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PARENTAL RISK PERCEPTIONS OF CHILD EXPOSURE TO SECOND-HAND TOBACCO SMOKE IN AL-AHSAA

Medicine

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ABSTRACT

BACKGROUND: Parental smoking has been linked with increased rates of sudden infant death syndrome, otitis media, chronic middle ear effusion, acute respiratory infections, asthma, and decreased lung growth.

OBJECTIVES: To analyze the perception of parents regarding passive smoking . To understand if awareness has any effect on their smoking behavior.

METHODS: A cross-sectional study was conducted In 2018 from the community of Al- Ahsa, Saudi Arabia. A total of 429 participants participated in the study. Data was analyzed in SPSS version 22.

RESULTS: Showed that 25% of children exposed to second hand smoking. Also, low level of awareness about the risks of second-hand smoking. P- value <0.05.

CONCLUSION: Children are exposed to environmental tobacco smoke, which was made evident by the data. As well, a lack of knowledge regarding second-hand smoking and the adverse effects on their children's health.

KEYWORDS

passive smoking, parents, risk, Al-Ahsa

INTRODUCTION

Smoking is a leading preventable cause of death in developed countries [1]. Tobacco smoke, consisting of more than 4000 components, with more than 40 carcinogens [2]. Second-hand smoke (SHS) means the admixture of sidestream smoke given by a burning tobacco product and mainstream smoke exhaled by a smoker [3]. Parental smoking has been linked to increased rates of sudden infant death syndrome, otitis media, chronic middle ear effusion, acute respiratory infections, asthma, and decreased lung growth [4]. There is no safe level for Second-hand smoke exposure, as even low levels are associated with harmful effects [5]. Second-hand smoke becomes farther harmful indoors, as polluted air more carcinogens than the smoke that goes through the cigarette filter, inhaled by the active smoker. WHO estimates that 40% of children worldwide are exposed to tobacco smoke in their homes [6], in spite of the accumulated evidence of harm to children from tobacco smoke exposure [7]. Kingdom of Saudi Arabia agreed with and became a part of the Framework Convention on Tobacco Control (FCTC). It has applied restrictions on smoking in enclosed places. The restrictions include smoke-free hospitals, educational facilities, and governmental facilities [8]. Despite that, in KSA, the prevalence of smoking among adult ranges from 11.6-52.3% [9]. Moreover, Previous studies in the region showed low awareness about policies related to the framework convention [10]. This emphasizes the importance of raising awareness.

Several studies report parental awareness about second-hand smoking; however, even among those who know about its harmful effects, there are parents who expose their children to SHS at home. [11] On the other hand, a survey in 1995 indicated that educating parents about health risks of SHS would considerably decrease children's exposure. [12] Thus. Parents should know that any exposure should be considered a risk factor for several diseases. Smoking control measures that enhance smoking-free lifestyle among children must be applied and encouraged.

Regarding child exposure to SHS and lack of knowledge on the effect of Second-Hand Tobacco Smoke, studies reported that it is related to parents of low socioeconomic classes, besides public awareness strategies by means of educational programs in the media may not pass to people with low educational level. [13]

Culture is a factor that can influence smoking behavior. In a study conducted in Tehran, fathers were the sole habitual smokers in most families. [14] In another study, employment status was associated with SHS. [15]

Although smoking practices in different age groups have been considered in quite a few research papers from our region, no research has published the issue of parental awareness about the adverse consequences of exposure to SHS in children and the effect of this insight on smoking behavior.

The aim of this cross-sectional study to analyze the perception of parents regarding the effect of passive smoking on the health of their children, and to see if risk awareness has any effect on their smoking behavior.

METHODS:

Study Design A cross-sectional study was conducted from the community of Al-Ahsa, Eastern region, Saudi Arabia.

Sample size: Sample size calculation was determined using web survey software Raosoft.com [16] based on the population of parents in al-ahssa with 5% margin error and 95% confidence. the calculated sample size was 377.

Study Area and Population: This study was conducted in July 2018 among parents in al-Ahssa region, who have young children less than 12 years.

Questionnaire: An informed consent was obtained from each participant before entering the study. The data was collected using a questionnaire, attached in (Appendix1). The Questionnaire was first developed and validated by a group of researches in 2015 [17] .The form has been finalized, and adjusted and reformulated to be applied in our setting.

The Questionnaire has 21 questions. These questions are grouped into 3 sections. Section 1 includes general demographic information of the participants. Section 2 consists of questions regarding smoking behavior and attitude. Section 3 consist of questions assessing the parents' knowledge of second-hand smoking in their children.

