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Smoking policy change at a homeless shelter: Attitudes and effects

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HIGHLIGHTS

- Sheltered homeless adults support the creation of large outdoor smoke free zones.
- Support for shelter-wide smoking bans is more limited.
- Smoking bans at shelter campuses may reduce carbon monoxide levels in smokers.
- Findings indicate potential consequences of partial and shelter-wide smoking bans.

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ABSTRACT

Homeless adults are exposed to more smokers and smoke in response to environmental tobacco cues more than other socioeconomically disadvantaged groups. Addressing the culture of smoking in homeless shelters through policy initiatives may support cessation and improve health in this vulnerable and understudied population. This study examined support for and expected/actual effects of a smoking ban at a homeless shelter. A 2-wave cross-sectional study with an embedded cohort was conducted in the summer of 2013 two weeks before (wave 1) and two months after (wave 2) a partial outdoor smoking ban was implemented. A total of 394 homeless adults were surveyed (i.e., wave 1 [n = 155]; wave 2 [n = 150]; and 89 additional participants completed both waves). On average, participants were 43 years old, primarily African American (63%), male (72%), and had been homeless for the previous 12 months (median). Most participants were smokers (76%) smoking 12 cigarettes per day on average. Most participants supported the creation of a large smoke-free zone on the shelter campus, but there was less support for a shelter-wide smoking ban. Average cigarettes smoked per day did not differ between study waves. However, participants who completed both study waves experienced a reduction in expired carbon monoxide at wave 2 (W1 = 18.2 vs. W2 = 15.8 parts per million, $p = .02$). Expected effects of the partial ban were similar to actual effects. Partial outdoor smoking bans may be well supported by homeless shelter residents and may have a positive impact on shelter resident health.

1. Introduction

Smoking prevalence has declined to 18.1% among US adults (Centers for Disease Control & Prevention, 2014), yet over 70% of homeless adults are current smokers (e.g., Baggett & Rigotti, 2010; Connor, Cook, Herbert, Neal, & Williams, 2002; Lee et al., 2005). Although homeless smokers and other socioeconomically disadvantaged domiciled smokers may have comparable numbers of quit attempts (Businelle, Cuate, Kesh, Poonawalla, & Kendzor, 2013), homeless smokers may have more difficulty maintaining smoking abstinence partially due to a culture of tobacco use (Baggett, Tobey, & Rigotti, 2013) and permissive shelter policies that result in frequent exposure to smoking. Recent findings indicate that homeless smokers are exposed to substantially more smokers and are more likely to report smoking in response to social goads and other cues than socioeconomically disadvantaged domiciled smokers (Businelle et al., 2013). Thus, outdoor smoking bans at shelters may reduce social cues to smoke and increase the likelihood of successful smoking cessation among homeless individuals (Baggett, Tobey, et al., 2013).

Despite the alarmingly high negative health consequences of smoking in homeless individuals (Baggett, Hwang, et al., 2013;

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Baggett, Tobey, et al., 2013; Hwang, Wilkins, Tjepkema, O'Campo, & Dunn, 2009), few shelters have banned all smoking on their campuses (Apollonio & Malone, 2005; National Coalition for the Homeless, 2007). Furthermore, a survey of transitional shelters in the Los Angeles area indicated that only half of those with ≥200 beds had designated smoke free areas (Arangua, McCarthy, Moskowitz, Gelberg, & Kuo, 2007). Although many shelter administrators may recognize the harmful effects of smoking, their concerns about the potential negative consequences that may accompany shelter-wide smoking bans (e.g., violations of the smoking ban, greater presence of homeless individuals outside the shelter campus) may discourage this type of health promoting policy change. Notwithstanding these concerns, homeless individuals may actually support partial or full smoking bans on shelter grounds. For example, a survey of homeless adults at 26 shelters in Los Angeles found that 46% of respondents supported a "smoking ban in all outdoor common areas" (McCarthy & Dyrness, 2012). In addition, support for smoking bans has been shown to increase following implementation in workplace and medical settings (e.g., Borland, Owen, Hill, & Chapman, 1990; Unrod, Oliver, Heckman, Simmons, & Brandon, 2012), and this may also be the case for homeless shelter residents. However, no research has prospectively examined the impact of shelter smoking bans on the attitudes and behaviors of homeless smokers.

The purpose of the current study was to examine shelter residents' attitudes about partial and full smoking bans at a homeless shelter in Dallas, Texas. We also examined the effects of a partial smoking ban on smoking behavior and expired carbon monoxide (CO), assessed two months after a partial ban was implemented. We tested the following hypotheses: 1) non-smokers would be more supportive of partial and shelter-wide smoking bans than smokers, 2) the number of supporters of the partial and full smoking bans would increase after the partial ban was implemented, and 3) the number of cigarettes smoked per day and CO levels among current smokers would be reduced after implementation of the partial smoking ban.

