This is a supplemental document for the manuscript titled "The effects of smoke-free policy among residents of multi-unit public housing in Minnesota" which was submitted to the American Journal of Health Promotion on October 29, 2019.

Purpose: The primary purpose of this study was to evaluate the impact of a local policy intervention on exposure to secondhand smoke (SHS) for low-income multiunit residents and on cigarette smoking behavior. We also wanted to examine if this policy was effective with individuals with disabilities, older adults, and persons who define themselves as Somali and Oromo.

Design: We employed a single-arm pre- and post-intervention survey design to evaluate if a smoke-free policy had an effect on SHS exposure reported at the apartment level. Anonymous surveys were administered in 2 waves: the pre-survey 2 months before the policy took effect in each building, and the post-survey 5-6 months after the policy took effect.

Sample: Nine multiunit apartment buildings owned by Minneapolis Public Housing Authority that implemented a smoke-free policy in the summers of 2013 and 2014.

Measures: The key outcome variables were 2 measures of SHS exposure inside the apartment and 1 on current cigarette use that we evaluated using identical questions on the pre- and post-surveys.

Survey respondents: The pre-intervention survey was completed by residents from 761 apartments, a 71.3% response rate. Residents from 765 apartments completed the post-intervention survey, a response rate of 71.6%. Sample description for study population primarily using pre-survey data is provided in Table 1.

Demographic characteristics		Pre survey (Total=761)					
		Ν	%				
Age	18-34	49	6.6				
	35-54	128	17.3				
	55-64	204	28.4				
	65+	357	47.6				
Gender	Male	392	53.0				
	Female	348	47.0				
Race and	White	126	17.3				
ethnicity	Black/African-Somali/Oromo	361	49.5				
	Black/African- Other	169	23.2				
	Other race and multi-racial	73	10.0				
Less than high school education		344	47.6				
Household income \$10,000 or less		562	78.3				
Having a disability ^a		182	30.0				
Households with children aged 0-17		29	3.8				

Table 1. Characteristics of residents from nine Minneapolis Public Housing Authority buildings, Minnesota, 2013-2014.

a. Data is only available from the post survey.

Analysis: Formulation of two data analysis cohorts

The pre-intervention survey was completed by the residents from 761 apartments. The post-intervention survey was completed by the residents from 765 apartments. Residents from 622 apartments completed both the pre and post survey.

For the evaluation of SHS exposure and smoking behavior change, 32 surveys were excluded from the 622 apartments that have participated in both pre and post surveys, as they indicated that they stayed in the same building for less than 6 months. This reaches a size of 590 same apartment panel for evaluation. Two analysis cohorts were derived from this panel. The illustration of the formulation process is described in Figure 1.

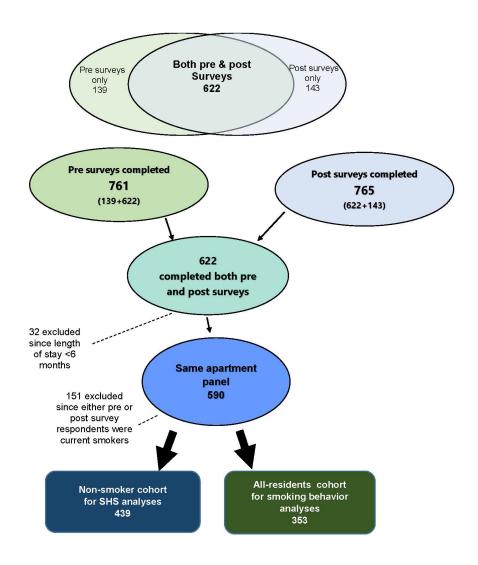


Figure 1. Formulation of two data analysis cohorts

Non-smoker cohort: Of the 590 respondents in the same apartment panel, 151 respondents reported that they were current smokers either at time of pre- or post-survey. The non-smoker cohort (n=439) excluded these current smokers and were used for evaluating SHS exposure outcomes.

All-resident cohort: Of these 590 respondents in the same apartment panel, 353 were highly likely to have the same respondent complete both the pre- and post-intervention surveys, as inferred by having the same gender, race, and ethnicity and the same age within 1 year.