Statistical Analysis: The data coded, entered and analyzed in Statistical Package for Social Science Software (SPSS) version 22. Descriptive statistics (frequency, percentages ,and means) will be run to analyze the distribution of the socio-demographic factors like age, sex, gender and level of education. Independent t-test and one-way ANOVA used to test the relationship between socio-demographic factors and the smoking behavior and the parent's knowledge of second-hand smoking in their children. P – value of <0.05 was considered significant.

RESULT:

The results suggest that 429 individuals participated in the study. Table 1 presents the demographics of the participants which shows that 49% of the participants were females and 51% were males, 7% of them were less 25 years old, 21% were between 26 and 35 years old, 50% were between 36 and 45 years old and the rest were more than 45. Regarding the marital status, 98% were married and 17% had 1 child, 24% had 2 children and about 59% had more than 2 children. When the parents were asked about their level of education and work status, more than 60% had attended the university/college and approximately 65% of them were employed and 50% of them had family income more than 10000 SAR per month.

Table 2 states the smoking behavior of the studied parents. 72% of them were non-smokers and 28% were smokers and past smokers. When they were asked about the number of cigarettes they smoke a day, 57% smoke less than 1 pack per day, 29% smoke 1pack per day and 13% smoke 2 or more packs per day. Also, the parents were asked about the area they smoke in usually, 78% smoke away from family members, 17% at home and 3% at the car. When they were asked if their children were exposed to second-hand smoking, 25 % answered yes.

Table 3 presented association of sociodemographic variables with SHS questions. Out of 13 questions, age was significantly associated with smoking (p – value: 0.00), awareness of susceptibility to otitis media (p – value: 0.03), eye disease (p – value: 0.00), upper respiratory infection (p – value: 0.01), coronary artery disease (p – value: 0.003) and poor lung development (p – value: 0.00). Gender also was significantly associated with smoking (p – value: 0.00), awareness of susceptibility to asthma attacks (p – value: 0.01),upper respiratory infection (p – value: 0.00) and poor lung development (p – value: 0.00). Regarding marital status, it was significantly associated with awareness of susceptibility to asthma attacks (p – value: 0.02), otitis media (p – value: 0.00) and coronary artery disease (p – value: 0.03). The number of children was significantly associated with smoking (p – value: 0.00), smoking in the house (p – value: 0.02), awareness of susceptibility to eye disease (p – value: 0.00), upper respiratory infection (p – value: 0.00) and poor lung development (p – value: 0.01). furthermore, the level of education was significantly associated with smoking (p – value: 0.00), awareness of susceptibility to asthma attacks (p – value: 0.02) and eye disease (p – value: 0.00) and the employment was significantly associated with smoking (p – value: 0.00) and smoking in the house (p – value: 0.04).

Table 4 showed the knowledge of these parents about the second-hand smoking. About 10% reported that children who exposed to second-hand smoking are more susceptible to get upper respiratory infections and less than 12% knew that children who exposed to second-hand smoking are more susceptible to have otitis media, eye diseases like cataract, coronary artery diseases and poor lung development. However, only 4% reported that children who exposed to second-hand smoking are more susceptible to asthma exacerbations.

Table 1. Demographics

Demographics	N	Percentage
Age groups:	29	7%
< 25 years	90	21%
26 – 35 years	216	50%
36 – 45 years	94	22%
>45 years		
Number of children	74	17%
1	104	24%
2	251	59%
>2		
Gender:	219	51%
Male	210	49%
Female		
Nationality:	429	100%
Saudi		
Marital Status:	421	98%
Married	4	1%
Divorced	4	1%
Widow		
Education:	12	3%
Primary school	26	6%
Intermediate	96	22%
Secondary	269	63%
Bachelors	21	5%
Masters	5	1%
Doctorate		
Family income:	92	21%
< 5000 SAR	121	28%
5000 – 10000 SAR	216	50%
>10000 SAR		
Work status:	278	65%
Employment	151	35%
Unemployment		

Table 2. Smoking behavior

	N	Percentage
Smoking		
No smoking	310	72%
Regular	77	18%
Occasional	21	5%
Past smoker	21	5%
How many cigarettes per day?		
< 1 pack per day	68	57%
1 pack per day	35	29%
2 packs per day	12	10%
>2	4	3%
Where do you smoke?		
At home	20	17%
In car	3	3%
Away from family members	96	78%
Do your children expose to second-hand smoking?		
Yes	106	25%
No	323	75%

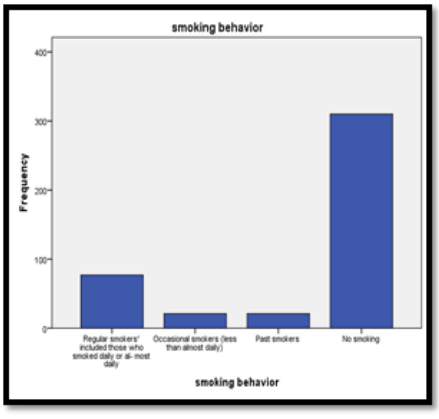

Figure 1.

