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Research Article

EXAMINATION OF PREGNANT WOMEN'S KNOWLEDGE LEVEL AND ATTITUDES TOWARDS RATIONAL DRUG USE APPLYING TO HEALTHCARE FACILITY IN MARDİN*

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Abstract: *Inappropriate drug use is a significant challenge both around the globe and in our country. Potential teratogenicity of these drugs, their impact on the fetus and newborn, and finally the long-term effects that may be observed in the child should be taken into consideration especially when planning the use of drugs in pregnant women since the active ingredients in the drug and its metabolites can be transmitted to the fetus through the placenta and cause negative consequences. Therefore, this study was conducted to examine the knowledge levels and attitudes of pregnant women towards rational drug use. Pregnant women (n=414) who agreed to participate in the study and were hospitalized in the Gynecology and Obstetrics Clinics of Mardin State Hospital and Kızıltepe District State Hospital between 01.12.2018-01.02.2019 were included in this descriptive study. The data were collected by face-to-face interview technique through a questionnaire. The total mean scores of the Rational Drug Use (RDU) scale of pregnant women were found to be 32.43 ± 6.37. It was revealed that painkillers were the most frequently used drugs during pregnancy (with a rate of 71.0%) and most prescribed to be spared at home (with a rate of 86.9%). Besides, one of every two pregnant women held the opinion that they used analgesics uncontrollably and 34.5% of the pregnant women used antibiotics in such an uncontrolled way. The rate of pregnant women who were prescribed medication to be spared at home was found to be 33.6%. A significant difference was found between RDU scale scores and the socio-demographic characteristics of pregnant women. Again, a statistically significant difference was found between the rate of drug use in the household where pregnant women live (34.8%) and the residential distance from the health institution ($p < 0.05$). It was determined that pregnant women did not have adequate information about RDU (Scale scores are below 35 points). There is a significant difference between the rational drug use scale and educational level, occupation, income level, family type, place of residence, husband's educational status, social security, and employment status of the spouse. It is thought that more frequent communication and training sessions should be planned especially with special groups on rational drug use.*

Keywords*: Mardin, Rational drug use, Pregnant, Use of analgesics, Use of antibiotics.*

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1. Introduction

Inappropriate drug use is a serious challenge for public health both around the globe and in our country. Drugs are chemical compounds obtained from various sources (including animal, herbal, mineral, and synthetic substances) and prescribed to the person to diagnose, treat, or preventing illness [1].

More than half of all drugs available worldwide are improperly prescribed, distributed, and/or sold according to the estimates by the World Health Organization (WHO). Almost half of the patients do not use these drugs correctly. On the other hand, approximately one-third of the world population devoids from accessing the drugs they urgently needed [2]. The use of unnecessary and excessive amounts of medication prompts an increase in the risk of side effects, developing illness, and even death. From a global perspective, the irrational use of drugs leads to rapid or incorrect consumption of resources and as a result, the availability of even basic drugs may be decreased as well as the economic and social costs of the treatments may be multiplied. Antibiotics are an important drug group that ranks first in irrational drug use. Antibiotics, which are considered as invaluable weapons in terms of human life, may lose their effectiveness due to developing resistance mechanisms unless used rationally. Due to these reasons, various solutions are suggested for the appropriate use of antibiotics all over the world [3]. In this case, the concepts of rational drug use or irrational drug use come to the agenda.

It is a systematic approach that involves rational drug use, defining the problem, ensuring accurate diagnosis for the patient, selecting reliable and proven-effective treatment methodologies, determining the treatment goals, providing a prescription suitable for the treatment procedure, starting the treatment by giving the necessary information and instructions to the patient, monitoring and evaluating the whole treatment procedure [4]. The results obtained from the limited number of studies on inappropriate drug use have shown that physicians may prescribe more drugs than necessary, drugs, and antibiotics being used inappropriately and unnecessarily by the patient thereby leading to problems related to irrational drug use [5].