Results: The manuscript briefly describes the results, but the detailed comparison of outcome indicators before and after smoke-free policy among residents from nine Minneapolis Public Housing Authority buildings is described in Table 2.

	Table 2 among resider					,	ore and aft prity buildir		-	-			
Indicators		Among all residents		Among Seniors (65+)		Among residents with a disability			Among Somali/Oromo residents				
		Before policy (%)	After policy (%)	Wilcoxon paired T-test	Before policy (%)	After policy (%)	Wilcoxon paired T-test	Before policy (%)	After policy (%)	Wilcoxon paired T-test	Before policy (%)	After policy (%)	Wilcoxon paired T-test
Non-smoker cohort for second hand smoke exposure (SHS) indicators		n=439		n=222		n=101		n=258					
Tobacco smoke exposure inside apartment from <i>internal</i> source	How often does someor	ne smoke	tobacco ir	nside your a	apartment	!?		•					
	(1) A few times a week or more often	5.8	1.7	0.002	3.3	1.4	0.206	8.2	1.0	0.020	2.5	2.1	0.739
	(2) A few times a month or less often	94.2	98.3		96.7	98.6		91.8	99.0		97.5	97.9	
	(1) Daily	2.2	1.2	0.248	1.9	1.4	0.705	1.0	0.0	0.317	2.1	2.1	1.000
	(2) Less often	97.8	98.8		98.1	98.6		99.9	100.0		97.9	97.9	
Tobacco smoke exposure inside	How often does tobacco	o smoke ei	nter your a	apartment f	rom som	ewhere el	se in or aro	und your b	ouilding?				
apartment from external source	(1) A few times a week or more often	24.1	13.5	0.000	18.7	9.6	0.003	33.3	21.2	0.014	22.7	8.6	0.000
	(2) A few times a month or less often	75.9	86.5		81.3	90.4		66.7	78.8		77.3	91.0	
	(1) Daily	14.8	7.4	0.000	12.8	5.0	0.004	19.2	12.1	0.127	14.9	5.5	0.000
	(2) Less often	85.2	92.6		87.2	95.0		80.7	87.9		85.1	94.5	
Tobacco smoke exposure from either <i>internal</i> or <i>external</i> sources	(1) A few times a week or more often	28.4	14.4	0.000	21.3	10.4	0.001	39.2	22.0	0.002	24.5	10.5	0.000
	(2) A few times a month or less often	71.6	85.6		78.7	89.6		60.8	78.0		75.5	89.5	
	(1) Daily	17.2	8.3	0.000	14.5	5.9	0.003	19.6	12.4	0.088	16.7	7.0	0.000
	(2) Less often	82.8	91.7		85.5	94.1		80.4	87.6		83.3	93.0	
Tobacco smoke expoure inside apartment from external only	(1) A few times a week or more often	22.3	13.0	0.000	18.3	9.1	0.000	31.3	21.2	0.041	21.6	8.6	0.000
	(2) A few times a month or less often	97.7	87.0		81.7	90.9		68.7	78.8		78.4	91.4	
	(1) Daily	14.4	7.2	0.000	12.8	4.6	0.002	19.2	12.1	0.127	14.1	5.1	0.001
	(2) Less often	85.6	92.8		87.2	95.4		80.8	87.9		85.9	94.9	
All-resident cohort for smoking behavior indicator		n=353		n=153		n=130			n=133				
Currently smoking (everyday or someday smoker, smoked>=100 cig)	yes	27.2	22.3	0.006	19.3	16.7	0.285	40.6	35.2	0.090	5.4	6.9	0.480
	No	72.8	77.7		80.7			59.4	64.8		94.6	93.1	
Currently DIALY smoking (everyday , smokes>=100 cig)	yes	19.9	9.5		16.0	8.0	0.005	28.9	13.3	0.000	4.6	5.4	0.705
	No	80.1	90.5		84.0	92.0		71.7	86.7		95.4	94.6	
Support for smoking f appartment)	How much do you support a no-smoking policy in all individual appartment units within your building?												
All residents (761 pre, 765_post	Strongly gree	66.2	71.7										
All non-smoker cohort	Strong agree	80.1	85.4										