Clinical and Experimental Health Sciences

# Development of a Parental Attitude Scale for Rational Drug Use

Arzu Sarialioglu[1], Ayda Celebioglu[2]

[1] Department of Child Health and Diseases Nursing, Faculty of Nursing, Ataturk University, Erzurum, Türkiye.
[2] Department of Child Health and Diseases Nursing, Faculty of Nursing, Mersin University, Mersin, Türkiye.

**Correspondence Author:** Arzu Sarialioglu
**E-mail:** arzu.celebi@atauni.edu.tr
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**ABSTRACT**

**Objective:** The aim of this study is to develop a valid and reliable measurement tool to identify parental attitudes towards rational drug use.

**Methods:** The sample of the methodological study included 517 parents. "The Parent Information Form" and the "Parental Attitude Scale for Rational Drug Use (PASRDU)" were used to collect data. In the assessment of the data, validity and reliability analyses were applied.

**Results:** In the study, CVI was calculated as 0.71. For the exploratory factor analysis, KMO score was 0.86, and Bartlett's test was $x^2$=7.559.22 in the study. For the confirmatory factor analysis, $X^2$/Sd was measured at 3.47, GFI at 0.94, AGFI at 0.93, CFI at 0.92, RMSEA at 0.0,6 and SRMR at 0.06, and the scale structure was approved according to these findings. Consequently, the scale was formed of 40 items and two sub-scales. The Cronbach's alpha value of the scale was 0.88. Item-total correlation values were 0.32-0.61, and test-retest value was r = 0.85.

**Conclusion:** Validity and reliability analyses conducted during the process of scale development showed that PASRDU is a valid and reliable scale that finds out parents' attitudes towards rational drug use. It is also useful for nurses to use within the safety criteria of drugs. This scale enables the nurse to determine the lack of rational drug use and provide training and consultancy on this subject. This scale can be used in primary and preventive health services.

**Keywords:** Attitude, nurse, parents, rational drug use, scale.

## 1. INTRODUCTION

Rational drug use (RDU) has become an important issue in primary and preventive health services today. Great importance has been attached to rational drug use in Turkey and the world, and many institutions, especially the World Health Organisation (WHO), work on this issue.

Rational drug use is defined as "a set of rules the patients need to obey to receive medications by their clinical needs, in doses to meet their own individual requirements, for an adequate period, and at the lowest cost for them and the society" (1). This definition highlights four basic principles; appropriate medication, appropriate dose, adequate period, and appropriate cost (2). RDU aims to decrease the social and financial burdens that incorrect use of drugs imposes on society and to pent related physiological, biological, and psychological damages (3).

A report published by WHO significantly emphasises that more than half of all drugs are not administered correctly. Its results indicate that this is also true for Turkey (4). The rate of irrational drug use among parents has also increased in developed countries (5). The studies have reported that drugs are not used correctly in paediatric patients (6-8).

Rational drug use includes the planning, conducting, and monitoring process for the prescribed drugs, administered in a safe, economical, and effective manner and requires behaving rationally based on the country, the drug industry, healthcare professionals, and the society (9,10). RDU knowledge/skills and sensitivity of all the physicians, pharmacists, nurses, and patients are effective in the prevention of current and future problems. It is important for healthcare professionals to be knowledgeable about RDU within the context of their jobs and to raise awareness by training society (11). One of the most important responsibilities of nurses is to enable patients to use drugs within the criteria of safety (12).

Drugs are used commonly for treating diseases and providing vitamin/mineral support in paediatric patients. Basic differences between adults and children in terms of drug



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administration are age, weight, and physiological differences (13,14). Absorption, distribution, and metabolism of drugs, certain processes in their excretion, and deficiencies in specific drugs in children make them one of the high-risk populations in drug use. There are several factors that make the paediatric population more susceptible to complications associated with drug therapy. These factors are the administration of the same drug at different doses, wrong dose adjustment, lack of standard dose regimen, and immature organ system (15-22). The most important RDU problems in the paediatric population are seen in the use of antipyretantibioticsoti,c and cough medicine groups (23). For this reason, RDU is important for all individuals but much more important for children. Parents' attitudes and behaviours become much more important in the rational use of drugs in their children.

