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A knowledge, attitude and practice study about oral rehydration therapy among pharmacy students in Chennai: A cross sectional study

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***Abstract*---**Aim- The study aim is to show the knowledge, attitude and practice regarding oral rehydration therapy towards pharmacy students in Chennai. Material and Methods- The study is carried out with a sample size of 218 students in VISTAS, Pallavaram, at Chennai. It is a web based cross –sectional study. The data were collected by e-questionnaire of 22 questions into 4 domains, where demographic details and questions regarding knowledge, attitude and practice of oral rehydration therapy where asked among pharmacy students in Chennai. Result and Discussion- In our study questionnaire was circulated to 218 pharmacy students totally, but only 203 pharmacy students have responded giving response rate of (93.1%) who is studying in private institution at Chennai. Majority of pharmacy students responded from the age group above 22-23 years were 79 (38.9 %), Most of response were from B pharm students 88 (43.3 %). Conclusion- The present study concluded that pharmacy

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student has GOOD knowledge, attitude and practice about oral rehydration therapy and have enough awareness regarding preparing and dispensing oral rehydration solution among pharmacy students.

***Keywords*---**Oral Rehydration Therapy, Pharmacy students, knowledge, Questionnaire.

Introduction

One of the best therapeutic advancements of this century has been oral rehydration medical care (ORT) with glucose-electrolyte solutions. ORT is helpful in an exceedingly kind of acute diarrhoeal diseases. The globe Health Organization's suggested oral rehydration resolution (Na90, K 20, aldohexose 111, and change state 10 mmol/L) is that the most extensively used ORS worldwide. [1] Efforts to boost the effectualness of ORS have enclosed work advanced substrates (rice and different cereals) for aldohexose and lowering osmolality in monomeric ORS by lowering aldohexose and salt concentrations. ORS can be helpful within the treatment of people with irritable internal organ syndrome and post-surgical patients. [2] Oral rehydration solutions (ORSs) square measure the key treatment of acute diarrhea in youngsters, because it restores the balance by stimulating the enteric sodium/glucose transporter SGLT1 to induce fluid absorption. [3] [4] the globe Health Organization (WHO) and therefore the European Society for paediatric medical specialty Hepatology and Nutrition (ESPGHAN) planned ORSs with totally different chemical compositions. [5] the most agent of childhood acute inflammatory disease is reovirus (RV). we have a tendency to measure the consequences of ORS with totally different concentration of aldohexose and Na on self-propelled vehicle iatrogenic secretion. victimisation chambers technique was used for electrophysiology experiments to judge particle fluid flux. ESPGHAN ORS (sodium 60mmol/L and aldohexose 111mmol/L) iatrogenic a more impregnable professional sorbefacient impact in Caco-2 cells than World Health Organization ORS, and this impact relied on the sodium/glucose magnitude relation. [6,7] These findings disclosed that the professional sorbefacient efficiency of ORS is influenced by Na and aldohexose levels. the best ORS composition ought to take into consideration palatableness whereas reducing RV-induced particle secretion. Clinical trials ought to corroborate these in vitro findings. "The finding that Na transport and aldohexose transport square measure connected within the bowel so aldohexose promotes absorption of matter and water, is perhaps the foremost necessary medical development of this century," in line with a Lancet editorial from 1978. The utilization of an easy salt-glucose mixture has saved the lives of immeasurable youngsters and adults. [8]. looseness of the bowels is already a number one reason for death in youngsters beneath the age of 5. diarrhoeal infections cause around one, 3 million fatalities in folks of all ages, with the best impact on youngsters beneath the age of 5. Due to poor hygiene and deficiency disease, fatal inflammatory disease is a lot of common in impoverished nations (300,000 deaths each year in desert Africa), however fatality shouldn't be unnoticed in high-income countries (about 700 deaths each year in 2015). Reovirus is that the commonest diarrhoeal malady, with a high fatality incidence in youngsters beneath the age of 5 (around a hundred and fifty.000 deaths in 2015) and a substantial rate in older youngsters (200.000 deaths among all ages).