Turkey also carries out activities to promote rational drug use, ensure required coordination and cooperation in this area between physicians, pharmacists, and health staff to create awareness on the rational use of drugs by the public and pharmaceutical sectors. To build up knowledge and awareness, Rational Drug Use (RDU) National Action Plan (2014-2017) has been prepared and implemented. One of the target audiences in the plan is the general public. The rational drug use is not only a focus of concern for doctors and healthcare professionals but also a subject significantly affected by the attitudes and behaviors of individuals in the community [3]. The teratogenicity of these drugs and their effects on the fetal organs in the new formation and the growth of the fetus, the newborn, and finally the long-term effects during childhood should be taken into consideration especially when planning the use of drugs in pregnant women who are one of the risky groups since the drug and its metabolites can be transmitted to the fetus through the placental tract. Even Nonsteroidal Anti-inflammatory Drugs (NSAIDs) (which are the most innocent drug group) can penetrate the placental barrier and move to the fetal circulation, from there reaching various tissues and organs and resulting in toxic effects. Thus, they can cause significant contraindications and side effects and even malformations in both fetus and the newborn. Since NSAIDs are frequently prescribed by obstetricians, care should be taken during their use [6]. Also, the use of opioids during pregnancy has increased fourfold in the last decade worldwide. Opioid use disorder during pregnancy is a public health problem that can account for approximately

54.000 cases of opioid use disorder annually in the United States [7]. The increasing use of opioids during pregnancy has led to neonatal withdrawal syndrome, and there has been a five-fold increase in neonatal withdrawal syndrome compared to the previous decade. Neonatal withdrawal syndrome refers to the drug withdrawal syndrome that the newborns exposed to opioids experience shortly after birth.

The literature review has shown that few studies are examining the knowledge level and attitudes of pregnant women towards rational drug use in our country. This situation emphasizes the originality of the present study. This study was planned to examine the knowledge levels and attitudes of pregnant women towards rational drug use to shed light on future studies to be conducted with other different sample groups on rational drug use.

2. Materials and Methods

2.1. Study Setting, Time and Sampling

Mardin is a city with a population of 838,778 located in southeastern Turkey [8]. There are 1 State Hospital (with 250 inpatient beds) and 3 private hospitals (with 200 inpatient beds in total) in the province. The population of this descriptive study consisted of pregnant women who had been admitted to obstetrics clinics in Mardin State Hospital, which is the only official inpatient treatment institution in Mardin city center, and Kızıltepe District State Hospital (with 400 inpatient beds), which is the closest and of the busiest district hospital, between 1st January 2018 and 1st February 2019. No sample selection method was chosen in the study, and all pregnant women (n=414) who agreed to participate in the study were included in the procedure.

2.2. Data Collection

A questionnaire form consisting of 3 sections was used to collect the data. The first section included a personal information form including socio-demographic characteristics and obstetric history of the pregnant women. The second section included the "Rational Drug Use Scale" to evaluate the level of knowledge of rational drug use. Finally, the third one included 'Attitude Form Towards Drug Use' to determine the knowledge level and the participants' attitudes.

2.2.1. Personal İnformation Form

The form was created by the researchers by reviewing the relevant literature and consists of several questions about the personal characteristics of pregnant women and their obstetric history [3,9]. In the form prepared by the researcher, there were questions about the socio-demographic characteristics of pregnant women.

2.2.2. Rational Drug Use Scale

The scale was developed by Demirtaş et al. (2018) [9] and proven to be a valid and reliable instrument to evaluate the rational drug use knowledge for adults. In this sense, it boasts of being the first scale in Turkey. Cronbach's alpha coefficient of the scale was calculated as 0.789. There are 21 questions in the scale and the answers are scored as in the following: Yes= 2 points, I don't know= 1 point, No= 0 point. The items 2, 5, 6, 9, 10, 13, 15, 16, 17, 19, 20 are reverse proposition and are scored reversely. As the scores obtained from the scale increase, the level of knowledge of rational drug use

increases. The cut-off value for the scale is 34 points, and the individuals who score above 35 are considered to have rational drug use knowledge.

2.2.3. Attitudes Towards Drug Use Form

It was created by the researchers by reviewing the related literature and consists of several questions about drug use [3,7]. In this form, there are questions about the wrong and unnecessary use of drugs, and unnecessary intake of antibiotics/analgesics, and excessive prescription of drugs.

2.3. Data Analysis

SPSS (Statistical Package for Social Sciences) program was used to analyze the collected data and to create statistical tables. In the study group, the values of kurtosis and skewness (s= -0.575. k= -0.457) were between -1 and +1. The mean (32.44), mode (38), and median (34) values were close to each other. It is suitable for the normal distribution of total scores related to the dependent variable. Independent samples t-test was used to determine if there was a significant difference between the means of two groups. ANOVA was used to determine if there is a significant difference between the means of three or more groups. After the ANOVA test, Scheffe and LSD tests were used for the dual differences. The significance value was determined as ($p < 0.05$).

