21.50	t= 7.830 p= 0.000
Test and p	t = -33.700 p = 0.000	t= -2.303 p= 0.260	

Science) package program. Continuous variables were given as mean±standard deviation and categorical variables as numbers and percentages. The student's t-test was used for two-group comparisons of normally distributed quantitative data. A Paired-Sample t-test was used to compare the normally distributed scale scores before and after education. Additionally, differences between categorical variables were analyzed by Chi-square analysis. The significance level was set as $p<0.05$.

Ethical Principles of the Research: Ethical approval of the Ethics Committee was obtained for the study. The research group's parents were informed about the study's purpose, their questions were answered, and their verbal and written consents were obtained. The parents were informed that the information they supplied would be kept private and would not be shared with anyone else and that they had the right to withdraw from the study at any time. Since the use of the human phenomenon requires the protection of individual rights, the relevant ethical principles "Principle of Informed Consent", "Principle of Volunteering" and "Principle of Protection of Confidentiality" were fulfilled in the research. After the data were collected, the parents in the control group were trained to realize the "Principle of Equality".

Results

In the study evaluating the effect of RDU education given to parents on parenting attitudes, the mean age of parents in the education group was 32.76±5.61 and the mean number of children was 1.52±0.64. It was found that all of the parents lived in the city, 78% lived in a nuclear family, 94% had social security, 78% had an income equal to their expenses, 46% were primary school graduates, 70% did not have a job, 94% did not have a chronic disease in their child, 36% applied to the FHC most frequently when their child was sick, and 80% gave their child an over-the-counter antipyretic.

The mean age of the parents in the control group was 32.06±5.30 years and the mean number of children was 1.44±0.61. It was found that all of the parents lived in the city, 84% lived in a nuclear family, 90% had social security, 52% had an income equal to their expenses, 46% were university graduates, 44% did not have a job, 90% did not have a chronic disease in their child, 36% applied to the FHC most frequently when their child was sick, and 82% gave their child an over-the-counter antipyretic.

It was determined that the parents in the education and control groups were similar in terms of age (t=-0.640, p=.523), the number of children (t=-0.636, p=.526), family type (X^2=0.585, p=.444), social security status (X^2=0.543, p=.461), socioeconomic status (X^2=0.256, p=.613), education status (X^2=2.772, p=.250), occupation (X^2= 8.865, p=.102), chronic disease in their children (X^2=0.543, p=.461), the most commonplace of the application when their children fell ill (X^2=2.179, p=.536), and the status of non-prescription drugs (X^2= 3.412, p = .332, *p>.05*, Table 1).

Rational Drug Use Education Positively Affects Parental Attitudes: As a result of the comparison of the PASRDU pretest-posttest mean scores of the parents of the education and control groups in Table 2, the mean pre-test score of the parents in the education group was determined as 140.10±18.17, and the mean post-test score was 160.56±19.72. The control group's pre-test mean PASRDU score was 140.56±19.72, while the post-test mean score was 143.42±21.50.

The post-test mean score of the parents in the education group increased after the educational intervention compared to the pre-test mean score, and the difference between the two scores was statistically significant (p<.001). It was observed that the post-test mean score of the parents in the control group increased compared to the pre-test mean score, but the difference between the two scores was not statistically significant (p>.05).

It was determined that the pre-test mean score of the parents in the education group was lower than that of the parents in the control group, but this difference was not statistically significant (p>.05). The difference between the post-test mean scores of the parents in the education and control groups was found to be statistically significant (p<.001).

Discussion

The planning, execution, and monitoring process of using the prescribed drug safely, economically, and effectively is referred to as rational drug use (19). The mentioned process requires the country, pharmaceutical industry, healthcare professionals, and society to behave rationally (15). The knowledge/skills and sensitivity of all members of the group, which includes physicians, pharmacists, nurses, and patients, are useful in preventing current and potential difficulties in rational drug use (20). One of the most critical roles of nurses is to ensure that drugs are used according to safety guidelines (18). Nurses can help enhance and improve the health of children by educating and counselling parents, particularly mothers, about the proper use of drugs in children (14).

Age of the parent and child, level of education, place of living, financial level, drug awareness of the parent, written/visual media, experience and experience, and inability to obtain health care are all factors that influence drug use attitudes and behaviours (5, 11, 21, 22). No study was found in the literature that determined the effect of RDU education given to parents on parental attitudes.

The mean pre-test score of the parents in the education group was determined to be 140.10±18.17, and the mean post-test score was 160.56±19.72, based on a comparison of the PASRDU pretest-posttest mean scores of the education and control groups. The control group's pre-test mean PASRDU score was 140.56±19.72, while the post-test mean score was 143.42±21.50. In the literature, Parental Attitude Scale for Rational Drug Use total score averages were found to be positive: Coşkun 180.96±12.93, Çelebi 147.19±9.07, Çalışır 161.46±17.53, Kuloğlu 174.96±17.77, Utli&Turan 147.19±9.07, Yılmaz 165.57± 26.82. The parents' post-test mean score increased compared to their pre-test mean score as a result of the education they received, and their attitudes regarding rational drug use were positive, according to the study's findings. Thus, the results supported the hypothesis "**H1: Rational drug use education positively affects parental attitude**".

Nurses play an active role in the field and in the clinic when it comes to the topic of rational drug use, which has gotten a lot of attention around the world. These responsibilities include providing health education to patients and their families about the drugs they are taking, ensuring that the children are adhering to the drugs they are taking, and performing the appropriate follow-ups on drug side effects (27). It is critical for health professionals to have knowledge within the scope of their responsibilities and to raise awareness by providing education to the general public in order to promote rational drug use (20). It was determined that the pre-test mean score of the parents in the education group was lower than the mean score of the parents in the control group, but this difference was not statistically significant. The difference between the education and control groups' post-test mean scores was determined to be statistically significant. Looking at the literature, it can be seen that there is no educational study with a similar sample group. However, in the rational drug use education applied to different groups, it was found that the average score of the scale after the education was higher, thus revealing the importance of education once again (28-30).

Practical Implications: It is advised that education and counselling services be provided at regular intervals to raise parents' understanding of rational drug use and to help them develop the proper behaviour.

Limitations: The limitation of the study is that education was provided only to mothers.

In the study, it was determined that the education given increased the rational drug use of the parents.

Ethical Approval: This study received 07/11/2019 dated and B.30.2.ATA.0.01.00/502 numbered approval was taken from Erzurum Atatürk University Faculty of Clinical Research Ethics Committee.

The clinical trial registration number is NCT05331898.

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