Parents administer drugs to their children. During non-hospital treatment stages, parents should pay attention to the effect, method of use, time, dose, and side effects of the drugs. The role of the nurse in providing correct guidance and training to parents concerning RDU is crucial. However, it is also important to identify the attitudes of the parents towards rational drug use and the factors effective in planning the counselling and training. The responsibilities of the nurse in RDU are to provide training on possible side effects of the drugs to parents. The nurses should first inquire about the parents' knowledge of the indications, use, time, dose, and side effects of the drugs. Then, they should show indications of the drugs, the dose amount, the right time, and the points to consider (24).

Nurses can positively affect parents' attitudes towards RDU and contribute to the benefit of society by replacing false information with correct ones. They can contribute to the promotion of child health by providing training and counselling to their parents, especially mothers, about the rational use of drugs in their children (24).

There is no national or international standard measurement tool assessing RDU in parents in the literature. In most studies assessing RDU, the data were collected using different questionnaires. However, there is a need for a valid and reliable measurement tool that will measure more objectively the results in order to obtain data based on scientific information. The aim of this study is to develop a valid and reliable measurement tool to identify parental attitudes towards rational drug use.

**Research Questions**

Is the Parental Attitude Scale for Rational Drug Use valid and reliable?

## 2. METHODS

### *2.1. Design*

This methodological study was conducted to develop a valid and reliable Parental Attitude Scale for Rational Drug Use to identify parental attitudes towards rational drug use.

### *2.2. Setting and Sample*

The study included parents with children aged between 0 and 12 years who applied to the outpatient clinics and the Family Health Centre (FHC) in the area where the study was conducted. As is stated in the literature about scale development and adaptation studies, it is necessary to reach 300–500 people or 5 to 10 times the number of items ionthe scale (25,26). Based on this information, the sample of the study included 63 items and 517 parents. As a result, it was calculated as 517, which is approximately eight times larger than the item number for the 63-item scale. These parents were literate, had no hearing and vision loss, had a 0-12-year-old child, had previously administered medicine to their child, and were voluntary to participate in the study.

### *2.3. Data Collection*

The data were collected in the paediatrics outpatient clinics of a university hospital, a training-research hospital, and a FHC in Erzurum between May and December 2017. "The Parent Information Form" and the "Parental Attitude Scale for Rational Drug Use (PASRDU)" were used to collect data. The researcher collected the data using the face-to-face interview method. Parents filled out the questionnaire themselves. Each interview lasted for 20-30 minutes.

### *2.4. Item Selection*

Upon the literature review conducted by using the "rational drug use, child, parent, nursing" keywords in order to form an item tool for the draft PASRDU, the related studies and scales were reviewed. The researcher prepared a total of 77 items about positive and negative attitudes. Later, the draft scale was sent to the experts for content validity.

### *2.5. Content Validity and Pilot Application*

In the study, Lawshe's Technique was used for the content validity of the draft scale. The draft PASRDU was presented to 16 experts. These experts were academicians experienced in rational drug use, paediatric nursing and scal,e development. 14 items out of 77 items having a Content Validity Ratio (CVR) of 0, negative (-,) and less than 0.49 at the significance level of α:0.05 were removed from the study. As a result of the content validity study, the draft scale included 63 ite,ms anthe d Content Validity Index (CVI) was calculated as 0.71 (>0.67).

Later, in a pilot application, the draft scale was applied to 50 parents from different educational levels who agreed to participate in the study through the face-to-face interview method. The parents were asked to fill out the draft scale and then evaluate each item in terms of understanding and relevance. It took 30-40 minutes per each parent to complete the data collection process. After the pilot application, five items were revised in terms of spelling and punctuation based on their comments. Thus, the draft scale was prepared for advanced analysis with 63 items.

### 2.6. Measurement

#### 2.6.1. Parent Information Form

This form, which was prepared by the researcher based on literature (7,10,12), includes a total of 13 questions about parents' age, gender, educational status, where they go to most frequently for medication when their child gets ill, and the drugs they give most frequently without a prescription.

#### 2.6.2. Parental Attitude Scale For Rational Drug Use (PASRDU)

The scale with 40 items and two subscales was put into final form. Subscales of the scale are *Correct and Conscious Use* (29 items) and *Effective and Safe Use* (11 items). 12 of the 40 itemonin the scale consist of negative expressions. Negative items are reversely coded. Every item in the Likert-type scale is rated from 1 to 5. High scores signify that parenteral positive attitudes for rational drug use increase.