Ethical Consideration: Before the study, the Ethics Committee Permission (no: 2018 / 1-2) from the Ethics Committee of Mardin Artuklu University and other necessary legal permissions were obtained from the institutions where the study was conducted. The study protocol was conducted according to the Declaration of Helsinki. Verbal consents of pregnant women who agreed to participate in the study were obtained before the study.

3. Results

The socio-demographic characteristics of the pregnant women included in the study are shown in Table 1.

It is seen in Table 1 that 53.4% of pregnant women were in the 20-29 age group and 17.4% were not literate. 90.1% of the pregnant women were housewives and 39.1% had the minimum wage income level. 43.0% of them lived in the district. 41.3% of them did not have any social security. 81.2% of their husbands were employed. According to the reports of pregnant women, 94.2% of them did not suffer from any chronic disease while 5.8% (n = 24) of them had any chronic disease. 33.4% of those with chronic diseases suffered from asthma, 12.5% hypertension, 12.5% thalassemia, 12.5% diabetes, 12.5% migraine, 8.3% goiter, and 8.3% had cardiac rhythm disorder. The rate of continuous drug use in pregnant women was found to be 5.6%, and the rate of drug use in the household was found to be 34.8%. The rate of pregnant women whose residences are more than 1 km away from the health institution was 51.0%.

Table 1. The Socio-Demographic Characteristics of the Pregnant Women Who Agreed to Participate in the Study

Demographic characteristics of the pregnant women (n= 414)		**n**	**%**
Age	Under 19 years	25	6.0
	20-29 years	221	53.4
	30-39 years	124	30.0
	Over 40 years	44	10.6
Educational status	Illiterate	72	17.4
	Literate	72	17.4
	Primary school	170	41.1
	High School	56	13.5
	University	44	10.6
Occupation	Housewife	373	90.1
	Civil servant	25	6.0
	Worker	16	3.9
Income level*	Below minimum wage	155	37.5
	Minimum wage	162	39.1
	Above minimum wage	97	23.4
Family type	Nuclear family	279	67.4
	Extended family	125	30.2
	Broken family	10	2.4
Residence	City	147	35.5
	District	178	43.0
	Village	89	21.5
Social security	Yes	243	58.7
	No	171	41.3
Husband's Educational status	Illiterate	23	5.6
	Literate	51	12.3
	Primary school	154	37.2
	High School	103	24.9
	University	83	20.0
Husband's employment status	Yes	336	81.2
	No	78	18.8
Continuous Drug use	Yes	23	5.6
	No	391	94.4
Household drug use	Yes	144	34.8
	No	270	65.2
The distance of the health institutions from residence	≤1 km	203	49.0
	>1 km	211	51.0

*The minimum wage for the year 2018 is 1603 Turkish Liras.

The obstetric history of pregnant women included in the study are presented in Table 2 and Table 3.

Table 2. Obstetric History of the Pregnant Women Included in the Study

Obstetric history	n	Min	Max	X̄± SD
Total number of pregnancy	414	1.00	15.00	3.34 ± 2.21
The number of live birth	397	1.00	13.00	2.86 ±1.75
The number of stillbirths	43	1.00	3.00	1.30± 0.63
The number of miscarriage	104	1.00	8.00	1.68±1.15
The number of deliberate miscarriage	10	1.00	2.00	1.10±0.31
The period between the last two births	318	1.00	6.00	3.22± 1.73
The number of living children	414	1.00	5.00	2.59±0.84

The average number of pregnancies among pregnant women included in the study was 3.34. The average number of live births was 2.86, and the average number of living children was 2.59.

Table 3. Obstetric History of the Pregnant Women İncluded in the Study

Obstetric history of the pregnant women		n	%
The period between the last two births (N=318)	7-17 months	68	21.4
	18-23 months	58	18.3
	24-35 months	63	19.8
	36-47 months	43	13.5
	48-59 months	36	11.3
	60 months and over	50	15.7
The number of living children (N=393)	1-2	198	50.4
	3-4	124	31.6
	5 and over	71	18.0
The place where the birth took place (N=393)	Hospital	371	94.5
	At home (With the help of health staff)	2	0.5
	At home (With the help of a midwife)	20	5.0

The first pregnancies of 25.4% of the pregnant women included in the study took place when they were 18 years old and younger. 74.6% of them took place when they were older than 18 years. The period between the two pregnancies of 19.8% of the pregnant women was 24-35 months, and 31.6% of them had 3-4 children.

