



## EVALUATION OF ORS POWDER IN DIARRHEA TREATMENT OF AFGHAN IMMIGRANT CHILDREN IN ISFAHAN, 2022; A DESCRIPTIVE CROSS-SECTIONAL STUDY

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<p><b>Received:</b> May 20<sup>th</sup> 2022 <b>Accepted:</b> June 20<sup>th</sup> 2022 <b>Published:</b> July 28<sup>th</sup> 2022</p>	<p><b>Introduction:</b> Diarrhea is one of the deadly diseases in children. Diarrhea mortality rates are very important in the world, so they require serious treatment measures. ORS (Oral Rehydration Salt) can be considered as one of the effective drugs in the treatment of diarrhea. The level of mothers' awareness about using ORS powder is also one of the predisposing factors for effective treatment of diarrhea.</p> <p><b>Aims of this study:</b> The purpose of this study was to determine the rate of ORS powder administration in the treatment of diarrhea in Afghan immigrant children in Isfahan, Iran and to assess the level of awareness of Afghan mothers about the use of ORS powder in the treatment of diarrhea.</p> <p><b>Research Method:</b> This descriptive cross-sectional study is a prospective section in which the required information was collected during the first 3 months of 1401 from 51 Afghan migrant mothers in Isfahan, Iran.</p> <p><b>Data analysis:</b> The required data was analyzed through SPSS program after collection. The data was presented through relevant graphs and tables prepared in Excel program.</p> <p><b>Results:</b> In this study, data were collected from 51 Afghan mothers. As 21 mothers with secondary and higher education, the rate of ORS powder administration for 27 children with diarrhea (52.9%), mostly used pharmacies to treat diarrhea, so that 27 children get the required medicine from the pharmacy with the advice of a pharmacist. The level of mothers' knowledge about ORS powder consumption was analyzed as poor (19.6%) and excellent (35.3%). Also, there is a significant relationship between mothers' education level and knowledge about ORS powder consumption (<math>p=0.486</math>).</p> <p><b>Conclusion:</b> ORS powder is used in the treatment of diarrhea in children. The rate of administration of this powder in the treatment of diarrhea is 0.52% and the level of mothers' awareness about the use of ORS powder is not satisfactory and requires public awareness.</p>

**Keywords :** Pediatric diarrhea and ORS powder

### 1. INTRODUCTION

Diarrhea is one of the most dangerous diseases with a high mortality rate, especially in children. Worldwide, 1.5 billion cases of diarrhea occur each year, with one-fifth of deaths related to diarrhea. In this disease, water and other body fluids are excreted and the body becomes dehydrated. Because of the membership of children, due to the high amount of water and fluids, water loss is dangerous for children. (WHO, 2013)

In the United States, more than 36 million cases of diarrhea occur each year, with about 30 million cases reported to health centers, 2 million hospitalizations for diarrhea, and 300 deaths from diarrhea. (Bender et al., 2007)

Because of the abnormal excretion of food in diarrhea, it is one of the main causes of malnutrition, as diarrhea patients eat less and intestinal absorption capacity is reduced and nutritional needs are increased due to infection. In many countries, more than one-third of hospital beds are occupied by children with diarrhea. Diarrhea disorders are one of the leading causes of death in children under 5 years of age in most developing and developed countries. Every year, 5 million children die from diarrhea in countries such as Latin America, Africa and Asia. (Behrman et al., 1992)

ORS powder is one of the best medicines for better treatment of diarrhea, which is regarded as the best



and most useful way to treat diarrhea by the **US Department of Health**. This powder consists of sodium, chlorine and glucose salts, which are absorbed through the intestines, so that by absorbing salts and sugars, the absorption of water and other fluids through the intestines is facilitated, and as a result, the volume of body fluids increases. (*WHO., 2010*)

In the last twenty years, the use of ORS (Oral Rehydration Salt) powder has increased the effectiveness of diarrhea treatment in children, as this protocol of using ORS provided by WHO has been successful in developing countries. This treatment protocol should be used as a priority for patients with diarrhea. (*Victoria., 2000*)

