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Smoking behavior and attitudes of patient's relatives in the pediatric emergency rooms- a multi-center study

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Abstract

It was aimed to investigate the smoking behavior and attitudes of the relatives of the children in the ERs to determine whether current experience had any impact on the desire to quit. This study conducted with 300 patient relatives who applied to the pediatric ER of three hospitals in different cities between June 2019 and June 2020. Apart from the demographic data, a questionnaire consists of 18 questions were applied regarding participants' past and current ER experiences and smoking behaviors. All data were analyzed using SPSS version 20.0 (IBM, USA) software package. It was determined that many (47.3%) spent more than 4 hours in the vicinity of ERs. Most of the individuals (58.0%) had waited 3 or more times in the ER previously. Besides, 59.3% had the idea of quitting smoking as they saw the patients in the ER, and while in the hospital, 44.0% wanted to have smoking cessation treatment. The average number of cigarettes smoked per hour in daily life was 0.61 ± 0.52 (excluding sleep time), but during the waiting period, this figures went up considerably to 4.32 ± 5.28 / hour ($p < 0.001$). The rate of those who consumed more than 20 cigarettes was higher in those who waited 5 or more times in the ERs previously ($p = 0.025$). Patient relatives who were interviewed in the pediatric ER smoked more frequently. There is a need for smoking cessation clinics that can be integrated into the ER.

Keywords: Pediatric emergency medicine, smoking cessation, relatives

Introduction

Emergency room (ER) deals with urgent problems that cause acute stress for patients and accompanying parties like their friends and relatives [1]. This stress could even be experienced even more severely among the family of children who needs emergency care. Smoking is a frequent and unhealthy behavior in such stressful situations [2].

More than six million people die annually due to smoking related conditions such as cardiovascular, respiratory diseases and various cancers [3]. According to the data from Global Adult Tobacco Survey in 2016, 44.1% of the males and 19.2% of the females were smokers [4]. People who need emergency care from all segments of the community apply to the ERs and they often accompanied or visited by a number of friends and relatives. According to the 2013 data 130 million emergency cases apply to ERs in the United States and for Turkey this number is around 100 million [5,6]. They usually hang around in the vicinity of ERs with nothing to do except worrying and waiting.

The fight against smoking is a medical priority in many health

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systems. Smoking cessation counseling could be cheap and successful preventive service in the ER. The American College of Emergency Physicians and the Society of Academic Emergency Medicine have recommendations for smoking cessation counseling in the ER [7,8].

The smoking rate of adults who bring their children to the pediatric ER is higher than the general population and their children suffer from second-hand smoke exposure related diseases such as bronchiolitis, asthma, pneumonia and ear infections [9-11]. However, the thought and motivation of quitting smoking among these parents is also higher because of the desire to help their children by not exposing them to the smoke and therefore improve their well being [10,12].

In this study, it was aimed to investigate the smoking behavior and attitudes of the relatives of the children in the ERs, to determine whether current experience had any impact on the desire to quit, raising awareness and possibly, providing guidance for the prospects of implementing smoking cessation services in the vicinity of pediatric ERs.

Materials and Methods

This is a cross-sectional study, conducted on patient relatives who applied to the pediatric ER of three hospitals in different cities after the ethical approval which was issued by the Recep Tayyip Erdoğan University Faculty of Medicine non-interventional clinical research ethics committee with the number 2019/186. The universe of this study was consists of 99124 patients who applied to Rize Recep Tayyip Erdoğan University Faculty of Medicine pediatric ER, 96711 patients who applied to pediatric ER of Giresun University Faculty of Medicine and 197240 patients who applied to pediatric ER of Samsun Education and Research Hospital between June 2019 and June 2020.

Among these people, 7861 people determined by simple random sampling (one in every 50 patients), 5914 people who are 18 and older were asked if they smoke and 1971 persons were affirmative. The purpose and form of the study was clearly explained to them and 408 people agreed to participate in the study.

Apart from the demographic data, a questionnaire consists of 18 questions were applied regarding participants' past and current ER experiences and smoking behaviors. One question was open ended and the other questions were in Likert formations (3 in 2, 8 in 3 and 6 in 4 likert). It took an average of 20 minutes to complete. Participants were asked to fill in the questionnaire themselves; the authors of the study were interviewers for illiterate people. 300 people who answered the questions completely were included in the study.

