

Impact of a community health advisor-based intervention on self-reported frequency of dental visits in a rural, low-income African American Alabama community

Stephen Clarke, PhD, MA
University of Alabama at Birmingham
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- Co-Authors
 - Connie Kohler, DrPH, University of Alabama at Birmingham (UAB)
 - T. Mark Beasley, PhD, UAB
 - H. Russell Foushee, PhD, UAB
 - Brad Lian, PhD, UAB
 - LeaVonne Pulley, PhD, University of Arkansas for Medical Sciences
 - Stuart Usdan, PhD, University of Alabama at Tuscaloosa
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Adults aged 65+ who have had all their natural teeth extracted*

	Alabama	United States
Black	38.9%	27.9%
Income <\$15K/yr	31.6%	37.5%

*BRFSS 2006

Visited the dentist or dental clinic within the past year for any reason*

	Alabama	United States
Black	65.5%	63.8%
Income <\$15K/yr	35.6%	47.8%

*BRFSS 2006

The Study

- Theoretical underpinnings
 - Social Cognitive Theory
 - Diffusion of Innovations
 - Community Health Advisor (CHA) Model
- Study design and activities
 - 2 communities (Intervention and Control)
 - Repeated x-sectional survey sampling
 - Intervention: 13 CHAs trained in oral health basics and spread info to community in variety of settings

Methods: Design

O: Survey X: Intervention

	July 2003		June 2004
Uniontown (Ix)	O	X	O
Union Springs (Cx)	O		O

Methods: Basic Questions

- Whether intervention was associated with increase in
 - Respondents saying they visit the dentist “regularly”
 - Reports of dental visit within the last 12 months
- Whether above associations were mediated by respondent attitudes toward dental visits

Methods: Measures

- Visit frequency
 - “Regularly” vs. other than “Regularly”
(Occasionally, whether or not you have a problem;
Only when you have a problem; Never)
- Last visit
 - Within last 12 months vs. More than 12 months ago
- Attitudes toward dental visits (Likert items)
 - Pain: Dental visits are painful
 - Cost: Dental visits cost too much for what you get
 - Keep teeth: Dental visits help you keep your teeth

Results

Table 1. 2000 U.S. Census Figures for Intervention and Comparison Communities

	Uniontown, AL (Intervention)	Union Springs, AL (Comparison)
Total Population	1,636	3,670
African American	88%	74%
Household median income	\$12,386	\$18,520
% below poverty line	47%	40%
# of dental clinics within town limits*	1	2

•*Obtained via internet search, not via U.S. Census

Results

Table 2. Selected Demographics for Survey Samples

Survey Year	Community	Gender		Race		Income	Education		Mean Age
		Male	Female	White	Black	<\$5000	<High Sch	HS dipl only	
2003 (Pre-Intx)	Uniontown (Ix) n=287	30%	70%	19%	82%	24%	23%	33%	49.1
	Union Springs (Cx) n=322	32%	68%	36%	64%	19%	20%	33%	53.6
2004 (Post-Intx)	Uniontown (Ix) n=334	31%	69%	18%	83%	27%	26%	38%	48.8
	Union Springs (Cx) n=321	25%	75%	32%	68%	19%	23%	37%	54.8

Results

Table 3. Percent of respondents reporting they visit the dentist ‘regularly’

Year	How often do you visit the dentist?	Community		
		Uniontown (Tx)	Union Springs (Cx)	
2003	Regularly	Count	80	112
		% of sample	27.49%	34.57%
2004	Regularly	Count	112	119
		% of sample	32.94%	37.07%
Pre-Post difference		+5.45%	+2.50%	

Results

Table 4. Percent responding that their last visit within one year was preventive

Year	Last visit preventive?		Community	
			Uniontown (Tx)	Union Springs (Cx)
2003	yes	Count	86	120
		% of sample	29.55%	37.04%
2004	yes	Count	105	113
		% of sample	30.88%	35.20%
Pre-Post difference			+1.33%	-1.84%

Results

Table 5. Intervention plus covariates as predictors of Regular Visits (n = 844).