### 2.7. Data Analysis

The data were analysed using SPSS for Windows 22.0 and LISREL programme. Face and content validity, construct validity, and reliability analyses were used in the data assessment. Content Validity Index was performed for content validity of the scal,e and exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were performed to determine its construct validity. Kaiser-Meyer Olkin (KMO) test, Bartlett's test, and Varimax Rotation test for EFA as well as $X^2$/Sd, Root Mean Square Error of Approximation (RMSEA), Standardised Root Mean Square Residual (SRMR), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), fit tests and PATH diagram for CFA were used. Item-total correlation tests, Cronbach's Alpha internal consistency coefficient,t and correlation analysis related to test-retest reliability were used in order to determine the reliability analysis. In addition, the demographic characteristics of the parents were analysed using descriptive statistics.

### 2.8. Ethical Considerations

Ethics committee permission was obtained from the Faculty of Health Sciences Ethics Committee (dated 06/02/2017 numbered 2017/01/06). Written permissions from the related outpatient clinics and FHC were obtained. After the parents were informed about the purpose and method of the study, their verbal and written consents were taken. Ethical principles were met in the study.

## 3. RESULTS

### 3.1. The Demographic Characteristics of the Parents

The average age of the parents was 31.72±5.59, 80.1% were mothers, 35.2% were university graduates, and 54% were unemployed. The place people most commonly went to when their children fell ill was the state hospital (40.2%), 83.2% of the parents most commonly administered antipyretics without a prescription. The total mean score of the parents was 157.13±16.25 (Table 1).

***Table 1.*** *Distribution of Parents' Score from the Attitude Scale towards Rational Drug Use*

| Subscales and scale | n | Min-max | Min. | Max. | Mean | SD |
|---|---|---|---|---|---|---|
| *Accurate and Conscious Use* | 517 | 29-145 | 40.00 | 140.00 | 120.62 | 11.55 |
| *Effective and SafeUse* | 517 | 11-55 | 17.00 | 52.00 | 36.51 | 7.68 |
| PASRDU | 517 | 40-200 | 85.00 | 190.00 | 157.13 | 16.25 |

*SD: Standard Deviation*
*PASRDU: Parental Attitude Scale for Rational Drug Use*

### 3.2. Construct Validity

Exploratory and confirmatory factor analyses were carried out for construct validity.

### 3.3. Exploratory Factor Analysis (EFA)

The KMO was used for sampling adequacy, and Bartlett's test of sphericity was used to determine the correlation between the items for factor analysis. While the KMO value of the scale was 0.863, its Bartlett's test values were $x^2$=7.559.228 and p<0.001, which indicated that the data were correlated and suitable for factor analysis.

Principal component analysis and the varimax rotation method were used to perform EFA. In the principal component analysis, a 2-factor structure was determined. After the rotation was appltwoed 2 times, 18 items out of 63 items with factor loadings of less than 0.30 were removed from the scale. The factor loading values of the scale items ranged from 0.332 to 0.701 (Table 2). In additiontwo 2 subscales of the scale accounted for 28.356% of the total variance. As a result, PASRDU was put into final form wtwoth 2 subscales and 45 items.

### 3.4. Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis was used to determine whether or not the items represented the subscales and whether or not the subscales accounted for the scale structure. $X^2$/Sd, SRMR, RMSEA, CFI, AGFI, and GFI compliance tests were used in confirmatory factor analysis. $X^2$/Sd was measured as 3.47, GFI as 0.94, AGFI as 0.93, CFI as 0.92, RMSEA as 0.069, and SRMR as 0.066 (Table 3). The fit indices showed that the model was acceptable as it was.

According to PATH diagram results, two items with factor loadings of lower than 0.30 and 3 items with a t-value less than 1.96 were removed from the scale. The 40-item version of the model was accepted without further modifications

instead of its 45-item version. The factor loadings of the model ranged from 0.32 to 0.,69 and the t values of all items were higher than 1.96 (Figure 1).