All data were analyzed using SPSS version 20.0 (IBM, USA) software package. Descriptive statistics for continuous variables are presented with mean, standard deviation, median and 25-75 percentile, categorical variables are presented as numbers and percentages. The suitability of variables to normal distribution was examined by visual (histogram and probability graphs) and analytical methods (Kolmogorov-Smirnov / Shapiro-Wilk tests). Nominal variables were compared with each other using Pearson Chi Square and Fisher's Exact Tests. Since the amount of cigarettes

consumed within one hour did not show a normal distribution, it was analyzed with the Mann-Whitney U test and presented with a box plot. Situations where the P-value was below 0.05 were evaluated as statistically significant results.

Results

Males were 64.7% (n = 194), females were 35.3% (n = 106) and majority of the participants were married (79.7%; n = 239). Accompanying parties were mostly first degree relatives (75.3%; n = 226). It was determined that many (47.3%) spent more than 4 hours in the vicinity of ERs. Most of the individuals (58.0%) had waited 3 or more times in the ER previously. Besides, 59.3% had the idea of quitting smoking as they saw the patients in the ER, and while in the hospital, 44.0% wanted to have smoking cessation treatment. The average number of cigarettes smoked per hour in daily life was 0.61 ± 0.52 (excluding sleep time), but during the waiting period, this figures went up considerably to 4.32 ± 5.28 /hour ($p < 0.001$). (Figure 1)

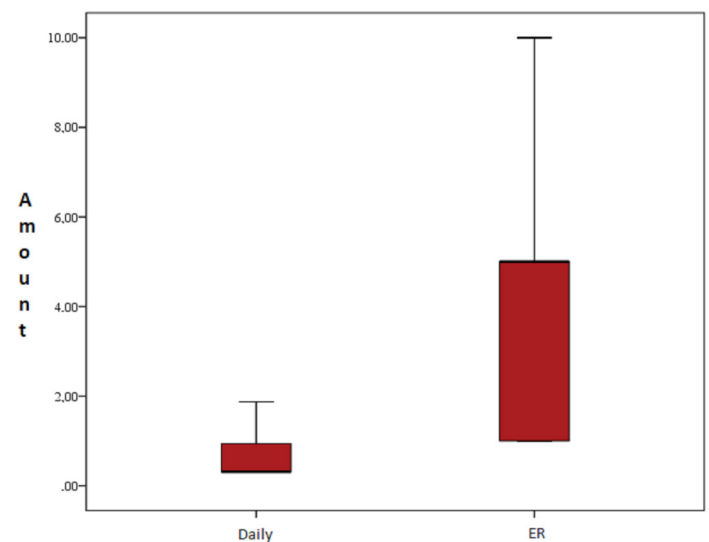


Figure 1. The amount of cigarettes per hour daily and in the ER

When the relationship between the smoking behaviors (in daily life and in the hospitals) and the demographic variables are examined; There was no significant relationship between age, marital status, relationship to the patient and the preferences while waiting in the hospital, and the amount of cigarettes smoked per day in daily life. (Table 1) Consumption of more than 20 cigarettes in daily life was significantly higher in women than men (16.0% versus 9.3%) ($p = 0.015$). However, the rate of men smoked more than 20 cigarettes in the vicinity of the ER was higher compared to women (18.6% versus 0.04%) ($p = 0.001$).

The rate of those who consumed more than 20 cigarettes was higher in those who waited 5 or more times in the ERs previously ($p = 0.025$). The rate of those who smoked more than 20 cigarettes while waiting in the ER was higher in those who waited for more than 4 hours in the ER and in those who smoked more than 20 a day in daily life ($p = 0.001$ and $p = 0.006$ respectively). During waiting in the ERs, the rate of accepting cigarette offer from the 3rd party was found to be significantly higher in those who smoked more than one pack a day ($p < 0.001$). 76.3% (n = 229) of the participants thought that smoking around the emergency department reduces their stress. (Table 2)

Table 1. Comparisons of the number of cigarettes smoked daily with some parameters

