SMOKING PREVALENCE AND DESIRE TO QUIT AMONG EMPLOYEES IN TRANSYLVANIAN FOSTER CARE HOMES

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SUMMARY

Objectives: Few studies have investigated smoking habits among foster care home children and employees, who are at high risk for smoking. Additionally, there are no published studies on the intention to quit smoking among employees of the Romanian Child Protection system, a gap we address in this manuscript.

Methods: A repeated cross-sectional survey was conducted among foster care employees in three Transylvanian counties (Mures, Sibiu, Covasna) in January 2014 to February 2015 (baseline) and September–December 2016 (follow-up). A foster home-based smoking prevention and cessation intervention targeting employees and children was conducted between the two waves. Multivariate logistic regression analysis was conducted to determine associations between socio-demographics, reasons for smoking, tobacco use patterns, reasons for quitting, and tobacco policy attitudes on intention to quit (dependent variable), controlling for participation in the smoking prevention intervention.

Results: 305 employees participated in the baseline (76.4% of females, 23.6% of males) and 304 employees in the follow-up surveys (68.8% of females, 31.2% of males) after the smoking prevention and cessation intervention. At baseline, 34.8% of respondents reported that no one was smoking within the foster care home, which increased to 59.1% at follow-up ($p < 0.001$). Being male and a high level of professional satisfaction were the only correlates of intention to quit in the bivariate models at baseline. Professional satisfaction and a belief that smoking is bad for one's health were the only correlates of intention to quit at follow-up. In multivariable models, professional satisfaction was the only consistent predictor of intention to quit at both time points (OR 5.63, 95% CI 1.71–18.56; OR 4.98, 95% CI 1.43–17.30).

Conclusions: Efforts should be made to promote cessation among foster care employees that includes evidence-based support, along with compliance to policies that prohibit smoking indoors to reinforce cessation efforts.

Key words: smoking, foster care, desire to quit, foster care employees

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INTRODUCTION

Several studies have shown that the vast majority of addicted smokers had their first cigarette before the age of 18 (1). Parental smoking behaviour and social status have a direct impact on early smoking initiation (1, 2). However, only a few studies have investigated smoking habits among foster care home children and employees, who are at high risk for smoking (3–5).

In 2016, a total of 20,156 adolescents in Romania were housed in foster care homes (6). In the only study of adolescent smoking in foster care, the authors found that a high proportion of foster care children (37%) were current smokers (6–8). Cessation would not only be beneficial for the employees, but also for the children in foster care settings (9, 10). To date, there have been no published studies on the intention to quit smoking of foster employees in the Romanian Child Protection system. Therefore, our aim was to assess smoking prevalence and desire to quit among foster care employees, in order to determine the need and demand for smoking cessation support.

MATERIALS AND METHODS

Participants and Procedures

Repeated cross-sectional, questionnaire-based surveys were conducted among foster care employees in January 2014 to February 2015 (baseline) and September–December 2016 (follow-up). The questionnaire included questions regarding their knowledge, attitudes, and behaviours related to smoking and household rules governing tobacco use. A home-based smoking prevention and cessation intervention targeting children and employees was

conducted between the two surveys. Three counties (Mures, Sibiu and Covasna) participated in both waves of the survey and received the intervention prior to the second wave. Five hundred sixty-six employees from 98 foster care homes were invited to participate in the study. Response rates were 53.9% (n = 305) and 53.7% (n = 304) at baseline and follow-up, respectively. Due to ethical requirements, no personal identifying information was collected from the employees.

Measurement

The questionnaire was self-administered under the supervision of trained research staff. The following questions were included in the present study: socio-demographics including employee position (educator, non-educator), age (< 50 and ≥ 50), gender distribution (male, female), professional satisfaction (yes, no); reasons for smoking including the "daily stress" (yes, no), "pleasure" (yes, no), "helps me to relax" (yes, no); tobacco use including current smoking status (daily, occasionally, never), lifetime smoking status (< 5packs ever, ≥ 5 packs or more), number of cigarettes smoked daily (≤ 10 cigarettes per day, ≥ 11cigarettes per day), whether smoking was initiated before or after working in the foster care system (yes, no), and current amount of money spent on cigarettes (≤ $50, ≥ $51); quitting behaviour including reasons for quitting such as "cost" (yes, no), "bad for health" (yes, no), and intention to quit in the next six months (yes, no) as the primary dependent variable. Attitudes towards smoking policies focused on existence of smoking rules in the home, training to prevent tobacco use, educational materials about tobacco use, smoking prevention programmes, participation in a formal smoking prevention training (yes, no), interest in future formal training, using web-based sources to learn more about how to prevent youth tobacco use.