The use of ORS in the treatment of diarrhea in children reduces the rate of hospitalization by 61% and the mortality rate by 71%. ORS treatment or its combination saves the lives of at least one million children worldwide each year, especially in developing countries. (*Ulrickson., 2005*)

Pharmacists play an important role in prescribing ORS powder. Pharmacists, with their knowledge and experience, can be good counselors for patients and provide them with the information they need about the benefits of using ORS powder. Humans follow certain rules to obtain medicine and other medical products in each country. In most countries, such as the United States, drugs are divided into two categories: Over the counter (OTC) and Prescription only medicines (POMs). (*Taylor et al., 2000*)

Research has also shown that people expect more from pharmacists to prescribe OTC drugs. For example, another study shows that 50% of Europeans request OTC drugs when they go to the pharmacy. Therefore, the role of pharmacists in promoting the rational use of drugs is considered important. (*Prey et al., 1999*)

According to the Food and Drug Administration, there are more than 10,000 OTC drugs available and they are trying to increase the amount of these drugs. Because this category of drugs makes treatment less expensive and increases people's access to drugs, but the use of OTC drugs should be done in consultation with a doctor or pharmacist. One of the most popular OTC medications is antidiarrheal medication, which only 20% of people have when prescribing, the other 80% seek advice from a pharmacist to treat diarrhea. (*Das et al., 2005*)

In a study conducted by Ali Asghar and colleagues in 2008 over 1262 mothers of children with diarrhea, 90% of mothers had information about ORS. 72% of mothers prescribed ORS powder to their children

during diarrhea. 48% of mothers knew about the role of ORS powder in the treatment of diarrhea, 45% of mothers knew about how to use ORS. 94.5% of mothers are housewives and 35% of them have higher education. In this study, the sex of children was 49% girls and 51% boys, 66% of children referred to private health centers, 76% of them used drugs, as antibiotics 47% and serums 12% were prescribed to children. Of these, 7% of children were admitted to health centers, 85% of the prescribed medicine was used by the practicing physician and 8% was used arbitrarily. Of these, 14% of children underwent a stool test. (*Kolahy and Shokrriz Foumani., 2009*)

In a study conducted by Hedayatullah Shams et al., over 347 mothers of children with diarrhea in Iran, 35.7% of mothers had information about how to use ORS powder in the treatment of diarrhea, but 64.3% of mothers did not know about ORS powder. 89.3% of mothers used the medicine prescribed by their doctors to treat diarrhea in children. 61.7% of mothers received information about ORS powder from health centers. (*Shams et al., 2002*)

In a study conducted by Lamberti Laura et al. in 2015, using data recorded from three health centers in India, the rate of ORS powder administration in these three health centers was reported to be 73.9, 84.2 and 56.7%, respectively. (*Lamberti et al., 2015*)

In a similar study conducted by Aditya Mothur et al. in 2019 in India on 1181 mothers of children with diarrhea, 20% of these mothers did not have enough information about the use of ORS powder in the treatment of diarrhea in children. 20% of these mothers were illiterate, 53% had primary education and 27% had secondary education or higher. 18% mothers use ORS powder as their own treatment for diarrhea of children, as 98% of children with diarrhea are prescribed medicine, the most prescribed drug is 83% antibiotics and 29% ORS powder. (*Mathur et al., 2019*)

## 2. RESEARCH OBJECTIVES

The main purpose of this study was to determine the amount of ORS oral powder in the treatment of diarrhea in children and to assess the level of knowledge of mothers of children with diarrhea (Afghan immigrant mothers in Isfahan) about the use of ORS powder in diarrhea. Consumption of ORS powder in diarrhea is very important in children; it is possible to reduce the death rate of children due to diarrhea. On the other hand, having information about ORS powder for mothers is one of the facilitating factors in the treatment of diarrhea.



