



## The prevalence of oral candidiasis among the children in Basra Province

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### ABSTRACT:

This study included 100 children 48 male and 52 female, the ages ranged from less than a month to 30 months they selected through the use of nonprobability samples carried out in Basrah Teaching Hospital and some private clinical of children in Basrah governorate, quantitative descriptive study used to assessment approach with an electronic questionnaire and interviews with the mothers' patients' children. 14% from rural and 86% from urban. the age less than ten months is the most frequent age in this study with the male at 62.5%, the percentage of females reached to 61.54%, and the lowest age was 21- 30 months which represented 8.3% for males and 15.4 % for females, the percentage of children infected with oral candidiasis reached to 45%, 24 (50% ) male and 21(40.38%) female, the symptoms appeared as white appearance in the mouth 24%, the less appearance of the symptoms reached to 6% represented redness in the mouth.

**Keywords:** candidiasis, children, Basra.

### Introduction:

Fungal infections have been increasing over the last decades, being more prevalent in developed countries [1,2], an increased incidence of the infections is associated with some predisposing factors such as the use of dentures, xerostomia, prolonged therapy with antibiotics, local trauma, malnutrition, endocrine disorders, increased longevity of people [3] oral candidosis is one of the most common human opportunistic fungal infections of the oral cavity [4].

Oral candidiasis, also called oral thrush is a condition in which the fungus *Candida* accumulates on the normal oral flora of healthy individuals lining the mouth it is estimated to be present in 45-65% of healthy infants and 30-55% of healthy adults. Candidiasis as a result of systemic and local factors this normal organism can overgrow and cause symptoms oral thrush is a common fungal disease encountered in dermatology, most

commonly caused by an overgrowth of *Candida albicans* in the mouth [5,6] Although more than 150 species of *Candida* have been described, 95% of oral candidiasis are caused by *C. albicans*. Other species, such as *Candida glabrata*, *Candida tropicalis*, *Candida parapsilosis*, *Candida krusei*, *Candida dubliniensis* or *Candida guilliermondii* can cause infections sporadically [7].

*Candida* can be part of the human oral microbiota of up to 75% of persons without known underlying diseases.

This colonization occurs from birth and is greatest in the extreme ages of life (infants, children, and the elderly) [8], greater colonization can be observed in patients who have received antibiotics, corticoids, or chemotherapy, or in patients suffering from diabetes, hospitalized patients and people infected by the human immunodeficiency virus [9], generally, the most techniques available for the isolation of *Candida* in the oral cavity include the direct

examination or cytological smear, a culture of microorganisms and biopsy which is indicated for cases of hyperplastic candidiasis because this type could present dysplasias [7,10,11], the treatment. When choosing between some treatments it will take into account the type of Candida, its clinical pathology and if it is enough with a topical treatment or requires a more complex systemic type [12], always evaluating the ratio efficacy and toxicity [13].

### **Material and method**

The current study was conducted to evaluate the prevalence of oral candidiasis in the children in Basrah province. the study period from January to May 2022, was carried out in Basrah Teaching Hospital and some private clinical in Basrah governorate, A Quantitate descriptive study was used to assessment approach with an electronic questionnaire and interviews with the mothers' patients' children, by convenience samples of 100 children (48 male and 52 female), age ranged between less than a month to 30 months which selected through the use of nonprobability samples, the questionnaire was prepared through a comprehensive review of the relevant which was used as a study instrument to collect the data, was consist of the first part: socio-demographic characteristic and the second part about the symptoms and the relation with breastfeeding and the treatment of oral candidiasis disease which include eighteen items using MCQ questionnaire. The collected data was analyzed using SPSS – version 24 to estimate the frequency and percentage and inferential statistics including Chi-square.

### **Ethical Considerations:**

Before conducting the study and collecting data, approval was obtained from the ethical research committee at the Southern Technical University/Faculty of Graduate Studies/Basra. Besides that, Oral consent was obtained from the parents, confirming their willingness to participate after explaining the purpose of the study. In addition, they were informed that their participation in the study was voluntary.

### **Results and discussion:**

#### **1- Distribution of patients according to residence and education of Mothers and Fathers.**

the first table regarding housing it can be seen that of the 100 data 14% rural while 86% urban, while in paragraphing of education: education of mother the greatest percentage was for Bachelor account 46% while 3% master, 4% un educated, 19% primary, 26 % secondary and 4% un educated, also father education the greatest percentage was Bachelor account 41%, while 11% master, 16% primary,

29 % secondary and 3% uneducated fathers, this study is similar to the researchers Shirazi, et al [14] was observed the majority of families had a monthly income that was above the national average. To preserve

In this study the difference significant between Family standard of living and rate of infection ( $p = 0.005$ ), the economy is quite vital, which results in a lot of purchasing power, There were both low-income and middle-income families present. The majority of families had a monthly income that was above the national average. their aim to preserve good sanitary conditions for their children Olaechea et al [15]

Table 1: Distribution of patients according to residence and education of Mothers and Fathers.