Foster care smoking prevention intervention: an in-person intervention was conducted between the baseline and follow-up surveys. The intervention lasted approximately 4 hours (4 sessions, 50 minutes each). The first two sessions were led by physicians and nurses and included both didactic lectures and interactive workshops, focused on the health effects of smoking. The second two sessions were led by psychologists and focused on the psychosocial factors associated with smoking, such social norms and expectations, skills building to address peer pressure related to smoking, and the financial burden of smoking. These sessions also included a discussion of the risk factors associated with second-hand smoke exposure and emphasized the need to create a policy and social environment that supported a smoke free home. Taking part in the intervention was confirmed by the employees at the follow-up survey.

Furthermore, the Romanian Act on Smoking (Act No. 349) was originally enacted June 6, 2002 and was in effect during the study period. A revision of the legislation was implemented in March 2016 – during the study period – which explicitly banned smoking in foster care homes.

Statistical Analyses

We computed descriptive statistics for all variables in the model at baseline and follow-up. Bivariate analyses using Chi-square tests were s conducted to determine associations between socio-demographics, reasons for smoking, tobacco use patterns, reasons for quitting, and tobacco policy attitudes on intention to quit in the next six months (dependent variable). We controlled for participation in the smoking prevention intervention and assumed that all persons were "exposed" to the amendment of the Romanian Act on Smoking which applied to foster care homes. Due to limited statistical power, we included only those variables with $p \leq 0.10$ in the bivariate analysis in the multivariable logistic regression models. Adjusted odds ratios (AOR) and 95% confidence intervals were also calculated, and a priori statistical significance was established at $p < 0.05$. Analyses were performed using IBM SPSS 22.0.

RESULTS

Employees were predominantly females, 76.4% and 68.8% at baseline and follow-up, respectively (Table 1). 73.1% of them were under 50 years of age at baseline, while at the follow-up 70.7% were under 50 years of age. Employees worked 49.7 hours per week in average. More than 70% of employees had the following positions: educator, night supervisor, and caretaker. The majority of employees (66.2% at baseline and 58.9% at follow-up) found professional satisfaction in the work; 50% of the proportion of respondents who indicated that they had never taken part in a survey assessing smoking habits was 50.0% at baseline and 26.8% at follow-up.

Socio-demographic Characteristics

Intention to quit smoking was associated with professional satisfaction at baseline (OR 5.63, 95% CI 1.71–18.56) and at follow-up (OR 4.98, 95% CI 1.43–17.30). While males were also more likely than females to report an intention to quit smoking at baseline in bivariate models, the relationship was non-significant at baseline when controlling for professional satisfaction. There was no correlation between age or employment position and intention to quit smoking.

Smoking Habits among Personnel

The proportion of smoking was 30.0% at baseline and 37.5% at follow-up. Daily smoking rates were 23.3% at baseline and 23.1% at follow-up, while 6.6% and 15.6% of respondents ($p < 0.001$, 95% CI 3.84–14.22) smoked occasionally, respectively. At baseline, 29.2% of employees declared that they had started smoking before their employment in foster care, 9.2% were already employed when they began smoking and 4.3% refused to answer. At follow-up, these proportions were 30.8%, 7.6%, and 9.9%, respectively. A significant difference was observed regarding the number of cigarettes smoked per day. At baseline, 10.8% of current smokers smoked more than 10 cigarettes per day, while at follow-up, this percentage was 11.2%. More than half of smokers spent $12.50–$50.00 per month for cigarettes. Bivariate analyses did not elucidate any correlations between the intention to quit and smoking habits (Table 2).

Reasons for Smoking

Current smokers reported that pleasure (30.1%) and addiction (21.5%) were the most common reasons for smoking at baseline.

