

Guest Support for Outdoor Smoke-Free Policies within a Homeless Shelter

Jayda Martinez, BS Candidate¹, Midhat Z. Jafry, BS Candidate^{1,2}, Tzuan A. Chen, Ph.D.^{1,3}, Michael S. Businelle, Ph.D.^{3,4}, Darla E. Kendzor Ph.D.⁴, Maggie Britton, Ph.D.^{1,3}, Maya Vijayaraghavan⁵, MD, & Lorraine R. Reitzel, Ph.D^{1,3}

¹ Department of Psychological, Health & Learning Sciences, University of Houston, ² Department of Biology and Biochemistry, University of Houston, ³ HEALTH Research Institute, University of Houston, ⁴ TSET Health Promotion Research Center, University of Oklahoma Health Sciences Center, ⁵ Division of General Medicine, University of California

Background & Introduction

- 580,466 Americans are experiencing homelessness; 49% of this population seek sanctuary at homeless shelters.
- 70%-80% of this population smoke cigarettes and have an increased risk of premature tobacco-related morbidities and mortality.
- Texas shelter policies prohibit smoking indoors; however, tobacco use is typically prevalent outside of shelters (entranceways) and in open-air spaces within the grounds.
- The importance of adopting outdoor smoke-free policies include that guests may have increased motivation to quit, reduced exposure to environmental tobacco smoke, reduced use cues that may lead to cravings from former smokers, and - ultimately - reduced tobacco-related morbidity and mortality.
- Shelter administrators, however, may be reluctant to implement an outdoor smoke-free policy for fear it will discourage guests from residing there, could increase negative interactions with the community when guests leave the property to smoke, and that its enforcement (e.g., fines or eviction) would be counter to their mission and values.
- However, administrators’ assumptions may be faulty; it could be that shelter guests are amenable to a partial (here, cigarette smoking is allowed in half of the shelters’ outdoor, open-air courtyard on the shelter grounds) or a full policy (here, cigarette smoking is completely disallowed in the outdoor, open-air courtyard).
- The **purpose** of the current secondary data analysis is to obtain the shelter guest perspective on supporting outdoor smoke-free policies, and to characterize supporters of these tobacco control policies by smoking status (never smokers, former smokers, and current smokers) and other characteristics.

Methodology

Participants: Shelter guests were recruited within an adult homeless shelter in Dallas, TX (N=394, M_{age}=43.3, 71.8% men; 55 never smokers, 40 former smokers, 299 current smokers). All participants provided informed consent for participation and data collection occurred on site. About 75% of shelter guests at the time were enrolled in the study.

Measures:

- **Self-report participant characteristics:** age, sex, education, last month’s income, employment status, health insurance status, veteran status, homelessness duration over the lifetime (in months), number of homeless episodes in the lifetime, length of time being guest at the shelter (in weeks), the average number of hours spent per day on-site, the average number of smokers participants was around, number of close friends who smoke, regular use of non-conventional tobacco products, diagnosis of a non-nicotine substance use disorder, and diagnosis of severe mental illness (e.g., schizophrenia, bipolar disorder).
- **Smoking-related characteristics (current smokers only):** age of smoking initiation, average cigarettes smoked per day, years smoked, number of quit attempts, smoking frequency, time to the first cigarette of day (within 5 minutes of waking up, 6 to 30 minutes of waking up, 31 to 60 minutes of waking up, and >60 minutes after waking).
- **Outdoor courtyard ban items:** “I support the creation of a smoke free zone in half the [...] courtyard” (partial) and “I support a complete smoking ban at the [...]” (full).

Data Analysis: Descriptive statistics were examined for all participant characteristics. Semi-adjusted logistic regressions, controlling for wave of data collection, examined the association of participant characteristics and support for smoke-free shelter policies. Then, fully-adjusted logistic regressions, controlling for wave of data collection, age, sex, and any additional significant predictors from the semi-adjusted models were examined. Odds ratios (OR) and 95% confidence intervals were reported.

Results

Table 1. Participant Characteristics Overall and By Smoking Status (N=394 Adults Experiencing Homelessness).