Parameters		Male (n=48)		Female (n=52)		Total (n=100)		p-value
		FR	%	FR	%	FR	%	
Residence	Rural	9	18.75	5	9.62	14	14	0.252*
	Urban	39	81.25	47	90.38	86	86	
	Total	48	100	52	100	100	100	
Education of Mothers	Uneducated	1	2.08	3	5.78	4	4	0.758*
	Primary	8	16.67	11	21.15	19	19	
	Secondary	15	31.25	13	25	28	28	
	Bachelor	22	45.83	24	46.15	46	46	
	Master's Degree	2	4.16	1	1.92	3	3	
	Total	48	100	52	100	100	100	
Education of Fathers	Uneducated	0	0	3	5.77	3	3	0.116*
	Primary	8	16.67	8	15.38	16	16	
	Secondary	16	33.33	13	25	29	29	
	Bachelor	16	33.33	25	48.08	41	41	
	Master's Degree	8	16.67	3	5.77	11	11	
	Total	48	100	52	100	100	100	
Family standard of living	Very Good	1	2.08	2	3.85	3	3	0.059*
	Good	9	18.57	15	28.85	24	24	
	Moderate	37	77.08	28	53.85	65	65	
	Poor income	1	2.08	7	13.46	8	8	
	Total	48	100	52	100	100	100	

## 2- Incidence rate among pediatrics of specific age groups for both genders

Oral candidiasis in pediatric patients increases in the same way as it does in adults, but the rate of increase is greater. Pediatric patients in critical condition, The results of the study showed that the incidence of oral candidiasis among the age less than ten months is the more frequent age in this study with males at 62.5%, the percentage of females reaching 61.54%, from 0-10 months are consistent with the researcher's study Filioti et al [16], Where they explained that the increase in infection in this age group is might be their age and severe underlying disease and partly because of the invasive procedures used. Rahmadiyahanti, R., & Halimatussadiyah 2022 [17] clarified the same result they showed Personal hygiene is defined as an action to preserve one's cleanliness and health, particularly during the

postpartum time by washing the nipples[17], While infection rate in the age group of 10-12 months was limited from 23 to 29 %, and finally, it accounted for 8 % of the incidence of candidiasis at the age of 21-30 months, is in significant proportions, taking into account the consideration of the wards from different social classes, young infants (0-10 )months susceptible to Candida infections, particularly young infants, are especially vulnerable to invasive *Candida* infections.

Previous literature confirmed that neonates have no stabilized oral microbial community on one side and an underdeveloped immune system on the other, [14]. Pediatric oropharyngeal candidiasis: A comprehensive study on risk factors and most prevalent species.

### 3- The Relationship between bottle-feeding sterilization and incidence

The result (  $0.003 < 0.005$  ) there is a relationship between no. sterilize the feeding bottles and the incidence of infection This result is consistent with the interpretation of both Khalaf & Sarhat clarified statistically highly significant between breast and bottle fed This is due to the mothers neglecting to sterilize the feeding bottles periodically [18] while Shirazi[ et al [14] improved use of boiled milk was of low significance as a majority of the patients having oropharyngeal candidiasis were fed by their mothers.

### 4- The relationship between infection rate and personal oral health

Regular oral and dental hygiene with periodic oral examination will prevent most cases of oral candidiasis, the result showed there is a significant difference between personal oral hygiene and the incidence of infection (p-value 0.006), so this can explain the role Saliva plays a major role in the preservation of oral health. It serves as the first line of defense, lubricating the mouth cavity and allowing for steady flow and swallowing, excessive germs and fungal growth are mechanically removed.

Unless there are causes for the deterioration of the immune system [19]

Oral hygiene involves cleaning the teeth, buccal cavity, tongue, and dentures. As well as the use of anti-candida rinses such as Chlorhexidine or Hexetidine, so that they can penetrate those areas where the brush does not. In addition, a need to remove the dentures at night and wash them consciously, leaving them submerged. [20, 21].

### 5 - A statistical study of the use of most treatments for candidiasis

The results of this study showed that a high percentage of the infected patients had self-recovery, which ranged between 20-30% for both sexes, which is reasonable as long as the patient does not have immunosuppression. Only oral thrush without complex and systemic fungal infections, while 10% of both genders used Nystatin had a good influence on oral candidiasis this result was confirmed by Peng et al [22]

Lower 5% treated with Fluconazole This corresponds to a study by Ramires et al, while El-Ansary has another opinion Oral Candida albicans Infection resistance to Fluconazole and Nystatin after Treatment with Azithromycin and Hydroxychloroquine [23, 24].

