

The Impact of Health Literacy and Acculturation on the Oral Health Status of Somali Refugees Living in Massachusetts

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Introduction

- Oral health problems are among the most common health problems facing refugees resettled in the U.S.
- The extent to which health literacy affects oral health in refugee populations has not been studied.
- The objective of this study was **to define relationships between literacy, acculturation, and oral health outcomes among Somali refugees.**

Methods

- Cross-sectional descriptive study using mixed quantitative and qualitative methods
 - Approved by the IRB of the Mass. Dept. of Public Health
- Quantitative:
 - 439 Somali adults who had lived in the U.S \leq 10 years.
 - Standardized/validated instruments
 - All interviews were conducted in the Somali language except for measures of English language skills
 - An oral examination measured decayed, missing and filled teeth (DMFT) and NHANES periodontal index.

Methods

- Language and acculturation measures included:
 - STOFHLA (Low=0-22; High=23-36)
 - REALD (Low=0-22; High=23-30)
 - BEST-Plus (Low=0-329; Medium=330-598; High=599-999)
 - Adaptation of the Haitian Acculturation Scale
- Analyses focused on STOFHLA and 3 oral health outcomes:
 - DMFT count as a measure of lifetime caries history
 - Ratio of decayed teeth (DT) to decayed and filled teeth (DT+DFT) > 0.5 as a measure of acute, untreated caries
 - Periodontal Index: ≥ 4 mm of pocket depth in > 1 site
- Preliminary analyses included basic demographic variables plus key variables thought to affect oral health status
- Backward elimination logistic regression with 0.2 alpha level to stay in the model

Results from 439 Participants

- 87% ethnic Somalis; 13% Somali Bantus
- 75% < HS education
- 72% reported income < \$1,000 per month
 - 83% Medicaid
- 63% had seen a dentist since arrival in U.S.
 - 54% in the past year*
- 60% never used dental floss
- 98% reported brushing ≥ 2 times/day
- 43% used traditional *miswak* stick brushes

*For comparison: MA gen'l population: Insured=75%; Uninsured=30%

Miswak



Language Measures

	TOTAL %	STOFHLA LOW %	STOFHLA HIGH %	REALD LOW %	REALD HIGH %	BEST+ LOW %	BEST+ MED %	BEST+ HIGH %
OVERALL	439*	326 (74%)	113 (26%)	319 (73%)	120 (27%)	247 (58%)	68 (16%)	109 (26%)
18-24 Yrs	32%	24	56	24	53	17	57	51
25-44 Yrs	42%	45	36	44	38	45	32	39
≥ 45 Yrs	26%	32	8	32	8	38	10	11
Male	42%	36	58	34	64	29	62	58
Female	58%	64	42	67	36	71	38	42
No School	37%	48	7	50	4	57	18	7
< HS	38%	39	35	40	35	34	43	46
≥ HS	25%	13	58	11	61	9	40	47
Somali	87%	83	98	83	98	81	91	98
Bantu	13%	17	2	17	2	19	9	2

Note: Percent totals may not equal 100 due to rounding; *N for BEST+ is 424.

Oral Exam Findings

	DT, Mean	MT, Mean	FT, Mean	DMFT, Mean	Perio. Dz, %
OVERALL	1.3 (0-14)	1.4 (0-19)	2.8 (0-32)	5.5 (0-32)	6.5
18-24 Yrs	1.2	0.8	1.6	3.5	2.9
25-44 Yrs	1.4	1.4	2.2	5.0	5.4
≥ 45 Yrs	1.5	2.1	5.1	8.8	13.0
Male	1.3	1.0	2.1	4.4	8.2
Female	1.4	1.7	3.2	6.3	5.2
No School	1.0	2.3	3.5	6.9	10.6
< HS	1.6	0.8	2.2	4.6	2.4
≥ HS	1.5	0.9	2.4	4.8	6.5
Somali	1.5	1.4	2.9	5.7	6.1
Bantu	0.5	1.5	2.0	4.0	8.9

Adjusted Odds of DMFT by STOFHLA Score Stratified by Time in U.S.

	<i>Odds Ratio</i>	<i>95% Confidence Interval</i>	
<i>STOFHLA: Low vs. High*</i>			
0-4 years in US:	0.78	0.64	0.96
5-10 years in US:	1.37	1.07	1.74
<i>Acculturation: Low vs. High</i>	0.94	0.76	1.16
<i>Acculturation: Med. vs. High</i>	0.80	0.67	0.95

*STOFHLA: Low= 0-22; High = 23-36

Adjusted Odds of Untreated Decay by STOFHLA Scores Stratified by Time in U.S.

	<i>Odds Ratio</i>	<i>95% Confidence Interval</i>	
<i>STOFHLA: Low vs. High*</i>			
0-4 years in US:	0.65	0.29	1.46
5-10 years in US:	1.86	0.74	4.69
<i>Acculturation: Low vs. High</i>	0.28	0.12	0.67
<i>Acculturation: Medium vs. High</i>	0.67	0.34	1.31

*STOFHLA: Low= 0-22; High = 23-36

Adjusted Odds of Periodontal Disease by STOFHLA Scores

	<i>Odds Ratio</i>	<i>95% Confidence Interval</i>	
STOFHLA: <i>Low vs. High</i> *	0.08	0.01	0.65
Acculturation: <i>Low vs. High</i>	15.44	1.08	220.32
Acculturation: <i>Med. vs. High</i>	8.50	1.08	66.69

*STOFHLA: Low= 0-22; High = 23-36

Conclusions

- Low health literacy was associated with:
 - reduced risk of DMFT in individuals living in the U.S. less than 4 years;
 - increased risk for those in the U.S. for 5-10 years; and
 - greatly reduced risk of periodontal disease
- Low health literacy was not an independent risk factor for untreated caries; although the relationship between them appears to reverse over time in the U.S. as was the case with literacy and DMFT.
- Increasing level of acculturation was inversely associated with risk of periodontal disease.
- We hypothesize that the elevated prevalence of DT may reflect barriers to restorative care other than low literacy.