The degree of dehydration caused by water and solution losses corresponds to the severity of inflammatory disease. Hence, this scenario. [9] [10] Oral rehydration resolution (ORS) could be a well-balanced mix of aldohexose and electrolytes that promotes fluid absorption whereas conjointly combating dehydration and acidosis. The Na+/glucose cotransporter (SGLT1) that is found on the top membrane of enteric animal tissue cells is employed in ORS effectualness. The world organization Children's Fund (UNICEF) and therefore the World Health Organization collectively suggested the initial ORS formulation (WHO). [11] This direction used a glucose/salt resolution to stop dehydration throughout diarrhea, notwithstanding the cause or age of the patients8. This ORS is employed to treat epidemic cholera diarrhea, that is caused by the microorganism epidemic cholera. The leading reason for death was World Health Organization ORS includes ninety, twenty and ten mEq/L Na, potassium, and hydrated oxide, similarly as one hundred ten mml/L aldohexose. [12] the quality World Health Organization oral rehydration resolution (WHO-ORS) was initially assessed for Asiatic cholera treatment, then shown to be effective in spite of reason for looseness of the bowels or age of the patient). [13] but, the WHO-ORS does not significantly decrease either stool volume or the length of looseness of the bowels episodes). As a result, improved ORSs for enhancing treatment of acute looseness of the bowels frequently square measure searched for and evaluated. [14] [15] ORT relies on proof that water continues to be absorbed from the digestive tract even whereas fluid is lost through looseness of the bowels or expulsion. The globe Health Organization specify indications, preparations and procedures for ORT. [16] WHO/UNICEF pointers recommend ORT ought to begin at the primary sign of looseness of the bowels so as to stop dehydration. Babies is also given ORS with a pipet or a syringe. Infants beneath 2 is also given a teaspoon of ORS fluid each one to 2 minutes. [17] Older youngsters and adults ought to take frequent sips from a cup, with a suggested intake of 200–400 cc of resolution when each loose movement. [18] The World Health Organization recommends giving youngsters beneath 2 a quarter- to a half-cup of fluid following every loose laxation and older youngsters a half- to a full cup. If the person vomits, the caregiver ought to wait 5–10 minutes and so resume giving ORS.[19] ORS is also given by aid employees or health care employees in exile camps, health clinics and hospital settings. Mothers ought to stay with their youngsters and be schooled a way to provide ORS. This can facilitate to organize them to allow ORT reception within the future. Breastfeeding ought to be continuing throughout ORT. [20]

Objectives

1. To examine the knowledge, attitude and practice regarding Oral Rehydration Therapy among pharmacy students.
2. To evaluate the knowledge, attitude, practice of Oral Rehydration Therapy among pharmacy students in Chennai.
3. To identify the knowledge, attitude, practice of Oral Rehydration Therapy among pharmacy students in Chennai.

Materials and Methods

The study is carried out with a sample size of 218 students in VISTAS, Pallavaram, and Chennai. The sample size is calculated according to the formula.

The study was carried out via online. The study is a web based cross –sectional study using E- Questionnaires. Before conducting the study, ethical approval was obtained from the Institutional Ethical committee (IEC).

Data collection and procedures

A physician validated Questionnaire containing 20 questions is made into a Google form for which the link will be shared to students to evaluate knowledge, attitude and practice regarding oral rehydration therapy, to the students who are registered in Vels institute of science technology and advanced studies(VISTAS), Chennai will be sent the link to self-administered online questionnaires. The E-Questionnaires which is distributed among college students in department of pharmacy in a (VISTAS) through Google forms, the link was created and used to circulate among the students by social media such as WhatsApp, G-mail. The survey consists of demographic characteristics such as age, gender, education qualification and 3 sections contain question regarding knowledge, attitude, and practice towards oral rehydration therapy. The filled online questionnaires will be submitted to investigators mail. The inclusion criteria for selecting the participants in this study is only Pharmacy students above 18 years from VISTAS are included in the study and students from other departments and other universities are excluded. The statistical analysis was calculated based on review performed on E- Questionnaire, where the values were expressed as percentage or as mean and which is obtained by using MS- excel sheet.

Results & Discussion

All the questions from the questionnaire provided the information needed to frame the results.