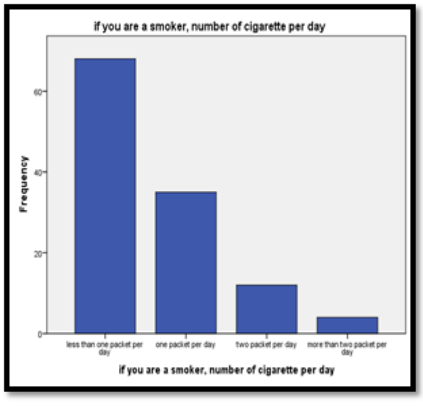

Figure 2.

Table 3. Association between sociodemographic variables with SHS questions.

Statements	value	P – value
Association with Age		
Parenteral smoking	50.98	0.00
In your opinion, children who exposed to second-hand smoking, are more susceptible to get otitis media	13.96	0.03
In your opinion, children who exposed to second-hand smoking, are more susceptible to get eye disease like cataract	19.44	0.00
In your opinion, children who exposed to second-hand smoking, are more susceptible to get upper respiratory infection	16.21	0.01
In your opinion, children who exposed to second-hand smoking, are more susceptible to get coronary artery disease	20.04	0.003
In your opinion, children who exposed to second-hand smoking, are more susceptible to get poor lung development?	27.55	0.00
Association with Gender		
Parenteral smoking	125	0.00
In your opinion, second-hand smoking, can exacerbate asthma attacks on your children	8.24	0.01
In your opinion, children who exposed to second-hand smoking, are more susceptible to get upper respiratory infection	11.93	0.00
In your opinion, children who exposed to second-hand smoking, are more susceptible to get poor lung development?	12.95	0.00
Association with marital status		
In your opinion, second-hand smoking, can exacerbate asthma attacks on your children	11.12	0.02
In your opinion, children who exposed to second-hand smoking, are more susceptible to get otitis media	19.63	0.00
In your opinion, children who exposed to second-hand smoking, are more susceptible to get coronary artery disease	10.40	0.03
Association with number of children		
Parenteral smoking	30.23	0.00
Smoking at home	17.10	0.02
In your opinion, children who exposed to second-hand smoking, are more susceptible to get eye disease like cataract	13.53	0.00
In your opinion, children who exposed to second-hand smoking, are more susceptible to get upper respiratory infection	19.76	0.00
In your opinion, children who exposed to second-hand smoking, are more susceptible to get poor lung development?	12.11	0.01
Association with education		
Parenteral smoking	31.28	0.00
In your opinion, second-hand smoking, can exacerbate asthma attacks on your children	21.20	0.02
In your opinion, children who exposed to second-hand smoking, are more susceptible to get eye disease like cataract	27.25	0.00
Association with employment		
Parenteral smoking	14.62	0.00
Smoking at home	11.61	0.04

Table 4. The awareness of second-hand smoking risks

Statements	N (%)
In your opinion, children who exposed to second-hand smoking, are more susceptible to get upper respiratory infection (cough and colds)?	
Yes	43(10%)
No	140(33%)
I don't know	246(57%)
In your opinion, second-hand smoking, can exacerbate asthma attacks on your children?	
Yes	18(4%)
No	91(21%)
I don't know	320(75%)
In your opinion, children who exposed to second-hand smoking, are more susceptible to get otitis media?	
Yes	46(11%)
No	239(56%)
I don't know	144(37%)
In your opinion, children who exposed to second-hand smoking, are more susceptible to get eye disease like cataract?	
Yes	47(11%)
No	258(60%)
I don't know	124(29%)
In your opinion, children who exposed to second-hand smoking, are more susceptible to get coronary artery disease?	
Yes	48(11%)
No	204(48%)
I don't know	177(41%)
In your opinion, children who exposed to second-hand smoking, are more susceptible to get poor lung development (means lung never grow to the full potential)?	
Yes	45(10%)
No	204(48%)
I don't know	180(42%)

DISCUSSION:

Second-hand smoke is the secondary exposure to tobacco products by non-smokers. The concern regarding the effect of SHS on children is higher because their bodies are still developing, especially the immature respiratory system. [17]

The prevalence of children's exposure to SHS in Al-ahsaa, Saudi Arabia, was 25%. A similar high prevalence of child exposure SHS was also reported in a recent study conducted in Macao. [18] in which the prevalence of SHS exposure was 41.3%.