The distribution of the responses of pregnant women on the scale of rational drug use is presented in Table 4.

According to Table 4, 89.9% of the pregnant women included in the study stated that only physicians could suggest medication and 70.8% of them reported that not using the drug during the treatment period specified by the doctor may prevent recovery. 44.0% of the pregnant women stated that herbal products can be used instead of drugs, and 49.8% held the idea that consuming herbal products as much as desired did not cause any harm to health. Besides, 85.3% of pregnant women thought that any drug can be used safely during pregnancy.

Table 4. The Distribution Of The Responses of the Pregnant Women İncluded in the Study on the Scale of Rational Drug Use

Rational Drug Use Scale Items	Yes		No		I don't know	
	n	%	n	%	n	%
1. Only physicians can recommend medication.	372	89.9	26	6.3	16	3.9
2. There is no harm in recommending medication to our relatives who suffer from similar complaints.	305	73.7	88	21.3	21	5.1
3. The doctor decides whether we need to take medication when we get sick.	393	94.9	18	4.3	3	0.7
4. Drugs can have negative effects as well as positive effects.	366	88.4	33	8.0	15	3.6
5. All drugs yield the same side effects.	315	76.1	62	15.0	37	8.9
6. It is not harmful to take the medication more often than the time intervals indicated by the doctor.	237	57.2	133	32.1	44	10.6
7. It can be learned from the instructions for use that medicines should be taken on an empty or full stomach.	316	76.3	66	15.9	32	7.7
8. Giving up taking the medication during the treatment prescribed by the doctor may hinder healing.	293	70.8	84	20.3	37	8.9
9. Herbal products can be used instead of drugs.	182	44.0	156	37.7	76	18.4
10. Consuming herbal products as much as desired is not detrimental to health.	206	49.8	125	30.2	83	20.0
11. When we see any undesirable effects while taking medication, we should consult our doctor immediately.	384	92.8	20	4.8	10	2.4
12. While our physician arranges our treatment, we must inform him of the drugs we are currently using.	376	90.8	25	6.0	13	3.1
13. When we feel well during treatment, we can stop using medication.	176	42.5	206	49.8	32	7.7
14. We can ask our pharmacists were to keep our medicines at home.	313	75.6	78	18.8	23	5.6
15. The treatment time for each drug is equally the same.	302	72.9	66	15.9	46	11.1
16. Herbal products are completely harmless.	200	48,3	118	28.5	96	23.2
17. The drugs can be used at the same amounts for all age groups.	321	77.5	58	14.0	35	8.5
18. Rather than using a large number of drugs using a sufficient number of drugs ensures our recovery.	325	78.5	61	14.7	28	6.8
19. More expensive drugs are often more effective.	286	69.1	78	18.8	50	12.1
20. Any drug can be used safely during pregnancy.	353	85.3	27	6.5	34	8.2
21. Some drugs are addictive	293	70.8	51	12.3	70	16.9

The differences between the rational drug use scale scores of the pregnant women and demographic variables are shown in Table 5.

Table 5. The results of the ANOVA test regarding the rational drug use scale scores of the pregnant women and demographic variables

Demographic variables		Sum of squares	sd	Mean of squares	F	p	LSD and Scheffe tests results (means)
Educational status	Between groups	2026.81	4	506.70	14.04	0.01	Illiterate (28.86) Primary school (32.91) Illiterate (28.86) High school (34,30) Illiterate (28.86) University and higher (36.47) Illiterate (30.97) University and higher (36.47) Primary school (32.91) University and higher (36.47)
	Within-group	14751.04	409	36.06			
	Total	16777.86	413				
Occupation	Between groups	533.43	2	266.71	6.74	0.01	Housewife (32.20) Civil servant (36.84) Civil servant (36.84) Worker (31.13)
	Within-group	16244.42	411	39.52			
	Total	16777.86	413				
Income level	Between groups	772.77	2	386.38	9.92	0.01	Below min. wage (30.76) Min. Wage. (33.01) Below min. wage (30.76) above min. wage (34.14)
	Within-group	16005.09	411	38.94			
	Total	16777.86	413				
Family type	Between groups	582.77	2	291.38	7.39	0.01	Nuclear (32.84) broken (25.20) Extended (32.11) broken (25.20)
	Within-group	16195.09	411	39.40			
	Total	16777.86	413				
Place of Residence	Between groups	411.21	3	137.07	3.43	0.02	city(33.52) village(30.91)
	Within-group	16366.64	410	39.91			
	Total	16777.86	413				
Husband's educational status	Between groups	2425.81	4	606.45	17.28	0.01	Illiterate (26.34) Primary school (32.83) Illiterate (26.34)-High school (32.34) Illiterate (26.34) University and higher (35.71) Illiterate (28.84) Primary school 32.83) Illiterate (28.84) high school (32.34) Illiterate (28.84) University and higher (35.71) Primary school (32.83) University and higher (35.71)
	Within-group	14352.05	409	35.09			
	Total	16777.86	413				