		How many cigarettes do you smoke daily?						p
		0-10		11-20		More than 20		
		n	%	n	%	n	%	
Gender	Male	148	76.3	28	14.4	18	9.3	0.015
	Female	64	60.4	25	23.6	17	16.0	
Age (years)*		37	30-41	37	32-45	33	28-42	0.060
Marital status	Married	167	69.9	44	18.4	28	11.7	0.789
	Single	45	73.8	9	14.8	7	11.5	
Relationship	First degree	158	69.9	44	19.5	24	10.6	0.270
	2. and 3. degree	54	73.0	9	12.2	11	14.9	
How do you travel to the ER for your patient?	Private car	132	69.8	33	17.5	24	12.7	0.637
	Public transport	58	72.5	16	20.0	6	7.5	
	Ambulance	9	60.0	3	20.0	3	20.0	
	Others	13	81.3	1	6.3	2	12.5	
Where do you stay to sleep while waiting?	I do not	140	70.4	34	17.1	25	12.6	0.248
	Hotel	28	59.6	12	25.5	7	14.9	
	In friends and relatives	9	90.0	0	.0	1	10.0	
	Stay in the hospital	35	79.5	7	15.9	2	4.5	
Where do you eat while waiting?	I do not	78	63.9	27	22.1	17	13.9	0.102
	Canteen	106	75.7	19	13.6	15	10.7	
	Hospital food	15	62.5	7	29.2	2	8.3	
	In friends and relatives	13	92.9	0	.0	1	7.1	
Do you request your expenses from the patient or their relatives?	Yes	5	50.0	2	20.0	3	30.0	0.166
	Partially	14	60.9	7	30.4	2	8.7	
	No	193	72.3	44	16.5	30	11.2	

* It is presented as median instead of 'n' and 25-75 percentile instead of '%'.

Table 2. Comparisons of the number of cigarettes smoked around the emergency room with some parameters.

		The amount of cigarettes/day around the ER						p
		0-10		11-20		More than 20		
		n	%	n	%	n	%	
Gender	Male	135	69.6	23	11.8	36	18.6	0.001
	Female	92	86.8	10	0.09	4	0.04	
How many times did you wait in the ER before?	0-2	101	80.2	7	5.6	18	14.3	0.025
	3-4	78	74.3	18	17.1	9	8.6	
	5 or more	48	69.6	8	11.6	13	18.8	
How many hours have you waited today?	0-2	92	86.0	6	5.6	9	8.4	0.001
	2-4	31	60.8	13	25.5	7	13.7	
	More than 4 hrs	104	73.2	14	9.9	24	16.9	
How many cigarettes do you smoke in your daily life?	0-10	171	80.7	15	7.1	26	12.3	0.006
	11-20	36	67.9	10	18.9	7	13.2	
	More than 20	20	57.1	8	22.9	7	20.0	
How do you think smoking helps you while waiting? (check as many as you like)	Reduces my stress	181	79.0	17	7.4	31	13.5	<0.001
	Reduces my sorrow	21	61.8	9	26.5	4	11.8	
	Makes me feel fit	18	90.0	1	5.0	1	5.0	
	I am addicted to it	5	62.5	2	25.0	1	12.5	
	Psychological	1	12.5	4	50.0	3	37.5	
	I desire smoking	1	100.0	0	.0	0	.0	
Do you smoke another brand of cigarettes offered by someone else while waiting in the ER?	Yes	60	64.5	10	10.8	23	24.7	<0.001
	No	167	80.7	23	11.1	17	8.2	
Do you have trouble not smoking in the ER while indoors?	Yes	77	77.0	12	12.0	11	11.0	0.578
	Partially	65	80.2	7	8.6	9	11.1	
	No	85	71.4	14	11.8	20	16.8	
Do you have trouble not smoking in daily life while indoors?	Yes	87	74.4	9	7.7	21	17.9	0.027
	Partially	62	86.1	6	8.3	4	5.6	
	No	78	70.3	18	16.2	15	13.5	
Do you get the idea to stop smoking as you see the patients in the ER?	Yes	135	75.8	19	10.7	24	13.5	0.975
	No	92	75.4	14	11.5	16	13.1	
Would you like to receive smoking cessation treatment while in the hospital?	Yes	107	81.1	10	7.6	15	11.4	0.128
	No	120	71.4	23	13.7	25	14.9	
Do you think the disease of your patient in the ER is related to smoking?	Yes	34	69.4	3	6.1	12	24.5	0.112
	Partially	57	77.0	10	13.5	7	9.5	
	No	136	76.8	20	11.3	21	11.9	
How do you travel to ER?	Private car	146	77.2	19	10.1	24	12.7	0.021
	Public transport	64	80.0	8	10.0	8	10.0	
	Ambulance	11	73.3	1	6.7	3	20.0	
	Others	6	37.5	5	31.3	5	31.3	
Where do you stay to sleep while waiting?	I do not	158	79.4	19	9.5	22	11.1	0.162
	Hotel	31	66.0	8	17.0	8	17.0	
	In friends and relatives	9	90.0	1	10.0	0	.0	
	Stay in the hospital	29	65.9	5	11.4	10	22.7	
Do you request your expenses from the patient or their relatives?	Yes	7	70.0	3	30.0	0	.0	0.238
	Partially	19	82.6	2	8.7	2	8.7	
	No	201	75.3	28	10.5	38	14.2	