### 3. METHOD OF RESEARCH

This research is descriptive and prospective. The required data has been collected from clients to health centers during three months. The variables required in this research were first prepared in the form of a questionnaire and then distributed in health centers. This research questionnaire includes items such as demographic information of children and mothers, information related to the health center and prescription, information related to the level of knowledge and awareness of mothers.

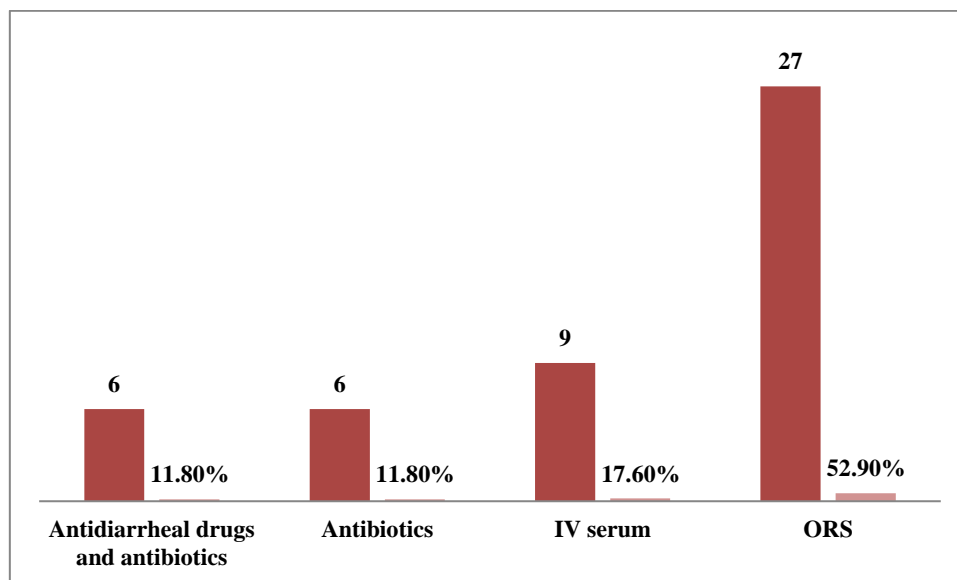
### 4. DATA ANALYSIS

After distributing the questionnaires to the health centers and discussing with the mothers of children with diarrhea, the questionnaires were filled out and then after entering the data, they were analyzed by SPSS program and Microsoft Excel. The results of data analysis are presented by appropriate tables and charts.

### 5. RESULTS

In this study, the required data from 51 mothers of children with diarrhea were analyzed by a questionnaire, as 36 children are boys and 15 are girls.

Most of the children with diarrhea were over 3 years old (with a frequency of 24 children). The age of mothers of children with diarrhea participating in this study is less than 20 years (3 mothers), between 20 to 30 years (21 mothers) and more than 30 years (27 mothers), respectively. The duties of the mothers participating in this study were health worker (3 mothers), housewife (27 mothers) and other duties (7 mothers), such as 3 illiterate mothers, 6 mothers with primary education, 21 mothers with secondary and higher education. Out of 51 patients with diarrhea, 6 referred to pharmacies, 30 to private clinics and other 15 to public health centers, so that 9 children (17.6%) were admitted to medical centers and 42 children (82.4%) have been discharged without bed. 6 children (11.8%) did not have a stool test, 3 children (5.9%) had a urine test, 6 children (11.8%) had a blood test and 36 children (70.6%) did not have any laboratory tests. Also, 45 children (88.2%) were prescribed the drug, but 6 children (11.8%) were not prescribed the drug. In the following chart (chart1), the rate of drug administration in children with diarrhea is presented in this study, so that ORS powder is the most used drug in this study.