Variable	B	S.E.	Wald	p-value	OR
Age	-0.017	0.005	13.334	<i>0.000</i>	0.984
Education	0.248	0.064	15.228	<i>0.000</i>	1.282
Income	0.329	0.041	64.469	<i>0.000</i>	1.390
Race	-0.627	0.177	12.617	<i>0.000</i>	0.534
Gender	0.786	0.170	21.236	<i>0.000</i>	2.194
Treatment	0.085	0.216	0.156	0.693	1.089
Year	0.251	0.210	1.440	0.230	1.286
Intervention	0.106	0.292	0.132	0.716	1.112
Constant	-5.347	0.918	33.899	0.000	0.005

Results

Table 6. Intervention plus covariates as predictors of responses other than “Regularly” for Visit Frequency (n = 721).

Variable	B	S.E.	Wald	p-value	OR
Age	-0.037	0.007	30.141	<i>0.000</i>	0.963
Education	0.077	0.094	0.658	0.417	1.080
Income	0.191	0.060	10.188	<i>0.001</i>	1.210
Race	0.252	0.297	0.720	0.396	1.287
Gender	-0.095	0.228	0.174	0.676	0.909
Treatment	-0.705	0.299	5.557	<i>0.018</i>	0.494
Year	-0.391	0.302	1.680	0.195	0.676
Intervention	0.480	0.435	1.219	0.270	1.617
Constant	-1.072	1.332	0.647	0.421	0.342

Results

Table 7. Intervention plus covariates as predictors of Preventive Visit (n = 886).

Variable	B	S.E.	Wald	p-value	OR
Age	-0.023	0.004	27.669	0.000	0.977
Education	0.139	0.061	5.195	0.023	1.149
Income	0.281	0.039	51.162	0.000	1.324
Race	-0.196	0.173	1.287	0.257	0.822
Gender	0.280	0.157	3.207	0.073	1.324
Treatment	-0.091	0.202	0.200	0.655	0.913
Year	-0.008	0.198	0.002	0.968	0.992
Intervention	-0.021	0.279	0.006	0.940	0.979
Constant	-2.633	0.861	9.344	0.002	0.072

Results

**Table 8. Logistic Regression:
Attitude items plus covariates as predictors of Regular Visit (n = 886).**

Variable	B	S.E.	Wald	p-Value	OR
Age	-0.020	0.004	21.250	<i>0.000</i>	0.980
Education	0.085	0.064	1.787	0.181	1.089
Income	0.262	0.040	42.317	<i>0.000</i>	1.300
Race	-0.198	0.176	1.261	0.262	0.820
Gender	0.275	0.160	2.955	0.086	1.317
Attitude: Cost	0.169	0.059	8.195	<i>0.004</i>	1.184
Attitude: Pain	0.278	0.062	20.055	<i>0.000</i>	1.321
Attitude: Keep Teeth	0.192	0.105	3.347	0.067	1.211
Constant	-4.129	0.955	18.704	0.000	0.016

Results

Table 9. Linear Regression: Intervention and covariates as predictors of Attitude: Cost.

Variable	Unstandardized coefficients		Standardized coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	2.487	0.476		5.228	0.000
Age	-0.001	0.002	-0.017	-0.545	0.586
Education	0.003	0.034	0.003	0.082	0.934
Income	0.051	0.022	0.085	2.358	<i>0.019</i>
Race	-0.026	0.096	-0.009	-0.271	0.786
Gender	-0.107	0.084	-0.040	-1.281	0.201
Treatment	-0.337	0.109	-0.137	-3.079	0.002
Year	-0.149	0.107	-0.060	-1.385	0.166
Intervention	0.533	0.151	0.192	3.536	<i>0.000</i>

Results

Table 10. Linear Regression: Intervention and covariates as predictors of Attitude: Pain

