

Breathe Free: Partnering with 2-1-1 to Increase Smoking Cessation Among Low Income Smokers

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Introduction

Smoking tobacco is the leading cause of preventable death in the United States, and smoking rates remain stubbornly high among low-income smokers. While lower-income smokers attempt to quit, their success rate is lower than those of a higher SES. This implementation research project partnered with United Way of Greater Cleveland's 2-1-1 based on resident recommendation to provide cessation services through a resource context that is already considered familiar and supportive to low-income residents. Through targeted messaging within three urban neighborhoods and in partnership with 12 community organizations (libraries, daycares, churches, etc.), smokers were directed to call 2-1-1 to be linked to smoking cessation resources. Messaging included a 4-week radio and bus campaign which was followed by an 8-week organization intervention including print media and smoke-free policy promotion. Bus and organizational media leveraged the CDC Tips from a Former Smoker campaign.

Methods

- This project used mixed methods to understand the intervention implementation and its outcomes.
- 210 participants (N=210) were enrolled in the cohort sample. Participants were recruited from churches, daycares, and libraries in three different neighborhoods.
- Data was collected via survey at five different time points during the study.
- Frequencies were run to examine prevalence of adult tobacco use, smoke free rules in homes, smoking risk perceptions, and use of 2-1-1 for tobacco related resources among samples of individuals in the communities. Variables were evaluated before and after the implementation of the media campaign, and immediately post- and 4-weeks post organization intervention.
- Effectiveness of the intervention was evaluated using the longitudinal cohort data, and within-person change over time was examined using paired-McNemar tests. Significance was determined at p-value <0.05.

Results

Table 1. Demographic Characteristics Of BreatheFree Cohort

	Overall (N=210) N (%)	Church (N=71) N (%)	Daycare (N=85) N (%)	Library (N=54) N (%)
Mean age (SD)	41.43 (16.41)	49.18 (16.30)	35.10 (13.16)	41.87 (17.25)
%Female	135 (66.2%)	41 (59.4%)	68 (82.9%)	26 (49.1%)
Mean household size (SD)	4.07 (7.37)	3.13 (2.27)	3.83 (2.21)	5.64 (13.97)
Race/Ethnicity				
Black/African-American*	184 (90.6%)	62 (91.2%)	77 (93.9%)	45 (84.9%)
Hispanic	6 (3.0%)	3 (4.4%)	0 (0.0%)	3 (5.7%)
Other*	13 (6.4%)	3 (4.4%)	5 (6.1%)	5 (9.4%)

*Non-Hispanic

Table 3. Significant Differences in Paired Comparison of Characteristics from Time 1 to Time 5

	Overall Time 1 (n)	Overall Time 5 (n)	p-value
Smoked a Nicotine Product (last 30 days) (N=85)	28	19	.022
Cigarette (N=85)	19	13	.031
Smoking is not allowed anywhere inside my house vs all other rules (N=88)	52	64	.008

Figure 1. Example of Palm Card



Table 2. Behaviors, Rules, and Risk Perceptions Over Time

	Time 1 (N=174) N (%)*	Time 2 (N=141) N (%)*	Time 3 (N=115) N (%)*	Time 4 (N=114) N (%)*	Time 5 (N=109) N (%)*
Any past 30-day Smoking	62 (38.0%)	51 (38.1%)	25 (21.9%)	22 (38.0%)	24 (22.6%)
Cigarette	43 (26.4%)	37 (27.6%)	17 (14.9%)	16 (14.7%)	17 (16.0%)
Cigar, Cigarillo, Little Cigar	21 (12.9%)	20 (14.9%)	10 (8.8%)	8 (7.3%)	8 (7.5%)
E-Cigarette/Electronic Vapor Product	3 (1.8%)	4 (3.0%)	0 (0.0%)	1 (0.9%)	2 (1.9%)
Smoked Marijuana (last 30 days)	18 (11.0%)	16 (11.9%)	8 (7.0%)	5 (4.6%)	8 (7.5%)
Smoking Rule in Home					
Not allowed anywhere inside	92 (55.4%)	82 (61.2%)	80 (70.8%)	84 (75.7%)	79 (72.5%)
Great Risk If...					
Smoke 1+ Packs of Cigarettes a Day	126 (73.7%)	100 (73.5%)	91 (79.1%)	92 (82.9%)	86 (78.9%)
Smoke Cigars, Cigarillos, Little Cigars Regularly	111 (64.5%)	90 (66.2%)	82 (71.3%)	80 (72.1%)	82 (75.2%)
Smoke Marijuana Regularly	66 (18.6%)	52 (38.2%)	43 (37.7%)	45 (40.5%)	42 (38.9%)
Around Others who Smoke Cigarettes	101 (58.7%)	74 (53.2%)	60 (52.6%)	74 (67.3%)	69 (63.3%)
Around Others who Smoke Cigars, Cigarillos, Little Cigars	94 (55.0%)	77 (55.4%)	62 (54.4%)	72 (66.1%)	65 (59.6%)
Around Others who Smoke Marijuana	58 (33.7%)	42 (30.4%)	43 (37.7%)	39 (35.1%)	39 (36.1%)
Encouraged someone to call 2-1-1 about tobacco	N/A	13 (12.4%)	11 (9.6%)	15 (13.3%)	14 (12.8%)

*Valid Percent

Results

- All organizations displayed at least one poster promoting 2-1-1 for cessation; all but one organization provided palm cards promoting United Way's 2-1-1.
- Prior to the intervention, 2-1-1 received on average 1 call per week for referrals to resources for smoking cessation. During the four-week media campaign, 2-1-1 received ~8 calls per week. After the media campaign and through the organizational intervention period, 2-1-1 received ~5 calls per week. (data not shown)
- Among the cohort participants, current cigarette use significantly declined pre-media campaign to 4 weeks post-organization intervention (T1-T5, p=.031). Any nicotine use and smoking a nicotine product significantly decreased pre-media to immediately following the organization intervention (p=.041 for both) as well as 4-weeks post organization intervention (p=.039 and p=.031 respectively). (See Table 3)
- There was a significant increase in participants reporting that smoking is not allowed anywhere inside of their house pre-media campaign to in the middle of the intervention (T1-T3, p=.031), to immediately post-organization intervention (T1-T4, p=.007) and 4-weeks post-organization intervention (T1-T5, p=.008).

Conclusions

Combining a media campaign with an organizational intervention linking low-income smokers to cessation services via a trusted community partner led to a sustained increase in calls to 2-1-1 for cessation support and a significant decline in smoking and an increase in having rules in the home for smoking. This may be an effective non-clinical approach to increase access and uptake of smoking cessation in low-income populations. More research is needed to understand if needs of 2-1-1 callers were met and if cessation resources provided were satisfactory to callers and led to a successful quit attempt.

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