Participant Characteristic	All (n=394)	Never Smoker (n=55)	Former Smoker (n=40)	Current Smoker (n=299)	Statistic <p><i>p</i>-value</p>	
Age	43.4 (11.8)	46.0 (12.6)	42.3 (12.3)	43.0 (11.6)	1.65	0.19
Sex	Male: 71.8% (283)	Male: 61.8% (34)	Male: 80.0% (32)	Male: 72.6% (217)	4.13	0.13
Education	<High School 25.4% (100)	<High School 14.6% (8)	<High School 22.5% (9)	<High School 27.8% (83)	6.54	0.16
	High School/GED 44.2% (174)	High School/GED 45.5% (25)	High School/GED 40.0% (16)	High School/GED 44.5% (133)		
	>High School 30.5% (120)	>High School 40.0% (22)	>High School 37.5% (15)	>High School 27.8% (83)		
Last month’s income	No income: 44,.8% (164)	No income: 51.0% (26)	No income: 41.7% (15)	No income: 44.1% (123)	0.99	0.61
Employment status	At least part-time: 9.9% (39)	At least part-time: 9.1% (5)	At least part-time: 7.5% (3)	At least part-time: 10.4% (31)	0.37	0.83
Health insurance status	Any form: 23.6% (93)	Any form: 21.8% (12)	Any form: 17.5% (7)	Any form: 24.7% (74)	1.14	0.57
Veteran status	Yes: 8.1% (32)	Yes: 1.8% (1)	Yes: 2.5% (1)	Yes: 10.0% (30)	6.09	0.04
Lifetime homelessness (in months)	39.1 (49.6)	39.9 (49.3)	44.9 (66.2)	38.2 (47.2)	0.32	0.73
# of discrete homeless episodes	2.9 (3.0)	3.0 (3.4)	3.5 (4.0)	2.9 (2.7)	0.76	0.47
Length of time at shelter (in weeks)	38.7 (55.8)	39.6 (57.6)	39.9 (55.0)	38.4 (55.7)	0.02	0.98
Avg. # of hours per day spent on site	13.3 (5.6)	13.3 (5.7)	12.8 (6.5)	13.4 (5.5)	0.17	0.85
Avg. # of smokers participant was around	Average weekday: 43.3 (38.9)	Average weekday:44.3 (41.1)	Average weekday: 48.7 (41.3)	Average weekday: 42.5 (38.2)	0.46	0.63
	Average weekend: 42.2 (39.2)	Average weekend: 46.3 (42.3)	Average weekend 48.4 (41.7)	Average weekend: 40.7 (38.2)	1.03	0.36
Number of close friends who smoke*	3.3 (4.1)	3.2 (5.4)	1.6 (1.7)	3.6 (3.9)	4.13	0.02
Regular use of other tobacco product	Yes: 21.4% (72)	Yes: 100.0% (50)	Yes: 95.0% (38)	Yes: 76.4% (226)	21.25	<0.01
Diagnosis of alcohol or other drug use disorder	Yes: 22.3% (88)	Yes: 12.7% (7)	Yes: 22.5% (9)	Yes: 24.1% (72)	3.45	0.18
Diagnosis of severe mental illness	Yes: 68.3% (269)	Yes: 45.5% (25)	Yes: 72.5% (29)	Yes: 70.2% (210)	5.65	0.06

Note. * significant difference was found between former smokers and current smokers (*p* < 0.01).



Table 3. Outdoor Courtyard Smoking Ban Items (N=394)

Outdoor Courtyard Smoking Ban Items	% (n)				Statistic	<i>p</i> -value
	All (n=394)	Never Smoker (n=55)	Former Smoker (n=40)	Current Smoker (n=299)		
Partial Smoking Ban					10.68	<0.01
Agree, Strongly Agree	64.0 (252)	76.4 (42)	80.0 (32)	59.5 (178)		
Full Smoking Ban					51.19	<0.01
Agree, Strongly Agree	32.0 (126)	54.6 (30)	70.0 (28)	22.7 (68)		



Table 2. Semi- and Fully-Adjusted Logistic Regression Analyses on the Association of Participant Characteristics Support for a Partial or Full Outdoor Courtyard Smoking Ban in Shelter Setting (N=394 Adults experiencing Homelessness).

