HIV Status Impact on Oral Health-Related Quality of Life in 3- to 4-year-old Kenyan Children

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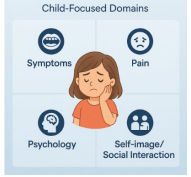
Background

- Children living with HIV are at increased risk for oral health disease characteristics, which can negatively affect oral health-related quality of life (OHRQoL).
- The Early Childhood Oral Health Impact Scale (ECOHIS) questionnaire utilizes an outcomes model aimed to measure OHRQoL in preschool children.
-This study investigates the impact of HIV status on OHRQoL using ECOHIS questionnaire among Kenyan children aged 3-4 years.

Methods

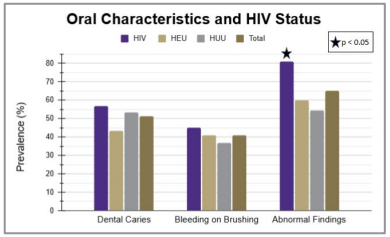
- A total of 360 children were recruited from clinics in Western Kenya and categorized by HIV status
- HIV statuses include: HIV+ (HIV;N=120), HIV-exposed uninfected (HEU;N=120), and HIV-unexposed uninfected (HUU;N=120)
- The ECOHIS assessed 4 child-focused domains: symptoms, function, psychology, and self-image/social interaction with 9 specific items.
- Higher ECOHIS values reflected a greater prevalence of negative impact on OHRQoL.
- Data were analyzed using descriptive statistics and t-tests(P<.05).



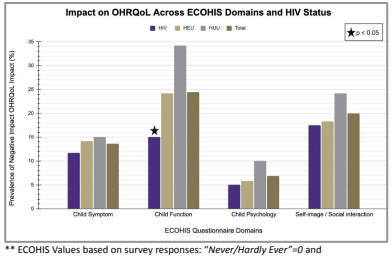
Results

Table 1: Cohort Characteristics of 3-4-year-old Kenyan Children by HIV Status

Variables	HIV 120 Mean (SD)	HEU 120 Mean (SD)	HUU 120 Mean (SD)	Total 360 Mean (SD)	P Value
Age					
Months	3.4 (0.5)	3.4 (0.5)	3.3 (0.5)	3.4 (0.5)	0.350
Sex					
Female	58 (48.33)	63 (52.50)	62 (51.67)	183 (50.83)	0.792
School					
Public	29 (24.17)	32 (26.67)	17 (14.17)	78 (21.67)	
Private	46 (38.22)	52 (43.33)	72 (60.00)	170 (47.22)	0.007
No school	45 (37.50)	36 (30.00)	31 (25.83)	112 (31.11)	-
Residence					
Urban	39 (32.50)	41 (34.17)	47 (39.83)	127 (35.47)	
Peri-urban	21 (17.50)	21 (17.50)	15 (12.71)	57 (15.92)	0.697
Rural	60 (50.00)	58 (48.33)	56 (47.46)	174 (48.60)	
Duration of ART Treatment					
12 mo or less	20 (16.67)				
13-24 mo	18 (15.00)				
25-36 mo	37 (30.83)				
37-48 mo	37 (30.83)				
49 mo or more	8 (6.67)				
Viral load (copies/mL)					
VL <50, Not detectable	78 (65.00)				
VL 50-400	22 (18.33)				
VL 400+	20 (16.67)				
Adherence					
>95%	17 (14.17)				
90-94%	77 (64.16)				
<90%	26 (21.67)				



**Abnormal findings include: submandibular lymphadenopathy, parotid gland enlargement, geographic tongue, general skin rash, perioral fungal infection



** ECOHIS Values based on survey responses: *"Never/Hardly Ever"=0* and *"Occasionally"=1, "Don't know"=0 (coded as missing). Higher ECOHIS value equates to higher prevalence of caregiver report of negative OHRQoL*

Table 2: Impact on OHRQoL Across ECOHIS Domains and HIV Status

ECOHIS Questionnaire (Domains and Items)	HIV (120) n (%)	HIV (120) Mean ± SD	HEU (120) n (%)	HEU (120) Mean ± SD	HUU (120) n (%)	HUU (120) Mean ± SD	Total (360) n (%)	Total (360) Mean ± SD	P value
Domain (Child Symptoms): How often has your child had…?									
Pain in the teeth, mouth or jaw	14 (11.7)	0.12±0.32	17 (14.2)	0.14±0.35	18 (15)	0.15±0.36	49 (13.6)	0.14±0.34	0.736
Domain (Child Function): How often has your child …because of dental problems or dental treatment?									
Difficulty drinking hot or cold beverages	10 (8.3)	0.08±0.28	15 (12.5)	0.13±0.33	27 (22.5)	0.23±0.42	52 (14.4)	0.08±0.28	0.006
Difficulty eating some foods	13 (10.8)	0.11±0.31	15 (12.5)	0.13±0.33	23 (19.2)	0.19±0.4	51 (14.2)	0.11±0.31	0.147
Difficulty pronouncing any words	7 (5.8)	0.06 ±0.24	9 (7.5)	0.08±0.26	10 (8.3)	0.08±0.28	26 (7.2)	0.06±0.24	0.748
Missed preschool, day-care, or school	4 (3.3)	0.03±0.18	3 (2.5)	0.03±0.16	3 (2.5)	0.03±0.16	10 (2.8)	0.03±0.18	0.902
Combined Domain	18 (15)	0.77±1.83	29 (24.2)	0.96±2.03	41 (34.2)	1.32±2.19	88 (24.4)	1.01±2.03	0.003
Domain (Child Psychology): How often has your child …because of dental problems or dental treatment?									
Had trouble sleeping	5 (4.2)	0.04±0.2	6 (5)	0.05±0.22	10 (8.3)	0.08±0.28	21 (5.8)	0.04±0.20	0.346
Been irritable or frustrated	4 (3.3)	0.03±0.18	5 (4.2)	0.04±0.2	6 (5)	0.05±0.22	15 (4.2)	0.03±0.18	0.812
Combined Domain	6 (5)	0.48±1.24	7 (5.8)	0.61±1.49	12 (10)	0.79±1.61	25 (6.9)	0.63±1.46	0.264
Domain (Self-image / Social Interaction): How often has your child …because of dental problems or dental treatment?									
Avoided smiling	2 (1.7)	0.02±0.13	3 (2.5)	0.03±0.16	4 (3.3)	0.03±0.18	9 (2.5)	0.02±0.13	0.710
Avoided talking	1 (0.8)	0.01±0.09	4 (3.3)	0.03±0.18	6 (5)	0.05±0.22	11 (3.1)	0.01±0.09	0.168
Combined Domain	21 (17.5)	0.41±0.99	22 (18.3)	0.52±1.2	29 (24.2)	0.66±1.28	72 (20)	0.53±1.17	0.372

Conclusions

1. Mean age was 3.4y(SD=0.5); 51% were females, 47% attended private school, and 49% lived in rural areas.
2. Children with HIV had a higher prevalence of abnormal findings(81%) compared to HEU(60%) and HUU(54%).
3. For the overall *Child Function* domain and item, "*Difficulty drinking cold and hot beverages,* the HIV group's caregivers reported a statistically significant(P<0.05) lower prevalence of negative OHRQoL impacts(15%,8.3% respectively) compared to HEU(24.2%,12.5%) and HUU(34.2%,22.5%).

Next Steps

This assessment will be invaluable as a baseline for longitudinal analysis of the impact of HIV status on quality of life of young children in Kenya.

Scan for References

Acknowledgements

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