



An Assessment of Dental Caries Rate at the Boston Medical Center GROW clinic

Minalie Jain, Christine Chiao, Keri Discepolo

Department of Pediatric Dentistry, Boston University Henry M. Goldman School of Dental Medicine, Boston, MA



Introduction

- Dental caries is the most prevalent chronic disease in children.^{1,2}
- Growth failure is when a child’s growth rate falls significantly below the expected rate, and may be caused by underlying chronic conditions, malnutrition, hormonal imbalance, and more.^{3,4}
- The GROW clinic at BMC provides comprehensive services for children with delayed growth milestones and serves to provide nutritional and dietary services.⁵

<https://www.bmc.org/pediatrics/grow-clinic>

The purpose of this retrospective study is to assess the dental caries rate from a sample of patients at the Boston Medical Center GROW clinic, a comprehensive interdisciplinary clinic for children with growth failure

Materials and Methods

Study population and Data Collection:

- A retrospective chart review of pediatric patients ages six and younger from Boston Medical Center (BMC) pediatric dentistry from June 2015 to June 2023
- Data was extracted from the Boston Medical Center Clinical Data Warehouse (CDW) as well as through manual data entry and included information on the patient’s medical and dental history

Data analysis:

- Data analysis was conducted on 694 patients using Microsoft Excel to assess dental caries rate
- Statistical analysis was completed with Chi Square Tests to assess relationships with GROW clinic attendees and E-CC and S-ECC

Results

Table 1. Description of Sample			
Characterisitic (n=694)		n	%
Gender			
	Females	247	35.6%
	Males	447	64.4%
Grow Clinic			
	Yes	107	15.4%
	No	587	84.6%
Language Spoken			
	English	417	60.1%
	Haitian creole	130	18.7%
	Spanish	53	7.6%
	Cape Verdean / Port Creole	31	4.5%
	Tigrinya	20	2.9%
	Somali	12	1.7%
	Other (includes: Amharic/Ethiopian, Arabic, Bengali/Hindi/Urdu, Brazilian Portuguese, Chinese, Gujarati, Kurdish, Pashtu, Vietnamese)	31	4.5%
ECC			
	n	291	41.9%
	Average Age of Incidence (Years)	4.5	1SD= 1.34
S-ECC			
	n	182	26.2%
	Average Age of Incidence (Years)	4.2	1SD = 1.253

Table 2. GROW clinic attendees had higher rates of ECC (52.3% vs. 40.0%; p=0.0177

ECC				
GROW clinic				
	Yes	No	% with ECC	
	56	51	52.3%	
	No	235	352	
			40.0%	

Table 3. GROW attendees had higher rates of Severe ECC (35.5% vs clinic. 24.5%; p=0.0175)

Severe ECC				
GROW clinic				
	Yes	No	% with SECC	
	38	69	35.5%	
	No	144	443	
			24.5%	

Table 4. Bivariate Analysis

	% with ECC	P value	% with S-ECC	P value
GROW clinic	52.3%	0.0177*	35.5%	0.0175*
No GROW clinic	40.0%		24.5%	

* Statistical significance based on chi-square test, with P≤0.05 in bold text

Discussion and Conclusion

- The results of this study indicate a correlation of GROW clinic attendees having higher rates of both ECC and S-ECC. This increase was statistically significant.
- GROW clinic attendees are often prescribed nutritional supplements such as Pediasure to facilitate growth rate. The added sugar from nutritional drink supplements may be related with ECC and S-ECC.
- Further studies are needed to determine other factors that cause E-CC and S-ECC in GROW clinic attendees.

References