	Support of Partial Smoking Ban				Support of Full Smoking Ban			
	Semi Adjusted Models		Full Adjusted Model		Semi Adjusted Models		Full Adjusted Model	
Participant Characteristics	OR	CI _{0.95}	OR	CI _{0.95}	OR	CI _{0.95}	OR	CI _{0.95}
Age	1.021	(1.003, 1.039)	1.024	(1.005, 1.044)	1.016	(0.997, 1.035)	1.016	(0.996, 1.037)
Male	1.157	(0.733, 1.825)	1.062	(0.650, 1.734)	1.017	(0.634, 1.632)	0.978	(0.585, 1.635)
High school/GED (ref: < High school)	1.241	(0.722, 2.134)			0.637	(0.369, 1.099)		
>High school (ref: < High school)	1.246	(0.694, 2.237)			0.655	(0.363, 1.184)		
Had income in last month	1.104	(0.718, 1.696)			1.391	(0.891, 2.172)		
At least part time employed	1.213	(0.599, 2.456)			0.979	(0.477, 2.011)		
Had health insurance	1.382	(0.836, 2.286)			1.064	(0.647, 1.749)		
Non-veteran	2.399	(1.144, 5.031)	2.523	(1.156, 5.506)	1.102	(0.502, 2.418)		
Lifetime homeless (in months, over lifetime)	1.002	(0.997, 1.006)			1.003	(0.999, 1.007)		
# discrete homelessness episodes (over lifetime)	0.975	(0.911, 1.044)			1	(0.932, 1.074)		
Length of time housed at shelter (in weeks)	1.002	(0.998, 1.006)			1.003	(0.999, 1.007)		
Avg. # hours per day spent on site	0.981	(0.945, 1.018)			0.999	(0.962, 1.038)		
# of smokers participant was around (weekday)	0.997	(0.992, 1.002)			1.001	(0.995, 1.006)		
# of smokers around participant was around (weekend)	0.998	(0.993, 1.003)			1.001	(0.996, 1.007)		
# of close friends who smoke	1.018	(0.963, 1.075)			0.963	(0.908, 1.022)		
No substance use disorder by history	1.539	(0.944, 2.508)			0.967	(0.582, 1.607)		
No severe mental illness by history	1.821	(1.143, 2.901)	1.731	(1.061, 2.824)	1.183	(0.753, 1.858)		
Never smoker (ref: Current smoker)	1.915	(0.975, 3.762)	1.805	(0.907, 3.592)	3.611	(1.950, 6.688)	3.902	(2.133, 7.137)
Former smoker (ref: Current smoker)	2.31	(1.014, 5.261)	2.73	(1.191, 6.258)	8.417	(3.854, 18.383)	8.257	(3.951, 17.258)

Note. OR: Odds Ratio; CI: Confidence Interval; Semi-adjusted models adjusted for wave of data collection; full significant-predictor adjusted models adjusted for wave of data collection, age, and sex, while including any additional significant variables from the semi-adjusted models.

Results

- Overall, 64% (n=252) of guests supported the partial ban and 32% (n=126) of guests supported the implementation of a full smoking ban at the shelter.
- Current smokers were less supportive of a partial smoking ban relative to former and never smokers (59.5% vs. 80.0% vs. 76.4%).
- Current smokers were less supportive of a full smoking ban relative to former and never smokers (22.7% vs. 70.0% vs. 54.6%).
- Older participants, non-veterans, former smokers, and those without severe mental illness had significantly greater odds of supporting a partial smoking ban.
- Relative to current smokers, never smokers and former smokers had significantly greater odds of supporting a complete smoking ban. No other participant characteristics predicted full smoking ban support in adjusted analyses.

Conclusions

- Individuals experiencing homelessness smoke cigarettes at high rates and are at high risk for tobacco-related morbidities and premature mortality. Tobacco cessation intervention is often overlooked by those who provide their care.
- The current study supports the acceptability of implementing smoke-free living policies within a homeless shelter, with 60%-80% of guests supporting a partial ban and 23%-70% supporting a full ban, based on smoking status.
- Since even the majority of current smokers supported a partial ban, these policies may enjoy more support than expected by shelter administrators.
- Understanding more about guests who are in favor of a partial smoking ban in a shelter can provide insight into planning an effective administration-led rollout. Both likely supportive and likely non-supportive stakeholders should be thoughtfully involved in implementation planning for maximal acceptance and adoption.
- Non-alienating methods for policy enforcement (e.g., handing out cards with cessation resources, gently redirecting guests) are advisable in these settings.

Funding

Data collection was supported by institutional funding provided by the University of Texas Health Science Center, School of Public Health (to M.S.B.), the University of Texas MD Anderson Cancer Center (to L.R.R.), and the University of Houston (to L.R.R.). Work on this manuscript was funded by the NCI Cancer Center Support Grant P30CA225520 awarded to the Stephenson Cancer Center and Oklahoma Tobacco Settlement Endowment Trust: (092-016-0002; to M.S.B), the National Institute on Minority Health and Health Disparities through the University of Houston’s *HEALTH Center for Addictions Research and Cancer Prevention* under Award Number U54MD015946 (on which L.R.R., M.S.B., and T.A.C. are supported as co-Investigators), the University of Houston through the Summer Undergraduate Research Fellowship (to M.Z.J.) and the Provost’s Undergraduate Research Scholarship (to J.M.), and the Cancer Prevention and Research Institute of Texas through PP210026 (to L.R.R. on which T.A.C. and M.B. are supported).

Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the project supporters. The authors declare that they have no conflicts of interest.

This work was recently published in *Int. J. Environ. Res. Public Health*, 19, 2408.