***Table 2.*** *Items and Factor Loads of Parental Attitude Scale for Rational Drug Use (45 Item)*

| Item | Subscales | |
|---|---|---|
| | *Correct and Conscious Use* | *Effective and Safe Use* |
| s 1 | **0.386** | 0.105 |
| s 2 | **0.538** | 0.128 |
| s 4 | **0.476** | 0.314 |
| s 6 | **0.572** | 0.199 |
| s 7 | **0.445** | 0.130 |
| s 9 | **0.499** | -0.157 |
| s 10 | **0.630** | 0.048 |
| s 11 | **0.554** | -0.082 |
| s 12 | **0.398** | 0.028 |
| s 16 | **0.522** | 0.085 |
| s 17 | **0.602** | 0.109 |
| s 18 | **0.576** | -0.009 |
| s 19 | **0.475** | -0.139 |
| s 23 | **0.351** | 0.001 |
| s 29 | **0.594** | -0.002 |
| s 33 | **0.347** | 0.271 |
| s 35 | **0.597** | 0.142 |
| s 36 | **0.617** | -0.008 |
| s 41 | **0.439** | -0.199 |
| s 42 | **0.701** | 0.038 |
| s 44 | **0.454** | 0.201 |
| s 48 | **0.490** | 0.197 |
| s 51 | **0.481** | 0.078 |
| s 52 | **0.488** | 0.001 |
| s 53 | **0.465** | 0.090 |
| s 55 | **0.340** | -0.305 |
| s 58 | **0.400** | 0.338 |
| s 59 | **0.564** | 0.348 |
| s 60 | **0.594** | 0.207 |
| s 63 | **0.475** | 0.074 |
| s 3 | 0.097 | **0.359** |
| s 8 | -0.173 | **0.603** |
| s 15 | 0.019 | **0.542** |
| s 20 | 0.115 | **0.579** |
| s 30 | 0.150 | **0.612** |
| s 31 | -0.132 | **0.442** |
| s 32 | 0.163 | **0.390** |
| s 34 | 0.104 | **0.332** |
| s 37 | 0.264 | **0.384** |
| s 45 | 0.211 | **0.512** |
| s 47 | 0.209 | **0.401** |
| s 49 | 0.114 | **0.535** |
| s 50 | 0.181 | **0.623** |
| s 54 | 0.091 | **0.607** |
| s 62 | 0.102 | **0.404** |

***Table 3.*** *Compliance Index Values Determined for the Scale*

| Index | Normal Value | Acceptable Value | Found Value |
|---|---|---|---|
| $X^2$/Sd | <2 | <5 | **3.47** |
| GFI | >0.95 | >0.90 | **0.94** |
| AGFI | >0.95 | >0.90 | **0.93** |
| CFI | >0.95 | >0.90 | **0.92** |
| RMSEA | <0.05 | <0.08 | **0.069** |
| SRMR | <0.05 | <0.08 | **0.066** |

*GFI: Goodness of Fit Index*
*AGFI: Adjusted Goodness of Fit Index*
*CFI: Comparative Fit Index*
*RMSEA: Root Mean Square Error of Approximation*
*SRMR: Standardised Root Mean Square Residual*

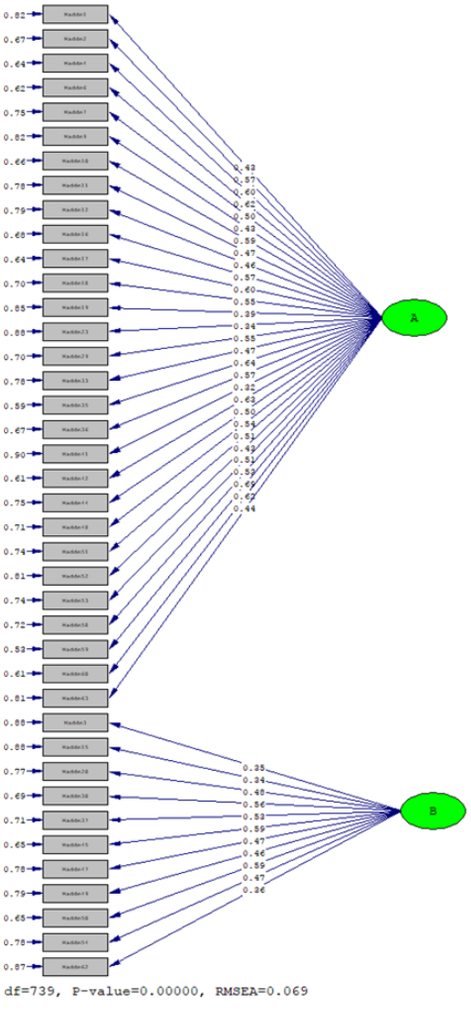


***Figure 1.*** *PATH Diagram of PASRDU*

### *3.5. Reliability*

A test-retest reliability analysis was conducted using Cronbach's α calculation and item-total correlation tests in order to determine the reliability of the PASRDU. The Cronbach's α coefficient of the scale was found to be 0.887 for the overall scale, 0.894 for the *Correct and Conscious Use* subscale, and 0.771 for the *Effective and Safe Use* subscale.