A statistically significant correlation was found between the RDU scale scores of the pregnant women included in the study and demographic variables such as educational status, occupation, income level, family type, place of residence, and husband's educational level

There was a significant difference between the RDU scale mean scores and the educational status of the pregnant women included in the study (F = 14.04, p=0.01). It was revealed that the mean scores of the illiterate pregnant women on the RDU scale ($\overline{X}$ = 28.86) were lower than those who had primary ($\overline{X}$ = 32.91), high school ($\overline{X}$ = 34.30), university, and higher education ($\overline{X}$ = 36.47). As the educational level of pregnant women increases, the mean scores of the RDU scale increases.

The RDU scale scores of the pregnant women included in the study exhibit a significant difference in terms of occupation (F = 6.74, p=0.01). In this context, it was found that the RDU scale mean scores ($\overline{X}$ = 36.84) of the pregnant women who were civil servants were higher than those of the housewives ($\overline{X}$ = 32.20). It was also revealed that the RDU scale scores of the pregnant women who were civil servants (x = 36.84) were higher than those who were workers ($\overline{X}$ = 31.13).

As the income level of pregnant women increases, the mean scores of the RDU scale increases. The difference between RDU scale means scores and income level was found to be significant (F = 9.92, p =0.01). The RDU mean scores of the pregnant women whose monthly income was below the minimum wage ($\overline{X}$ = 30.76) were lower than those whose monthly income was above the minimum wage ($\overline{X}$ = 33.01) and equal to the minimum wage ($\overline{X}$ = 34.14).

The RDU scale mean scores of the pregnant women included in the study were found to be significant in terms of family type (F = 7.39, p =0.01). The mean scores of the pregnant women living in the nuclear family ($\overline{X}$ = 32.84) and extended family ($\overline{X}$ = 32.11) were higher than those living in the broken family ($\overline{X}$ = 25.20).

The RDU scale mean scores of the pregnant women living in the city center ($\overline{X}$ = 33.52) were higher than those living in the village ($\overline{X}$ = 30.91). There was a significant difference found between the RDU scale mean scores of the pregnant women and the place of residence (F = 3.43, p =0.02).

The RDU scale mean scores of the pregnant women included in the study differ significantly because of the educational level of their husbands (F = 17.28, p =0.01). As the educational level of the husbands of pregnant women increases, the mean scores of the RDU scale increases.

The results of the t-test conducted to determine whether there is a difference in the rational drug use scale scores of the pregnant women according to demographic variables are given in Table 6.

Table 6. The Results of the t-test for Rational Drug Use Scale Scores According to Demographic Variables

	n	$\overline{X}$	S_x	**sd**	**t**	**p**
Social security						
No	171	31.11	6.51	397	-3.74	**0.001**
Yes	228	33.50	6.14			
Husband's employment status						
No	78	30.43	6.07	412	-3.11	**0.002**
Yes	336	32.90	6.36			

There was a significant difference between the rational drug use scale scores of the pregnant women who accepted to participate in the study and whether they have social security (t = -3.747; p=0.001). The mean scores of those with Social Security ($\overline{X}$ = 33.5088, Sx = 6.14831) were higher than those without social security ($\overline{X}$ = 31.1170, Sx = 6.51860). There was also a significant difference in whether the husband is working or not (t = -3.110; p=0.002). The RDU mean scores of those whose

husbands were working ($\overline{X}$ = 32.9018, Sx = 6.36027) were higher than those with not working ($\overline{X}$ = 30.4359, Sx = 6.07441).