2. Methods

2.1. Participants

Data collection took place at a large homeless shelter in Dallas, Texas. Homeless individuals were eligible to participate in this study if they spent the previous night at the shelter, earned a score of ≥4 on the Rapid Estimate of Adult Literacy in Medicine—Short Form (REALM-SF; Arozullah et al., 2007) indicating >6th grade English literacy level (i.e., required to complete tablet/laptop assessment items), and were at least 18 years old.

2.2. Procedure

The partial smoking ban was prompted by the results of another study at this shelter, which indicated that smokers who were trying to quit smoking were exposed to approximately 40 smokers each day, partially due to a lack of an outdoor shelter smoke free zone (Businelle et al., 2013, in press). Two separate waves of data collection occurred during the summer of 2013. Wave 1 (W1) data were collected over a one week period, two weeks prior to the implementation of the partial outdoor smoking ban that covered one-half (approximately 6750 ft^2) of the shelter courtyard. At the time of W1 data collection, residents were unaware of plans for the ban implementation. Collection of wave 2 (W2) data was completed over a one week period that began two months after the partial ban was implemented. Participants who completed the W1 assessments were encouraged to complete the W2 assessments, but they were not required to do so. Therefore, some participants completed the W1 assessment or W2 assessment, and a subset of participants completed both W1 and W2 assessments. This study was approved by the Institutional Review Board at the University of Texas School of Public Health.

Flyers describing the study and indicating the dates and times of data collection were posted on the shelter campus. Interested shelter residents approached study staff on the scheduled data collection days. Informed consent was obtained from interested individuals and screening was completed on-site. Those who met the study inclusion criteria used tablet or laptop computers to complete study questionnaires. Questionnaire Development System software (version 2.6.1) was used whereby all questions were read aloud, through earphones. Participants responded to assessment items (using a mouse or touch screen) after the entire question was read. Participants who completed the assessments received a $20 gift card.

2.3. Measures

All participants completed measures that assessed demographic characteristics including age, gender, race/ethnicity, and current period of homelessness. Participants provided a CO sample by breathing into a Vitalograph CO ecolyzer and were asked about their smoking status (never smoker, ex-smoker [smoked at least 100 cigarettes in lifetime, but no longer a smoker], and current smoker). Current smokers were also asked about current cigarettes smoked per day (CPD), number of lifetime quit attempts lasting ≥24 h, and readiness to quit smoking (Abrams et al., 2003). Finally, participants' attitudes about partial ("I support the creation of a smoke free zone in half of the shelter courtyard") and shelter-wide ("I support a complete smoking ban at the shelter") bans were assessed on 5 point scales ranging from strongly disagree to strongly agree (this scale was dichotomized so that those who strongly agreed or agreed were coded as "1" and those who were neutral, disagreed, or strongly disagreed were coded as "0"). To assess expected effects of the bans, all participants were asked "How would you react if smoking was no longer allowed in half the shelter courtyard?", and "How would you react if the shelter no longer allowed smoking anywhere on the shelter campus?" To assess the actual effects of the partial ban, W2 participants were asked "What effect has the shelter ban on smoking in half the courtyard had on you?" (see Table 3 for response options). Finally, participants rated their agreement with the following statements "Banning all smoking at the shelter would improve the health of shelter guests" and "Banning all smoking at the shelter would reduce smoking in guests." Response options ranged from strongly disagree to strongly agree (response options for these items were also dichotomized).

2.4. Statistical analyses

Participant characteristics, attitudes about smoking bans (i.e., partial and full bans), and the effects of a partial smoking ban were descriptively analyzed for the total sample and separately for each data collection wave. Independent sample t-tests and Chi-square tests were conducted to identify differences among participants who completed only one wave of data collection (i.e., either W1 or W2). Paired t-tests and McNemar's tests were conducted to test for within-subjects changes in study variables for those who completed both study waves. Changes in mean CPD and expired CO levels among smokers were analyzed using linear regression (i.e., for comparisons of participants who completed only W1 or W2) and linear multilevel mixed (LMM) modeling analyses (i.e., for comparisons of participants who completed both study waves). Adjusted models controlled for age, gender, race (White vs. non-White), and education. In addition, data were analyzed to determine if post-ban changes in CPD and CO differed by level of smoking (light smoker [≤10 CPD] vs. moderate to heavy smoker [>10 CPD]).