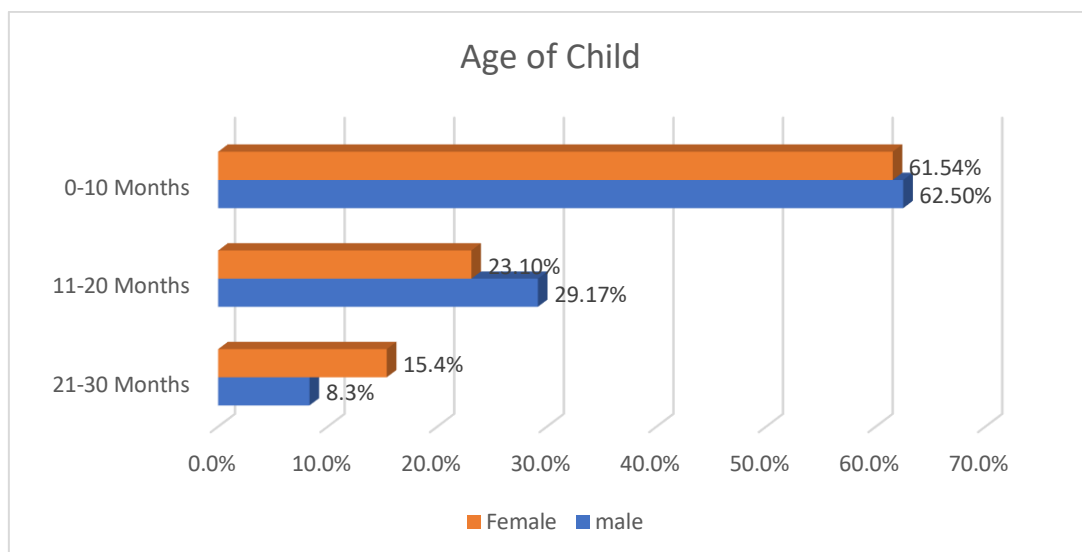


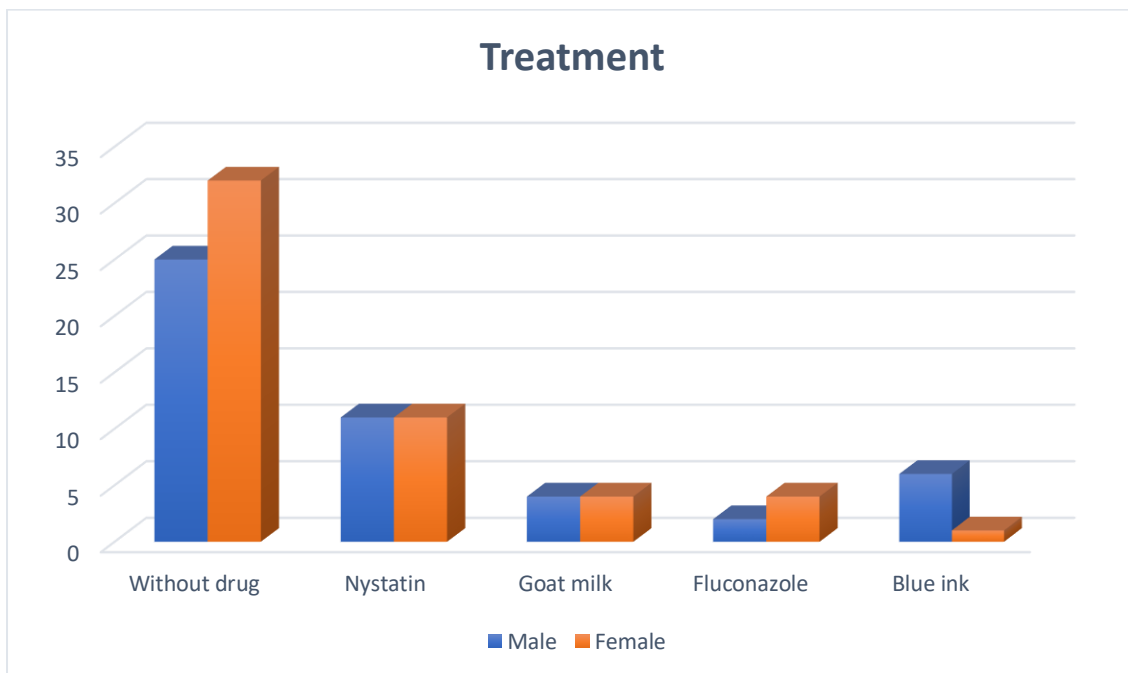
Figure (1): The results of frequency (%) for the age of the child in both male and female study group

**Table 2: The Relationship between bottle-feeding sterilization and incidence**

Parameters		Male (n=48)		Female (n=52)		Total (n=100)		p-value
		FR	%	FR	%	FR	%	
Number of daily sterilization times for bottle feeding	2	17	35.42	4	7.69	21	21	0.003*
	≥3	15	31.25	20	38.46	35	35	
	No feeding	16	33.33	28	53.85	44	44	
	Total	48	100	52	100	100	100	

**Table 3: The relationship between infection rate and personal oral health**

		Male (n=48)		Female (n=52)		Total (n=100)		p-value
		FR	%	FR	%	FR	%	
Washing of mouth after feeding	Yes	9	18.75	23	44.23	32	32	0.006*
	No	39	81.25	29	55.77	86	86	
	Total	48	100	52	100	100	100	



**Figure 2: A statistical study of the use of most treatments for candidiasis**

### Conflict of interests:

The authors have no competing interests.

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