The distribution of the attitudes of the pregnant women included in the study towards drug use is shown in Table 7.

Table 7. The Distribution of the Attitudes of Pregnant Women Towards Drug Use

The number of unused or half-used boxes of medicine (n=414)				
	n	**%**		
None	92	22.2		
1-5 boxes	**187**	**45.2**		
>5 boxes	135	32.6		
	Yes		**No**	
	n	**%**	**n**	**%**
The place to keep the medication (n=414) *				
Refrigerator	**198**	**47.8**	216	52.2
Medicine cabinet	94	22.7	320	77.3
Cool place	**121**	**29.2**	293	70.8
High place	15	3.6	399	96.4
What circumstances they pay attention to while re-using the drugs at home (n=414) *				
Suitability for the illness	**203**	**49.0**	211	51.0
Usage instructions on the boxes of the medication	139	33.6	275	66.4
Whether the packaging is broken or not	100	24.2	314	75.8
Whether the expiry date elapsed or not	320	77.3	94	22.7
No attention to above all	9	2.2	405	97.8
People to whom they ask about the users when they want to take drugs at home (n=414) *				
Physician	**232**	**56.0**	182	44.0
Pharmacist	**129**	**31.2**	285	68.8
Nurse. Healthcare staff	37	8.9	377	91.1
Acquaintance/ Neighbour/ Relative	44	10.6	370	89.4
I don't need anyone since I used the drug before	93	22.5	321	77.5
Spare medications at home (n=414) *				
Analgesics	**233**	**86.9**	35	13.1
Antibiotics	53	19.8	215	80.2
Anti-cold	68	25.4	200	74.6
Gastric medication	42	15.7	226	84.3
Vitamins	19	7.1	249	92.9
Allergy medication	2	0.7	266	99.3
Ointments	25	9.3	243	90.7
The most frequently used medication (n=414) *				
Analgesics	**294**	**71.0**	120	29.0
Antibiotics	51	12.3	363	87.7
Anti-cold	59	14.3	355	85.7
Gastric medication	38	9.2	376	90.8
Vitamins	35	8.5	379	91.5
Allergy medication	3	0.7	411	99.3
Ointments	8	1.9	406	98.1
Do you see the doctor to prescribe you medication to spare at home? (n=414)				
Yes	139	33.6		
No	**150**	**36.2**		
Occasionally	125	30.2		

*More than one response was given.

187 people (45.2%) stated that they had 1-5 half or unused medicine boxes in their houses. While 47.8% of the participants in the study kept their medication in the refrigerator, 3.2% of them stated that they hid them in a high place. Considering re-using medication at home, 49.0% of the participants stated that they paid attention to the suitability of the illness, 77.3% stated that they checked the expiration

date. Before using medication at home, 56.0% of the participants stated that they received information from the physician, and 31.2% of them from the pharmacist. 86.9% of them stated that they got their doctors to prescribe pain killers to spare at home (Table 7).

Table 8. The Distribution of the Attitudes of Pregnant Women Towards Drug Use

	n	%		
Thinking that they use antibiotics without control (n=414)				
Yes	54	13.0		
No	**271**	**65.5**		
Occasionally	89	21.5		
Thinking that they use analgesics without control (n=414)				
Yes	95	22.9		
No	**207**	**50.0**		
Occasionally	112	27.1		
	Yes		**No**	
	n	**%**	**n**	**%**
People to seek help while using antibiotics/ analgesics (n=414) *				
Physician	**341**	**82.4**	73	17.6
Pharmacist	43	10.4	371	89.6
Nurse. Healthcare staff	38	9.2	376	90.8
Acquaintance/ Neighbour/ Relative	18	4.3	396	95.7
Using herbal remedies	19	4.6	395	95.4
Healing oneself using the medication at home	13	3.1	401	96.9
Asking others who had similar illnesses	4	1.0	410	99.0
Not consulting anyone	17	4.1	397	95.9
People to seek help whenever any illness breaks out (n=414) *				
Physician	**352**	**85.0**	62	15.0
Pharmacist	25	6.0	389	94.0
Nurse. Healthcare staff	34	8.2	380	91.8
Acquaintance/ Neighbour/ Relative	12	2.9	402	97.1
Using herbal remedies	20	4.8	394	95.2
Healing oneself using the medication at home	19	4.6	395	95.4
Asking others who had similar illnesses	4	1.0	410	99.0
Not consulting anyone	13	3.1	401	96.9
Seeking information about the medication, its usage, and side effects (n=414) *				
Physician	**186**	**44.9**	228	55.1
Pharmacist	125	30.2	289	69.8
Nurse. Healthcare staff	26	6.3	388	93.7
Prospectus	140	33.8	274	66.2
Acquaintance/ Neighbour/ Relative	39	9.4	375	90.6
Using Any Medication Recommended by Your Elders, Neighbors, and Your social Environment During Your Current Pregnancy (n=414)				
	29	7.0	**385**	**93.0**
Using Any Medication Recommended by Your Elders, Neighbors, and Your Environment During Your previous Pregnancy (n=414)				
	27	8.2	**304**	**91.8**