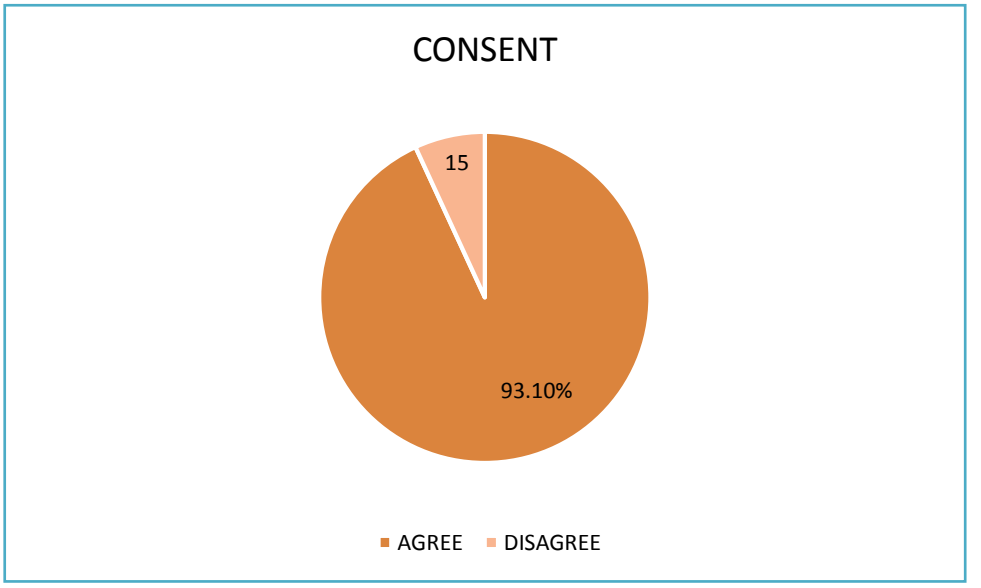

Figure – 1 - Consent

Figure 1 shows the enrolment of the students. Out of 218 study population only 203 students were responded.

Demographic Characteristics of the Participants

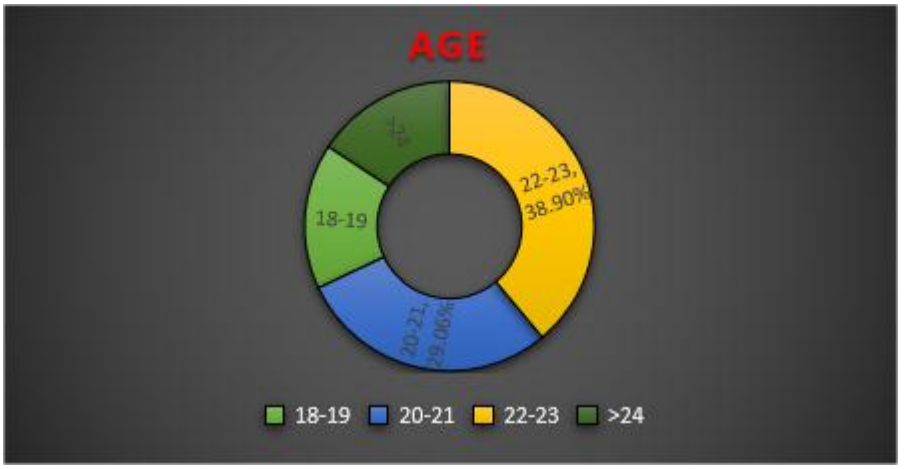

Figure – 2 - Age

Figure 2 depicts the student's demo-graphic details like age which is obtained from the individual's self-report from the second section of the questionnaire. The students' details were very diverse with number of samples of age 18-19 years old were 33 (16.25 %), 20-21 years old were 59 (29.06 %), 22-23 years old were 79 (38.9 %), >24 years old were 32 (15.76 %).

