

# Adverse Childhood Experiences and Oral Health Status of children living in Rural Areas of Alexandria, Egypt: A household Survey

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## INTRODUCTION

Adverse Childhood Experiences (ACE) affect individuals' well-being in their formative years and have inversely proportional relationship with the person's health(1). When children are victims of ACEs, they become at risk of developing chronic diseases and commonly report higher incidence of caries in primary and permanent teeth(2). Scarce research assessed the link between Adverse childhood experiences (ACE) and oral health status of Egyptian children. This study aims to investigate the association between ACE and the oral health status of children living in rural areas in Alexandria, Egypt.

## METHODOLOGY

This study was carried out from May 2019 to February 2020 after obtaining the approval of the Research Ethics Committee, Faculty of Dentistry, Alexandria University (IRB 00010556 – IORG 0008839). The minimal required sample size was calculated (3) to be 294~ 300. Household survey was carried out in rural Northwestern Delta, Alexandria, Egypt using a multistage stratified random sampling. Children were included if they were residents of rural areas in Alexandria, aged between 6-18 years, free of mental or physical diseases and the parent/ caregiver was available and consented to participate. Data were collected using WHO oral health questionnaire, ACE questionnaire and clinical examination using DMF/dft, gingival and plaque index(4). Data collection was cut short due to the COVID-19 pandemic resulting in a sample of 229 participants and attempts to complete recruit were unsuccessful. The associations between the dependent variables (DMFT, dft, and GI) and the explanatory variables were assessed using linear regression analysis

## RESULTS AND DISCUSSION

Most children were females (57.2%) and mean age was 9.81 (SD 3.06). Also, 157 (68.6%) children had caries experience in primary teeth, mean ± SD dft= 3.03± 3.14. The mean ± SD gingival and plaque scores were 1.14± 0.37 and 1.40± 0.57, respectively. Also, 10.5% of children brushed at least once daily, 95.2% had sugary snacks at least once a day and 46.3% reported visiting the dentist at least once last year. The mean ± SD ACE score was 4.15 ± 1.91. Figure 1 shows that the most frequent ACEs were financial hardships (90.8%), witnessing violence (83.8%) and unfair treatment

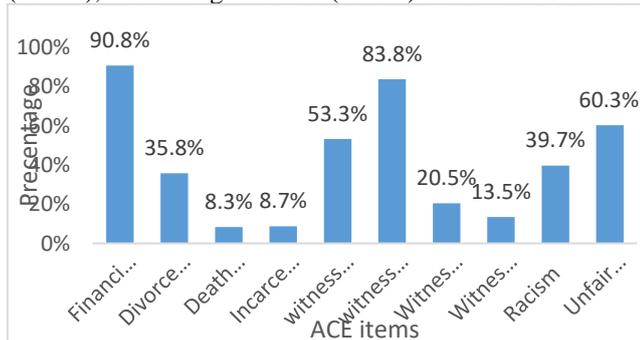


Figure 1: Percentage of Adverse Childhood Experiences reported by children participating in study (n=229)

(60.3%). Table 1 presents the factors associated with dft score. Model 1 shows that ACE was not significantly associated with dft score. Model 2 shows that sugar score, dental visits and plaque index score were not significantly associated with dft score. The adjusted “R2” of model 1 and model 2 were the same = 0.44.

Variable		Model 1 B (CI 95%)	Model 2 B (CI 95%)
ACE score		0.02 (-0.15, 0.18)	-
Sugar score	At least once daily	-	0.63(-0.79, 0.73)
	Less than once daily	-	Reference
Dentist visits last year	Less than once or never	-	-0.53 (-1.14, 0.08)
	At least once	-	Reference
Plaque index score		-	0.11 (-0.43, 0.64)
Adjusted R2		0.44	0.44

Table (1): Factors associated with dft score (n=229)

## CONCLUSION

It is evident that dental caries experience remains an issue that widely affects Egyptian children. The current study suggests that ACEs might have the same degree of impact on primary dental caries as oral health behaviors. Furthermore, this proposes that further research is needed to illuminate the hidden effects of the accumulation of these proximal variables. On the other hand, the effects of these experiences can be altered or reduced if sufficient support is received by the exposed individual; therefore it is recommended that upcoming dental professionals are educated on the matter enough to provide the preventive and corrective treatment that exposed communities need.

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*Figure 1: Percentage of Adverse Childhood Experiences reported by children participating in study (n=229)*