Discussion

This study is one of the rare studies on smoking and attitude of relatives of the patients in the pediatric ER. It is a project that aims to raise awareness and facilitate development of new health policies in regards to fight tobacco.

ERs are most often used diagnosis and treatment units in Turkey. Due to direct accessibility regardless of time, ERs may serve non-emergency cases as well as emergency cases [13,14]. In health institutions where circulation is so high, it may be a worthwhile to provide smoking cessation counseling with voluntary staff.

Although the connection between smoking and the gender in the emergency waiting rooms has not been previously determined [15,16], it was observed in our study that the rate of smoking more than one pack in the ER was higher in men. The participants in our study are under acute stress due to the health problems of their children. According to our data, being close relatives to the patient and increase in visits and duration of waiting experience in the ERs increase the frequency of smoking. Even hourly quantity of cigarettes smoked has increased almost seven times and the first time that data may have been detected in the literature. Being a parent in the emergency room causes the stress and most of the participants think that smoking reduces their stress.

Parents can make an effort to avoid smoking if they can learn or accept that their child's complaints are increased or directly caused by cigarettes. Boudreaux et al. reported that the smoking cessation rates double among the patients who applied to the ER if the patient believed that the problem was caused by a cigarette-related disease [17]. It is possible to observe that the high motivation creates successful results in quitting smoking in adult ERs as well [18]. The finding that most of our participants develop the idea of quitting as they see sick children is compatible with the literature.

Although the quitting rates of Mahabee-Gittens et al. were lower than expected in the study performed in the pediatric ER, the intervention was found to be effective in increasing awareness, quitting attempts and preparations to quit [9]. In another study, adult patient relatives thought the smoking cessation interventions in the pediatric ER are useful and feasible [19]. It is in line with the literature that most of our participants wanted to receive smoking cessation treatment even in the ER. Although the relatives increased their number of cigarettes under acute stress, they also showed willingness to solutions and suggestions. This is an example of parental sensitivity.

The U.S. Public Health Service recommends that the smoking cessation guidelines should be offered to patients wishing to quit especially by doctors and nurses but, the best approach to achieve this goal in the ER is unknown [20]. However, it is known that 'teachable moments' can be created to apply 5As (Ask, Advise, Assess, Assist, Arrange) and 5Rs (Relevance, Risks, Rewards, Roadblocks, Repeated) counseling and motivational approaches to people who need help with smoking cessation [21, 22]. This

study may guide next studies for the methodology that can be applied in a pediatric ER.

Although this study had a multicenter design, the fact that the number of participants is not high enough due to acute stress factors can be considered as a limitation.

Conclusion

It was understood that patient relatives who were interviewed in the pediatric ER smoked more frequently. Parents can be trained that smoking can harm themselves and their children, and encouraged to take steps towards smoking cessation treatment in that spot. It is clear that there is a need for smoking cessation clinics that can be integrated into the ER.

Conflict of interests

The authors declare that they have no competing interest.

Financial Disclosure

All authors declare no financial support.

Ethical approval

For the study, written permission and ethical approval were taken from Recep Tayyip Erdoğan University Faculty of Medicine non-interventional clinical research ethics committee with the number 2019/186.

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