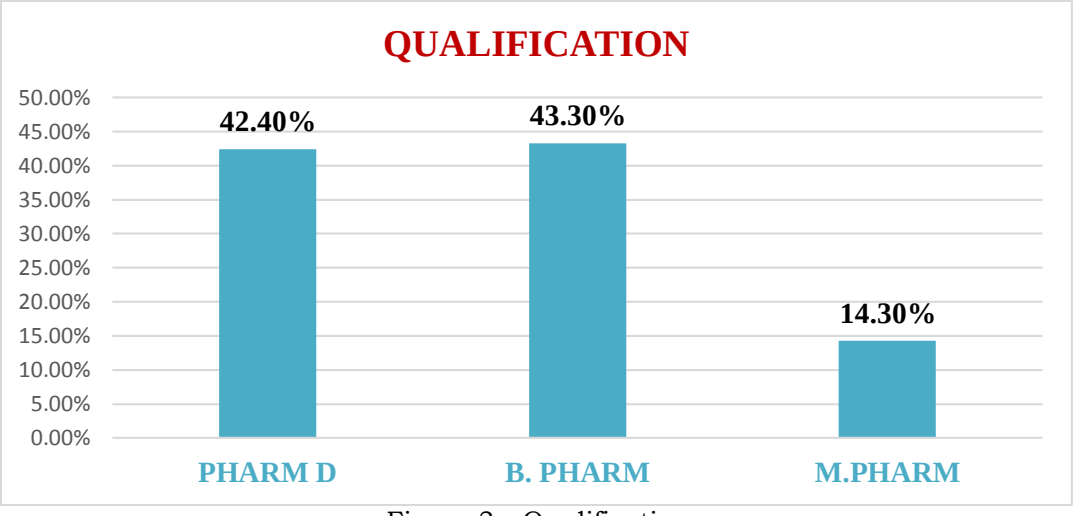

Figure 3 - Qualification

Figure 3 depicts the student's demo-graphic details like qualification which is obtained from the individual's self-report from the second section of the questionnaire. The degrees of education of these students were obtained and the

number of samples in Pharm-D, B-Pharm and M-Pharm degrees were 86 (42.4 %), 88 (43.3 %) and 29 (14.3 %) respectively.

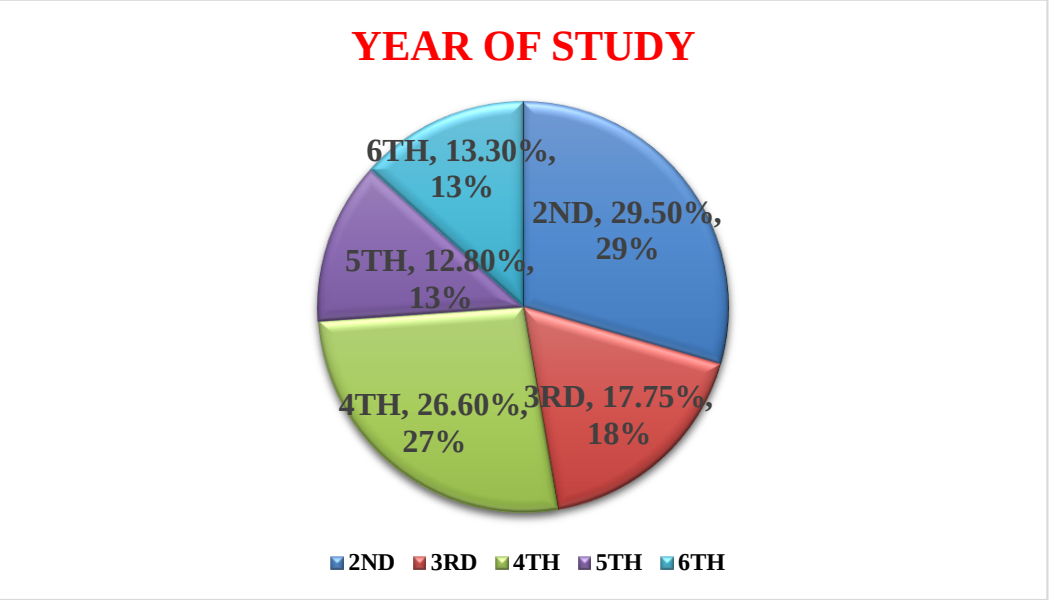

Figure 4 – Year of study

Figure 4 depicts the student's demo-graphic details like year of study which is obtained from the individual's self-report from the second section of the questionnaire. The year of study were obtained, and the number of 2nd year students were 60(29.50%), 3rd year students were 36(17.7%), 4th year students were 54(26.6%), 5th year students were 26(12.8%), 6th year students were 27(13.3%) respectively.