The item-total score correlations varied between 0.22 and 0.61 (Table 4).

To determine the time dependent invariance of PASRDU, the scale was applied to the same individuals (n=50) again 15 days later by using the test-retest method. A statistically positive correlation was found between both measurement scores (r: 0.85; p< 0.001).

***Table 4.*** *Scale Items, Mean Values, Item-Total Correlation, and Cronbach's α Values if Item is Deleted*

| Item | n | Mean | SD | Item-Total Correlation | Cronbach's α Values if Item is Deleted |
|---|---|---|---|---|---|
| 1. I learn about my child's medicines from healthcare professionals. | 517 | 4.44 | 0.56 | 0.348 | 0.885 |
| 2. I know what the medicine I give my child will be used for. | 517 | 4.36 | 0.74 | 0.466 | 0.883 |
| 4. I check the prescription written to my child. | 517 | 4.06 | 0.93 | 0.517 | 0.882 |
| 6. I give my child her/his medication as recommended. | 517 | 4.46 | 0.64 | 0.532 | 0.883 |
| 7. I prepare my child's medicines in suspension as indicated in the instructions for use. | 517 | 4.39 | 0.80 | 0.392 | 0.884 |
| 9. I know the side effects of the medicines I will give to my child. | 517 | 3.69 | 1.16 | 0.302 | 0.886 |
| 10. I look at the expiration date of the medicines I will give to my child. | 517 | 4.41 | 0.73 | 0.518 | 0.882 |
| 11. I keep my child's medication with instructions for use. | 517 | 4.32 | 0.92 | 0.385 | 0.884 |
| 12. If I think the medicines I will give to my child are spoiled, I will throw them away. | 517 | 4.43 | 0.85 | 0.311 | 0.885 |
| 16. I do not use the medicine recommended by others for my child. | 517 | 4.08 | 1.02 | 0.447 | 0.883 |
| 17. I read the instructions for the medicines I will give to my child. | 517 | 4.35 | 0.76 | 0.52 | 0.882 |
| 18. I keep the medicines out of the reach of my child. | 517 | 4.51 | 0.74 | 0.433 | 0.883 |
| 19. If the medicine I give to my child causes side effects, I will stop using the medicine. | 517 | 4.38 | 0.75 | 0.283 | 0.885 |
| 23. I do not give my child medicine without a prescription. | 517 | 4.07 | 0.96 | 0.266 | 0.886 |
| 29. I give my child her/his medication for the recommended time. | 517 | 4.25 | 0.80 | 0.454 | 0.883 |
| 33. If I need to give my child more than one medicine, I will mix the medicines together. | 517 | 4.00 | 1.18 | 0.396 | 0.884 |
| 35. Before I give my child the suspension medications, I shake them. | 517 | 4.36 | 0.76 | 0.524 | 0.882 |
| 36. When storing my child's medicines, I pay attention to the storage conditions written in the instructions for use. | 517 | 4.43 | 0.72 | 0.456 | 0.883 |
| 41. I keep my child's medicine with its box to protect from light. | 517 | 4.34 | 0.84 | 0.222 | 0.886 |
| 42. I give my child their medication at the recommended time intervals. | 517 | 4.52 | 0.55 | 0.555 | 0.883 |
| 44. Unnecessary use of drugs is harmful to health. | 517 | 4.43 | 0.86 | 0.447 | 0.883 |
| 48. If I do not see the benefit of the medicine I use for my child, I consult the doctor. | 517 | 4.36 | 0.78 | 0.448 | 0.883 |
| 51. I pay attention to the hunger-satiety condition before giving the medicine to my child. | 517 | 4.38 | 0.74 | 0.389 | 0.884 |
| 52. I give my child the medicine with the scale that came out of the box. | 517 | 4.42 | 0.70 | 0.359 | 0.885 |
| 53. I give my child their medication in the recommended dose / amount. | 517 | 4.48 | 0.73 | 0.374 | 0.884 |
| 58. If my child's medicines in suspension form are not finished within 10 days, I discard the remaining part. | 517 | 4.10 | 0.95 | 0.611 | 0.880 |
| 59. I use boiled and cooled water while preparing my child's medicine in suspension form. | 517 | 4.50 | 0.63 | 0.555 | 0.882 |
| 60. If the medicine I give to my child causes side effects, I consult the doctor. | 517 | 4.38 | 0.74 | 0.389 | 0.884 |
| 63. I do not give my child antibiotics without a prescription. | 517 | 4.66 | 0.51 | 0.393 | 0.885 |
| 3. When my child is sick, I give the medicines that are at home before applying to the health institution. | 517 | 3.37 | 1.27 | 0.238 | 0.887 |
| 15. When my child is sick, I use more than one medicine alternately that has the same effect. | 517 | 3.17 | 1.34 | 0.260 | 0.887 |
| 20. I give my child's medicine in capsule form by opening the capsule. | 517 | 3.11 | 1.26 | 0.355 | 0.885 |
| 30. I recommend the drug, which I think is effective for my child, to someone else. | 517 | 3.26 | 1.39 | 0.407 | 0.884 |
| 37. If the medicine I give to my child causes side effects, I will look for a solution myself. | 517 | 3.08 | 1.45 | 0.393 | 0.885 |
| 45. I learn about my child's medicines from my environment. | 517 | 3.95 | 1.14 | 0.402 | 0.884 |
| 47. I give my child the medicine with milk. | 517 | 3.78 | 1.17 | 0.359 | 0.885 |
| 49. I give my child's medicine in tablet form by crushing. | 517 | 2.84 | 1.20 | 0.345 | 0.885 |
| 50. When my child has similar complaints as before, I give home remedies without consulting anyone. | 517 | 3.59 | 1.25 | 0.441 | 0.883 |
| 54. After my child's medication is over, I keep the remainder of her/his medication at home. | 517 | 2.62 | 1.31 | 0.354 | 0.885 |
| 62. I give my child the medicine with the juice. | 517 | 3.75 | 1.10 | 0.345 | 0.885 |
| Total Cronbach's α | **0.887** | | | | |
| *Correct and Conscious Use* | **0.894** | | | | |
| *Effective and Safe Use* | **0.771** | | | | |