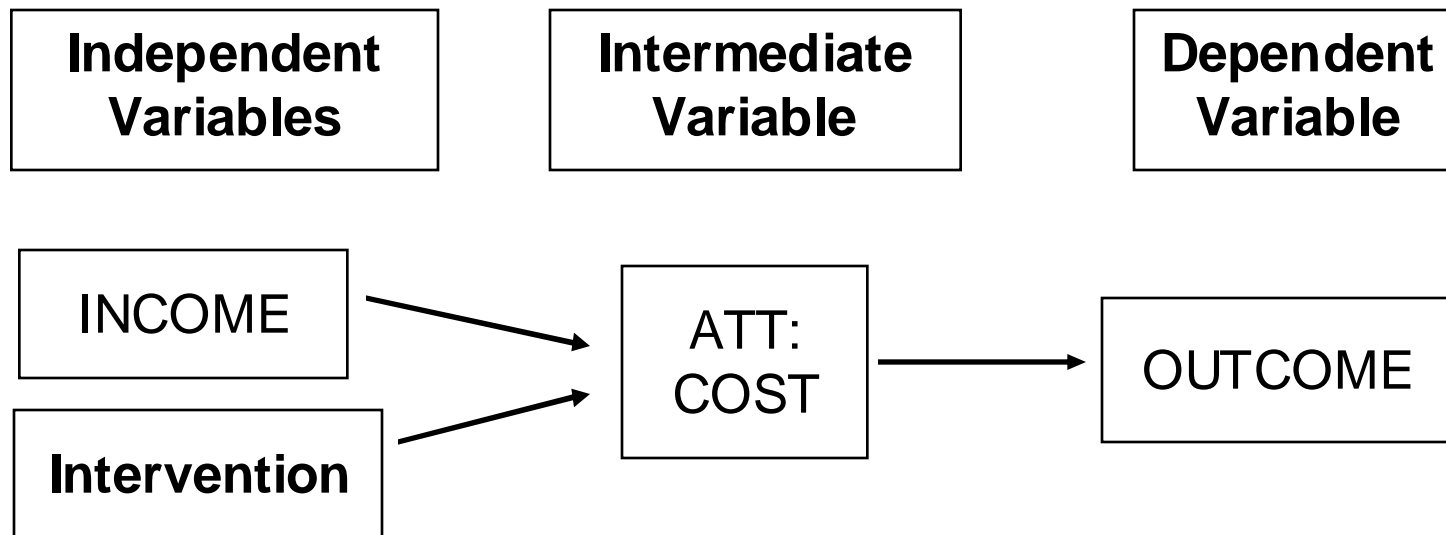
Variable	Unstandardized coefficients		Standardized coefficients	t	p-value
	B	Std. Error	Beta		
(Constant)	1.518	0.463		3.279	0.001
Age	-0.006	0.002	-0.079	-2.532	0.011
Education	0.127	0.033	0.128	3.870	0.000
Income	0.073	0.021	0.124	3.517	0.000
Race	-0.046	0.092	-0.016	-0.503	0.615
Gender	-0.008	0.081	-0.003	-0.102	0.919
Treatment	-0.153	0.106	-0.063	-1.445	0.149
Year	0.031	0.103	0.013	0.303	0.762
Intervention	0.217	0.146	0.079	1.490	0.137

Results

Table 11. Linear Regression: Intervention & covariates as predictors of Attitude: Keep Teeth

Variable	Unstandardized coefficients		Standardized coefficients	t	p-value
	B	Std Error	Beta		
(Constant)	3.150	0.285		11.064	0.000
Age	-0.001	0.001	-0.023	-0.722	0.470
Educ	0.076	0.020	0.125	3.766	<i>0.000</i>
Income	0.040	0.013	0.110	3.095	<i>0.002</i>
Race	0.011	0.057	0.006	0.188	0.851
Gender	0.072	0.050	0.044	1.446	0.149
Treatment	-0.016	0.065	-0.010	-0.241	0.810
Year	-0.075	0.064	-0.050	-1.176	0.240
Intervention	-0.004	0.090	-0.002	-0.045	0.964

Results



Discussion: Conclusions

- Results suggest tentative conclusion that
 - the intervention improved self-reported regularity of dental visits and actual recent (last 12 mo) visit occurrence...
 - via change in attitudes toward cost of dental visit
- However, given the many unseen variables in a rural community setting, caution is warranted

Discussion: Limitations

- One-year follow-up time period
- Lack of oversight of CHA activities
- No measure of exposure to CHA/intervention activities
- Pre-post administrations cross-sectional, not cohort-based

Suggestions for Further Study

More of everything

- Money
- Time
- Staff
- Focus
- Survey development
- Balance of QC with CHA creative freedom

Suggestions for Further Study

- Include questions relating to degree of CHA contact with survey respondent
- Cohort vs cross-sectional survey
- 1- to 2-year follow-up to measure longer-term effects
- Further investigation of attitudes toward target behavior as a mediating/indirect link between intervention and behavior