Table 1
Knowledge Towords Oral Rehydration Therapy

S. No	Questions	Numbers	Percentage
1.	What are the signs of dehydration?		
	a. Feeling thirsty	32	15.8%
	b. Feeling tired	19	9.4%
	c. Dry mouth	26	12.8%
	d. Feeling dizzy	23	11.3%
	e. All the above	103	50.7%
2.	ORT is used to treat		
	a. Electrolyte imbalance	44	21.7%
	b. Dehydration	43	21.2%
	c. Diarrhea	15	7.4%
	d. All the above	101	49.8%

3.	Side effects of ORS includes a. Vomiting b. High blood sodium c. High blood potassium d. All the above	 57 37 8 101	 28.1% 18.47% 3.9% 49.8%
4.	Is ORT and ORS are same? a. Yes b. No c. May be	 37 63 103	 18.2% 31% 50.7%
5.	ORS contains which of the following substances? a. Glucose sodium chloride b. Potassium chloride c. Sodium citrate d. All the above	 75 28 15 85	 36.9% 13.8% 7.4% 41.9%
6.	ORT contraindication: - a. Chronic heart failure b. Renal impairment c. Decrease urine production d. All the above	 45 35 37 86	 22.2% 17.2% 18.2% 42.4%
7.	How ORS work in the patient body? a. By replacing salt & water in body b. By replacing potassium & calcium c. By replacing sodium & potassium d. None of the above	 142 39 18 4	 70% 19.2% 8.9% 2%

Table 1 shows the knowledge of pharmacy students about Oral Rehydration Therapy. Which is obtained from the individual's self-report from the second section of the questionnaire.

The data were collected by google form questionnaire of 20 items into 4 domains. The majority of the respondents for the signs of dehydration were All the above 103(50.7%) Feeling thirsty 32(15.8%) Dry mouth 26(12.8%) Feeling dizzy 23(11.3%) and the lowest response were Feeling tired 19(9.4%). The majority of the respondents for ORT is used to treat were All the above 101(49.8%) Electrolyte imbalance 44(21.7%) Dehydration 43(21.2%) and the lowest response were Diarrhea 15(7.4%). The majority of the respondents for Side effects of ORT were All the above 101(49.8%) Vomiting 57(28.1%) High blood sodium 37(18.47%) and the lowest response were High blood potassium 8(3.9%). The majority of the respondents for is ORT and ORS are same were Maybe 103(50.7%) No 63(31%) and the lowest response were Yes 37(18.2%). The majority of the respondents for ORS contains which of the following substance were All the above 85(41.9%) Glucose sodium chloride 75(36.95%) Potassium chloride 28(13.8%) and the lowest response were Sodium citrate 15(7.4%). The majority of the respondents for ORT contraindication were All the above 86(42.4%) Chronic heart failure 45(22.2%) Decrease urine production 37(18.2%) and the lowest response were Renal impairment 35(17.2%). The majority of the respondents for how ORS work in

patient body were by replacing salt & water in body 142(70%) By replacing potassium & calcium 39(19.2%) By replacing sodium and potassium 18(8.9%) and the lowest response were None of the above 4(2%).

Table -2
Attitude towards oral rehydration therapy

S. No	Questions	Numbers	Percentage
1.	ORS can be used by everyone.		
	a. Agree	158	**77.8%**
	b. Disagree	30	**14.8%**
	c. Not sure	15	**7.4%**
2.	ORT is first line treatment for diarrhea.		
	a. Agree	152	**74.9%**
	b. Disagree	45	**22.2%**
	c. Not sure	6	**3%**
3.	Zinc supplement is routinely included in ORT.		
	a. Agree	150	**73.9%**
	b. Disagree	39	**19.2%**
	c. Not sure	14	**6.9%**
4.	ORT can also be given by a nasogastric tube.		
	a. Agree	150	**73.9%**
	b. Disagree	42	**20.7%**
	c. Not sure	11	**5.4%**
5.	In ORT, glucose is replaced by sucrose.		
	a. Agree	150	**73.9%**
	b. Disagree	39	**19.2%**
	c. Not sure	14	**6.9%**
6.	In most cases, ORT is used to treat mild to moderate dehydration.		
	a. Agree	153	**75.4%**
	b. Disagree	43	**21.4%**
	c. Not sure	7	**3.7%**
7.	ORT should be continued even in the presence of vomiting.		
	a. Agree	159	**78.3%**
	b. Disagree	27	**13.3%**
	c. Not sure	17	**8.2%**

Table 2 shows the attitude of pharmacy students about Oral Rehydration Therapy. Which is obtained from the individual's self-report from the second section of the questionnaire.