*SD: Standard Deviation*

## 4. DISCUSSIONION

No national or international standard measurement tool was found in the literature to assess RDU in parents. In most dies assessing RDU, the data were collected using different questionnaires (5-8,17,18).

A newly developed measurement tool should identify two characteristics: validity and reliability (27-30). The item pool was formed for face validity of the draft PASRDU; then the peer assessment was made by reassessing the scale according to the expert views before the pilot study was conducted. For content validity, the CVI value is expected to be greater than 0.67 (31). PASRDU's CVI value was calculated as 0.71, confirming PASRDU's content validity and demonstrating that the draft PASRDU is a sufficient scale of rational drug use.

Afterward, the construct validity of the draft scale was assessed. In this study, exploratory and confirmatory factor analyses were carried out to determine the construct validity of the PASRDU. The construct validity of the scale is evaluated to determine how accurately a measuring tool measures the abstract concept or behaviour to be measured. Factor analysis is one of athe nalyses commonly used to evaluate construct validity and to test whether items gather under different factors (27). Prior to factor analysis, KMO was performed to evaluate whether or not the sample was sufficient and suitable for factor analy is. Moreover, Bartlett's test of sphericity was conducted to determine whether or not the data were suitable for factor analysis. For factor analysis, KMO values should be greater than 0.5 (32). A KMO criterion between 0.90-1.00 is assumed to be perfect, while it is assumed to be very good between 0.80-0.89, good between 0.70-0.79, mild between 0.60-0.69, low between 0.50-0.59 and inadmissible when lower than 0.50 (33). Results of Bartlett's test indicate significance at $p<0.05$ (34). Seçer (25) stated that this value should be at least 0.70 and, values of 0.80 or higher would be most appropriate for factor analysis. As the KMO value of the 45-item PASRDU was greater than 0.80, the sample adequacy can be considered very good for factor analysis. The Bartlett's test was also found to be significant at a very good level, thus determining that there was a correlation between the variables and factors of PASRDU.