Table 1. *Description of the sample of Romanian foster care personnel regarding demographic characteristics, professional position and satisfaction, smoking habits and reasons for smoking*

Variables	Response options	Baseline (n = 305) n (%)	Follow-up (n = 304) n (%)
Intention to quit smoking in next 6 months	Does not smoke	191 (62.6)	200 (65.8)
	Yes	38 (12.5)	35 (11.5)
	No	55 (18.0)	57 (18.8)
Working position	Educator	146 (47.7)	157 (51.6)
	Non-educator	157 (51.5)	147 (48.4)
Gender	Male	72 (23.6)	95 (31.2)
	Female	233 (76.4)	209 (68.8)
Age	< 50 years	223 (73.1)	215 (70.7)
	≥ 50 years	82 (26.9)	84 (27.6)
Professional satisfaction	Yes	202 (66.2)	179 (58.9)
	No/partially	61 (20.0)	119 (39.1)
Reason for smoking: daily stress	Yes	15 (4.9)	50 (36.2)
	No	80 (29.5)	88 (16.4)
Reason for smoking: pleasure	Yes	28 (9.2)	15 (28.9)
	No	67 (25.2)	123 (40.5)
Reason for smoking: helps me to relax	Yes	14 (4.6)	30 (9.9)
	No	91 (29.8)	108 (35.5)
Smoking	Daily/occasionally	91 (29.9)	114 (38.7)
	Not at all	197 (64.6)	171 (56.3)
Lifetime smoking	< 5 packets*	93 (30.5)	99 (32.6)
	> 5 packets	80 (26.2)	95 (31.3)
Number of cigarettes/day	≤ 10	62 (20.3)	102 (33.6)
	> 10	33 (10.8)	34 (11.2)
Initiated to smoke	Before employment	89 (29.2)	124 (40.8)
	After employment	28 (9.2)	23 (7.6)
Current amount of money spent on cigarettes/month	≤ 50$	67 (22.0)	104 (34.2)
	> 50$	28 (9.1)	33 (10.9)
Reason to quit: costs me too much	Yes	44 (14.5)	42 (13.8)
	No	174 (57.0)	188 (61.8)
Reason to quit: bad for health	Yes	122 (40.0)	127 (41.8)
	No	96 (31.5)	103 (33.9)

*1 packet of cigarettes = 20 cigarettes

At follow-up, fewer respondents cited these reasons. Instead, daily stress (37.3%) and relaxation (22.4%) were reported to be the most important reasons for smoking at follow-up.

Quit Behaviour and Intention

Over 74% of smokers had previously tried to quit at baseline, 77.4% reported ever trying to quit at follow-up (p = 0.639). Over 18% of smokers intended to quit in the next 30 days and 22.6% in the next 6 months at baseline. An additional 44.1% indicated an intention for quitting but not in the next 6 months, 15.1% would not like to quit. In both surveys, less than half of respondents thought that their friends would support them in quitting smoking. Over half of smokers mentioned that smoking is bad for one's health and cited this as the main reason for wanting to quit. There was an association between intention to quit and perceptions that smoking is bad for one's health at follow-up in the multivariable model (OR 3.41, 95% CI 1.08–10.75, p = 0.04) (Table 2).

Before the latest tobacco legislation, 34.8% of participants reported that no one was smoking in the foster care home, which increased to 59.1% at follow-up and post-implementation of the national smoke-free law and after an organized intervention (p < 0.001).

DISCUSSION

Children and adolescents in foster care are more likely to engage in negative lifestyle habits compared to peers outside the child protection system (3, 9). In Romania, the first study report-

Table 2. *Demographic factors, behavioural and attitudinal correlates of intention to quit smoking in the next six months among Romanian foster care personnel*