The data were collected by google form questionnaire of 20 items into 4 domains. The majority of the respondents for ORS can be used by everyone were Agree 158(77.8%) Disagree 30(14.8%) and the lowest response were Not sure 15(7.4%). The majority of the respondents for ORT is first line treatment for diarrhea were

Agree 152(74.9%) Disagree 45(22.2%) and the lowest response were Not sure 6(3%). The majority of the respondents for Zinc supplement is included in ORT were Agree 150(73.9%) Disagree 39(19.2%) and Not sure 14(6.9%). The majority of the respondents for ORT can also be given by a nasogastric tube were Agree 150(73.9%) Disagree 42(20.7%) and the lowest response were Not sure 11(5.4%). The majority of the respondents for in ORT glucose is replaced by sucrose were Agree 150(73.9%) Disagree 39(19.2%) and the lowest response were Not sure 14(6.9.%). The majority of the respondents for ORT is used to treat mild to moderate dehydration were Agree 153(75.4%) Disagree 43(21.4%) and the lowest response were Not sure 7(3.7%). The majority of the respondents for ORT should be continued even in the presence of vomiting were Agree 159(78.3%) Disagree 27(13.3%) and the lowest response were 17(8.2%)

Table-3
Practice Towords Oral Rehydration Therapy

S. No	Questions	Numbers	Percentage
1.	Have you consumed ORS fluid?		
	a. Yes	**78**	**38.4%**
	b. No	**26**	**12.8%**
	c. Occasionally	**99**	**48.4%**
2.	Do you know how to prepare ORS fluid?		
	a. Yes	**140**	**69%**
	b. No	**63**	**31%**
3.	What action can be taken during dehydration?		
	a. Consult Doctor	**63**	**31%**
	b. Give Medicine at Home	**38**	**18.7%**
	c. ORS	**94**	**46.3%%**
	d. None of the above	**8**	**3.9%**
4.	How many packets of ORS sachet an ill person can take per day?		
	a. 1-2 sachet	**144**	**70.9%**
	b. 2-3 sachet	**43**	**21.2%**
	c. 3-4 sachet	**12**	**5.9%**
	d. 4-6 sachet	**4**	**2%**
5.	Do you recommend ORS along with probiotics for effective treatment of diarrhea?		
	a. Yes	**129**	**63.5%**
	b. No	**33**	**16.3%**
	c. Not sure	**41**	**20.2%**

Table 3 shows the practice of pharmacy students about Oral Rehydration Therapy. Which is obtained from the individual's self-report from the fourth section of the questionnaire.

The data were collected by google form questionnaire of 20 items into 4 domains. The majority of the respondents for Have you consumed ORS fluid were Occasionally 99(48.4) Yes 78(38.4%) and the lowest response were No 36(12.8%). The majority of the respondents for Do you know how to prepare ORS fluid Yes 140(69%) and the lowest response were No 63(31%). The majority of the respondents for What action can be taken during dehydration were ORS 94(46.3%) Consult Doctor 63(31%) Give medicine at home 38(18.7%) and the lowest response were None of the above 8(3.9%). The majority of the respondents for How many packets of ORS sachet an ill person can take per day were 1-2sachet 144(70.9%) 2-3sachet 43(21.2%) 3-4sachet 12(5.9%) and the lowest response were 4-6sachet 4(2%). The majority of the respondents for Do you recommend ORS along with probiotics for effective treatment of diarrhea were Yes 129(63.5%) Not sure 41(20.2%) and the lowest response were No 33(16.3%).

Conclusion

The present study shows that pharmacy students have **GOOD** knowledge, attitude and practice regarding **ORAL REHYDRATION THERAPY.** The result of this study helps to show how much knowledge, attitude and practice their have regarding oral rehydration therapy among pharmacy students. From the result it shows that, pharmacy students also have enough practice in preparing and dispensing **ORS** fluid. Participant had good knowledge regarding usage of ORS and its contraindication and how it works in the body.

Conflict of interest:
There was no conflict of interest in this study.

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