Within the scope of EFA of the draft PASRDU, a varimax rotation method was conducted, maintaining the structure of the factors. Vertical rotation methods are frequently preferred in scale development since they are commented easier (34). The draft PASRDU was rotated twice using varimax rotation and principal component analysis, revealing 18 items out of 63 items with factor loadings lower than 0.30. These items were subsequently removed from the scale. A factor loading of 0.30 and higher is considered as a good value for the scales (35). The factor loading values of the draft PASRDU were found to range between 0.332 and 0.70. When these values were compared with analysis coefficients, they were found to be at acceptable levels. Therefore, after the EFA, PASRDU had 45 items and two subscales (*Correct and Conscious Use* and *Effective and Safe Use).*

In scale studies, confirmatory factor analysis is used to test the accuracy of exploratory factor analysis results (27). In the nursing literature, the structures of scales determined after EFA are accepted as models and their accuracy is tested with CFA (36). PASRDU's structure was analysed with $X^2$/Sd, GFI, AGFI, CFI, RMSEA and SRMR consistency tests within the context of CFA. An $X^2$/Sd value of 5 or lower indicates a tested model with a good level of fit (27). This study's analysis found an $X^2$/Sd value of 3.47, indicating that PASRDU is an acceptable model. PASRDU's GFI value was 0.94, its AGFI value was 0.93, and its CFI value was 0.92. For these indices, values of 0.90 or higher are considered acceptable. The remaining fit indices (RMSEA and RMR) produced values of 0.06 for PASRDU. An RMSEA value of < 0.08 shows a good fit.AnA SRMR value of 0.05 < RMR < 0.10 shows that a model has a rational fit (37).

After the validity of PASRDU was tested, reliability analyses were conducted. Within the context of PASRDU's reliability analyses, internal consistency was tested first. Internal consistency indicates that all subgroups address and measure the same construct. Cronbach's alpha is widely used to assess the fit between items to determine internal consistency (38). Scales with a coefficient between 1.00-0.80 have high reliability, those with a coefficient between 0.60-0.79 are quite reliable, and those with a coefficient between 0.40-0.59 have low reliability (26). While PASRDU's internal consistency coefficient was found as 0.88 for the whole test, it was found to be 0.89 for the Correct and Conscious Use subscale and 0.77 the for Effective and Safe Use subscale. Cronbach's Alpha values of > 0.80 showed that PASRDU is a highly reliable scale. The fact that items in the scale are consistent with each other and the scale consists of items testing the items of the same feature depends on the high Cronbach's α reliability coefficient of the scale. (39). Accordingly, items in the PASRDU are consistent with each other and the PASRDU consists of items that test the elements of the same feature.

Item-total score correlation is also used to determine internal consistency. It is stated that the items which have an item-total correlation of 0.20 and higher, which is another criterion for reliability, can be included in the scale and differentiate between individuals well in terms of the related characteristics (34). The item-total correlations of the scale were assessed and were found to be 0.20 and higher. This result shows that the participants understood the expressions and answered objectively, and the scale had high item discrimination.

Following item-total correlation, another reliability method, test-retest, was applied to find out the time-dependent fit of PASRDU. High correlation coefficient between the two measurements shows that the test gives consistent time-dependent measurements. The correlation coefficient of 0.80 and above is interpreted as high correlation, 0.60-0.80 as strong correlation, 0.40-0.59 as mild correlation, 0.20-0.39 as low correlation, and below 0.20 as weak correlation (31). The correlation coefficient of PASRDU was 0.85, and the test-retest results showed that the reliability of the scale was

hig,h and it made consistent measurements independent of time.

One of the limitations of the study is that Explanatory and confirmatory factor analysis was conducted on the same sample. Another limitation is that mothers constituted the majority of the sample.

## 5. CONCLUSION

Validity and reliability analyses conducted during the process of scale development showed that PASRDU is a valid and reliable scale that finds out parents' attitudes towards rational drug use. It is also useful for nurses to use within the safety criteria of drugs. This scale enables the nurse to determine the lack of rational drug use and provide training and consultancy on this subject. This scale can be used in primary and preventive health services.

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