* More than one response was given.

65.5% of pregnant women did not think that they used antibiotics in an uncontrolled way. 50.0% of pregnant women did not think that they used analgesics in an uncontrolled way. However, 44.9% of the pregnant women stated that they consulted a physician whereas 30.2% of them referred to a pharmacist when using antibiotics/analgesics. 44.9% of the pregnant women stated that they asked for

help from the physician while 30.2% of them sought assistance from the pharmacist about the use of drugs and their side effects. Only 8.2% of the pregnant women who stated that they used any medication recommended by their elders, neighbors, and social environment for themselves in their previous pregnancies (Table 8).

4. Discussion

The most important reasons for the emergence of the concept of *rational drug use* include misleading information about drug use, providing insufficient or incomplete information on the use of drugs, the prescription of drugs by some physicians for making a profit, pressure on some physicians to specify unnecessary prescriptions, profitable promotional activities and related industry not well regulated by the competent authorities [10]. Considering the prevalence of drug use by patients without consulting physicians and the challenges imposed by this situation for public health, there is an urgent need for interventions that encourage rational drug use among the public and raise awareness. Therefore, it is necessary to determine the irrational drug use practices of the people and the factors that may affect this [9].

The RDU scale total mean scores of the pregnant women in our study was 32.43 ± 6.37. Since the predictive value of the scale was calculated as 34 points, those who scored 35 and above on the scale were deemed to have rational drug use knowledge, and the pregnant women participating in our study had a low level of RDU knowledge. This situation may be associated with the low educational level of pregnant women and their husbands. Due to the lack of studies conducted with pregnant women on this subject, it could not be discussed with the literature. When the RDUs scale score is evaluated according to socio-demographic characteristics in our study, Several significant differences were found between educational level, occupation, income level, place of residence, and educational level of husband. Therefore, it was revealed that there was a statistically significant difference between the means scores of rational use of drugs and the educational level, occupation, income level, place of residence, and educational level of husband. Similar to our results, in a similar study by Demirtaş et al. (2018) and Bian et al. (2015), a significant difference was found between the RDU scale scores and educational levels and income [9, 11]. In the study conducted by Costa et al in 2017 in Brazil, it was found that 84.7% of the women used drugs during pregnancy. In this study, a positive correlation was found between the educational level of pregnant women, receiving antenatal care, and drug use during pregnancy [12]. In this context, rational drug use of individuals can be associated with the socioeconomic level.

Similarly, in another study conducted by Adhikari et al. (2011) among 656 women in India, it was revealed that 97.7% of women used drugs during their pregnancy. Also, it was found that only 52.8% of the women applied to health institutions when they suffered from a disorder during pregnancy [14]. In the study of Martin et al. (2015), 28.0% of pregnant women stated that they were addicted to opioid drugs prescribed by their physicians [15]. Another study by Liew et al. (2014) suggested that 38.0% of pregnant women used acetaminophen frequently without a prescription [16]. Golding et al. (2019) found that 44.0% of pregnant women between the ages of 18-32 took paracetamol without a prescription [17]. In our study, analgesics were the most frequently used drug group during pregnancy (71.0%) and prescribed to spare at home (86.9%). Also, one in every two pregnant women think that they use analgesics in an uncontrolled way (They responded" Occasionally "). It was also found that 82.4% of the pregnant women in the present study applied to the physician when they had a disorder.

Paracetamol is a highly preferred drug among pregnant women. It is the most reliable pain killer and antipyretic that can be used in this period [18].