Categories	Response options	Bivariate analyses				Multivariate analyses[a]			
		Baseline (n = 93)		Follow-up (n = 92)		Baseline (n = 93)		Follow-up (n = 92)	
		AOR (95% CI)	p-value	OR (95% CI)	p-value	AOR (95% CI)	p-value	AOR (95% CI)	p-value
Working position	Educator/non-educator	0.82 (0.34–1.93)	0.654	2.03 (0.52–0.72)	0.103	n/a		2.90 (0.95–8.86)	0.06
Gender	Male/female	**2.72 (1.07–6.92)**	**0.035**	0.55 (0.2–1.39)	0.207	**2.64 (0.98–7.11)**	**0.06**	n/a	
Age	< 50/> 50	1.08 (0.43–2.72)	0.860	1.67 (0.65–4.48)	0.306	n/a		n/a	
Professional satisfaction	Yes/no, partially	**5.66 (1.76–18.22)**	**0.004**	**7.42 (2.64–20.80)**	**< 0.001**	**5.63 (1.71–18.56)**	**0.004**	**4.98 (1.43–17.30)**	**0.01**
Reason for smoking: daily stress	Yes/no	0.95 (0.31–2.95)	0.941	1.86 (0.76–4.54)	0.172	n/a		n/a	
Reason for smoking: pleasure	Yes/no	1.35 (0.54–3.37)	0.518	0.80 (0.24–2.59)	0.715	n/a		n/a	
Reason for smoking: helps me to relax	Yes/no	0.890 (0.26–2.96)	0.850	0.85 (0.31–2.30)	0.754	n/a		n/a	
Daily smoking	Daily or occasionally/not at all	0.56 (0.22–1.44)	0.999	0.15 (0.01–12.25)	0.999	n/a		n/a	
Smoking history	< 5/> 5 packets	0.56 (0.22–1.44)	0.236	0.39 (0.12–1.21)	0.106	n/a		0.61 (0.15–2.47)	0.49
Number of cigarettes/day	≤ 10/> 10	0.86 (0.30–2.47)	0.783	0.46 (0.18–1.16)	0.101	n/a		0.37 (0.12–1.21)	0.10
Initiated to smoke	Before employment/after employment	0.65 (0.19–2.20)	0.492	0.59 (0.11–3.11)	0.536	n/a		n/a	
Current amount of money spent on cigarettes/month	≤ 50/> 50$	1.31 (0.52–3.29)	0.168	0.53 (0.21–1.35)	0.187	n/a		n/a	
Reason for quit: costs me too much	Yes/no	1.31 (0.52–3.29)	0.554	0.51 (0.18–1.39)	0.193	n/a		n/a	
Reason for quit: it is bad for health	Yes/no	1.34 (0.58–3.10)	0.483	**4.00 (1.62–9.83)**	**0.003**	n/a		**3.41 (1.08–10.75)**	**0.04**

[a]Only variables approaching statistical significance (p ≤ 0.10) in the bivariate analysis were included in the multivariable model to ensure adequate statistical power.

ing the prevalence and correlates of smoking behaviour among foster care home residents showed that living with smoking foster mother or father is associated with increased odds of experimentation and past-30 day use of tobacco cigarettes, respectively (7, 8). Thus, smoking cessation among foster care employees could not only have a direct benefit for the adults, but also serve as an indirect prevention strategy for foster care children in terms of reducing smoking initiation and exposure to second-hand smoke among youth (11, 12).

In our study, the prevalence of current smoking among foster care employees is higher than among the general Romanian adult population. The overall proportion of smokers increased from baseline to follow-up. Although foster care employees have not achieved cessation, there is a trend towards reducing the amount smoked, which could reflect the influence of the Romanian national clean air law or the effect of the organized Foster Care Smoking Prevention Intervention. While complete abstinence is the goal in maximizing the health benefits of quitting, reducing frequency of smoking may also have benefits for the parents and the children.

Three out of four employees have previously tried to quit smoking, 85% indicated that they have an interest in quitting and 40% expressed an interest in quitting in the next six months. Health effects were indicated as the primary reason for intention to quit, but cost was also an important factor. These reasons should be included in any cessation efforts targeting foster care employees.

In a study by Foley et al. (6), the authors reported an absolute increase in 4 of 5 smoke free measures in Romanian foster care homes after the Romanian national clean air law was amended in March 2016 (Act No. 349/2002) (6). The law is intended to reduce second-hand smoke exposure by making it illegal to smoke in enclosed public places and outdoor playground, with a special mention of the foster care system. Improvements in smoke free policies in Romanian foster care following the legislation included bans on non-cigarette tobacco products, non-smoking on premises for adults and for children, and no smoking in cars to transport children. This seems to be corroborated by findings from this study; respondents reported a significant increase in not allowing smoking inside the home, from 34.8% at baseline to 59.1% at follow-up (6). While this reflects a significant improvement in promoting a smoke free home, it remains far below 100% (6). In order to be in full compliance with the law, Romanian foster care homes are mandated to be completely smoke free indoors (6).

CONCLUSIONS

Current smoking (when combining daily and occasional users) exceeds the national average, thus we did not expect and realized a significant number of sudden quitting after the intervention, however, it is a valuable positive outcome that 85% of respondents expressed an interest in quitting and 40% reported an intention to quit in the next six months. Efforts should be made to promote cessation among foster care employees that includes evidence-based support, along with compliance of policies that prohibit smoking indoors to reinforce cessation efforts. Together, these evidence-based smoking cessation strategies would not only provide health benefits for the employees, but also for children in foster care who smoke at higher rates than the general adolescent population and who are exposed to second-hand smoke in the homes.

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Conflict of Interests

None declared

Adherence to Ethical Standards

All consent documents and research protocols/study procedures were approved by the Institutional Review Board of University of Medicine and Pharmacy of Targu Mures.

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