**Chart (1):** Statistics of drugs prescribed for children with diarrhea

Also in this study, the type of drug use has been studied, so that the highest amount and statistics of drug use has been done through the recommendations of the pharmacist (35.5%). There is a significant

relationship between mothers' level of education and drug use. In the following table (Table 1), the type of drug use in children with diarrhea is presented:



**Table (1):** How to use medicines in children with diarrhea

How to use medicines	Frequency (n)	Percent (%)
Arbitrary	6	11.8
Pharmacy Recommendations	27	52.9
Doctor's prescription	15	29.4
Other people's suggestions	3	5.9
Total	51	100

Also in this study, the level of knowledge and awareness of mothers about recognition, effect and use of ORS powder in the treatment of diarrhea in children was studied, as 9 mothers (17.6%) did not know enough about ORS powder, 12 mothers (23.5%) had no information about the effects of ORS in the

treatment of diarrhea and also 9 mothers (17.6%) did not know about the use of ORS powder in the treatment of diarrhea. There is also a significant relationship between the level of education and the level of awareness of mothers, which is presented in the following table (Table 2):

**Table (2):** Assess the level of mothers' knowledge about ORS

Maternal level of knowledge of ORS in the treatment of diarrhea	Weak n (%)	Intermediate n (%)	Upper intermediate n (%)	Advance n (%)	p-value
Level of knowledge of ORS	9 (17.6%)	18 (35.5%)	9 (17.6%)	15 (29.4%)	0.307
Level of awareness of the effects of ORS	12 (23.5%)	15 (29.4%)	12 (23.5%)	12 (23.5%)	0.971
Level of knowledge of how to use ORS	9 (17.6%)	12 (23.5%)	3 (5.9%)	27(52.9%)	0.369

## 6. DISCUSSION

According to the data received in this study, 70.6% of children with diarrhea are boys and 29.4% are girls, which is very different from the results of the study of Ali Asghar and colleagues (51% boys and 49% girls). Also in this study, the educational level of mothers with 41.2% of higher education is higher than the educational level of mothers in the study of Ali Asghar and his colleagues (35%). The rate of drug administration in the treatment of diarrhea in children in this study was (88.2%), but the rate of drug administration was reported in the study of Ali Asghar et al. (76%) and in the study of Hedayatullah Shams et al. (89.3%). It can be felt in the amount of medication prescribed by other studies. In this study, ORS powder (52.9%), antibiotics (11.80%) and serum (17.60%) were the most prescribed drugs, but in the study of Ali Asghar et al., Antibiotics (47%) were the most prescribed drugs. And serums (12%), while the rate of ORS powder administration was reported in the study of Laura et al. In three health centers (73.9%), (84.2%) and (56.7%), respectively, but in the study of Mothur et al. ORS powder administration (29%) has been reported. Therefore, the amount of ORS powder prescribed in this study is less than the study of Laura et al., but higher than that of Mothur et al. The rate of

arbitrary use of the drug in the treatment of diarrhea in children in this study (5.9%), while in the study of Ali Asghar and colleagues is the rate of arbitrary drug administration in the treatment of diarrhea (8%). In this study, (58.8%) referred to private health centers, which is almost the same as the study statistics of Ali Asghar and his colleagues (66%). Also, according to the statistics obtained from this study, (19.6%) of mothers did not have enough information about using ORS powder, while in the study of Mothur et al., (20%) did not know about using ORS powder. Also in this study (35.5%) had excellent information about the use of ORS powder in the treatment of diarrhea, but compared to the statistics of Ali Asghar and colleagues (90%) was much lower, which requires public awareness. On the other hand, the information received about the use of ORS powder in the treatment of diarrhea in this study through health centers (59.2%) is almost similar to the statistics received in the study of Hedayatullah Shams and his colleagues (61%) from health centers.

## 7. CONCLUSION

Consumption of ORS powder in the treatment of diarrhea is of great clinical importance. According to the results of this study, the rate of prescription of this





spice is lower and also the level of awareness of mothers is moderate, which requires public awareness.

#### **8. DISCLAIMER**

There was no disclaimer in this study.

#### **9. CONFLICT OF INTEREST**

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No

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No

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