Antibiotics are one of the drug groups that should be used carefully, especially by pregnant women. One of three pregnant women (34.5%) included in our study thinks that they use antibiotics in an uncontrolled way. Antibiotics are among the most commonly used drugs during pregnancy. Since it is known that some antibiotics (tetracyclines) are teratogenic in humans, some are teratogenic in animal experiments (gentamicin), a few may have postnatal toxic effects (streptomycin), physicians refrain from prescribing antibiotics to pregnant women. However, it is known that delay in the treatment of maternal infections may lead to intrauterine infections, premature rupture of membranes, and preterm action risk [19]. For this reason, it is very important to raise the awareness of pregnant women, especially about RDU.

33.6% of the pregnant women answered "Yes " to the question "do you get your doctor to prescribe medicine to spare at home?" and 30.2% of them answered “Occasionally” (63.8% in total) (see Table 7). According to a study conducted in Isparta in 2018 in which the rational drug use levels of the general public were evaluated, when the participants were asked whether or not they prescribed drugs to spare at home, the majority of them (54.7%) stated that they did not do so. On the other hand, in the interview data showed that individuals stated that the refrigerators in their homes were like a small pharmacy, medicines were bought and replaced for every drug that expired, and that medicines at home were treated like candies [20].

When the pregnant women who agreed to participate in the study wanted to use medication at home, they consulted to physicians (56.0%), pharmacists (31.2%), their own experiences (22.5%), and acquaintances/neighbors/relatives (10.6%), respectively (see Table 7). The results of a survey conducted in Turkey showed that 66.0% of the individuals consulted relatives/friends/neighbors regarding the recommended drug use, which is a serious case [20]. In the study by Yousef et al. (2008), it is seen that the advice of friends/neighbors plays an effective role in drug use, though not as high as in this study [21]. Although it is not as high as in the literature, getting advice from the immediate environment other than physicians in drug use is also significant in this study. This phenomenon shows that people strongly influence each other in drug use and seeking counseling from the close environment is a help-seeking behavior in case of illness. However, this contradicts rational drug use.

In the present study, a statistically significant difference was found between drug use in the household where pregnant women live (34.8%) and the distance from the health institution. It is an expected result that the distance from the health institution will affect drug use. However, the special nature of the research group reminds us of the importance of pregnancy follow-up in primary health care services in terms of this result.

Another remarkable finding in the study is adolescent pregnancy. The first pregnancies of 25.4% of the pregnant women included in the study were 18 years and younger, and 74.6% were over 18 years old. Almost 4% of women in the 15-19 age group in our country have children or are pregnant with their first child [22]. The adolescent pregnancy rate is significantly higher than the average in Turkey. Early pregnancies are at higher risk than adult pregnancies in terms of complications such as preterm birth, perinatal mortality, postpartum infection, anemia, a baby with low birth weight, and anemia [23]. Despite all these risks, considering the risks related to our research topic, the severity of the issue is obvious. Although our country makes some improvements in terms of adolescent pregnancies, it is thought that the situation lingers [22, 24].

5. Conclusion

Although rational drug use is important for each group, it is more important in pregnant women who are special groups. There are not many articles in the literature on rational drug use during pregnancy. This shows the originality of our study. It was determined that pregnant women did not have enough information about RDU (Scale scores below 35 points). The difference between the rational drug use scale and education level, occupation, income level, family type, place of residence, husband's educational status, social security, and husband's employment status is significant. The low rational drug use rates among pregnant women have been associated with low levels of education and income. It is important to make plans to provide education and information for women living in the region and their spouses to popularize the use of cheap, harmless, and reliable medications during pregnancy and to prevent unnecessary medication use. To promote safe medication use in the first and second trimesters of pregnancy, healthcare providers should provide counseling easy to access and understand. This suggests that health professionals should communicate with special groups rational about medication use more, plan training on this issue, and pay home visits if necessary. Therefore, health professionals should help all segments of the society so that they can access accurate and adequate information about rational medication practices.

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Ethical Consideration

Before the study, the Ethics Committee Permission (no: 2018 / 1-2) from the Ethics Committee of Mardin Artuklu University and other necessary legal permissions were obtained from the institutions where the study was conducted. The study protocol was conducted according to the Declaration of Helsinki. Verbal consents of pregnant women who agreed to participate in the study were obtained before the study.

The compliance to the Research and Publication Ethics: This study was carried out by the rules of research and publication ethics.

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