The results showed a low level of awareness about of second-hand smoking risks. It was unexpected that only 4% knew that second-hand smoking, can exacerbate asthma attacks and 75% said they do not know. Moreover, only from 10% to 11% knew that the exposed child at higher risk of URTI, otitis media, cataract, coronary artery diseases and poor lung development.

Nearly the same results were observed in a study conducted in Brazil. [19], which reported a lack of knowledge regarding SHS and the adverse effects that smoking can have on children's health. Additionally, there was no significant relationship between risk awareness and exposure to SHS. The level of children's exposure is high in spite of knowledge, this considered as an interesting aspect of the results, which indicate that awareness may not necessarily influence health-risk behavior. [20] Nevertheless, a similar study conducted in Israel revealed that parents who were regular smokers assessed risk as significantly lower than did other participants. [15]

Age was the most sociodemographic variable associated with risk awareness, as older parenteral age has a significant correlation with fife out of eight risk awareness questions, on the other hand, M Siahpush et al. reveals that the link between knowledge of health hazards of smoking generally decreases with age. [21] in spite of this association between age and risk awareness in our result, older age was also significantly associated with parenteral smoking. However, there was no significant relationship directly with child's exposure to SHS. The possible explanation that the parents ' smoking behavior influenced their perception of children's risk of SHS rather than that of children's exposure influenced the decision whether to smoke or not. This is particularly true since the decision to start smoking was most likely made prior to the birth of children. [15]

Regarding education, it has a significant association with only two out of eight risk awareness questions, moreover, it significantly associated with parenteral smoking. A similar study conducted in Norway reported exposure was inversely correlated to the length of education. [22] Another study in Madinah, Saudi Arabia, reported that, the highest rate of SHS was among those adolescents whose fathers have no formal education, and those with less than bachelor educated mothers. [23]

Gender also was significantly associated with parenteral smoking, our result was in concordance with a similar study conducted in Taiwan

which revealed that fathers were the sole smokers in most of the families. [24] gender and marital status have a significant relationship with three out of eight risk awareness questions. Comparably, gender and marital status were insignificant variables in relation to risk perception in a similar study conducted in Israel. [15]

There was no significant relationship with income, However, children from socially disadvantaged families have a higher risk of exposure to SHS at home and this had been documented internationally in multiple studies. [25]

Higher number of children has significant association with parenteral smoking, and with smoking inside home. Likewise, a study conducted in japan revealed that infants having many siblings, has significant association for both the mother's and the father's indoor smoking. [26] Besides, number of children significantly associated with only two out of eight risk awareness questions.

Regarding employment, there was no significant association with any of risk awareness question, but, it was associated with parenteral smoking, and specifically smoking inside home. Contrariwise, in a study conducted in England, there was a strong relation between non-employment, and cigarette smoking. [27] However, a study conducted in America revealed that employed women tend to smoke more for many occupations. [28]

Correspondingly, the study results provide a significant alarm to the country authorities regarding the essential needs to establish more preventive approaches. children's are exposed to SHS inside and outside the home, so parental education is of paramount factor, by the strategy of approaching parents with the benefits of health of children exposed to tobacco smoke, instead of personal risk, can be particularly effective when the smoker believes that the health of the child will have many promotions. [29]

Health advocacy toward adopting smoke-free policies for homes, restaurants, and shopping malls is highly needed.

However, the limitations of this study should not be overlooked. The study represents a specific population limited to Al-ahsaa which results do not necessarily apply to other regions of the country.

CONCLUSION:

We conclude that children are exposed to environmental tobacco smoke, which was made evident by the data. In addition, there has been a lack of parents' knowledge about second-hand smoking and the adverse effects that smoking can have on the health of their children.

For that, we suggest several measures to be implemented in order to raise the awareness regarding SHS health hazards. First of all, through campaigns in malls. In addition, educational videos through different types of social media. Finally, to instruct the doctors in primary health care centers to educate the smokers they meet in their clinics.

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