ORIGINAL RESEARCH

Knowledge about the Harmful Effects of Environmental Tobacco Smoke, Perceptions toward Initiation of Smoking and Factors Influencing Smoking in Adolescents: A Cross-sectional Study

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Abstract

Background: The main hope of a nation lies in the proper education of its adolescents because the youths of today are the leaders of tomorrow. About 15% of children of ages 13–15 years are ingesting tobacco in certain forms and are getting addicted to tobacco. Hence, tobacco has become a burden in our society. Similarly, environmental tobacco smoking (ETS) is more dangerous than smoking and is common among young adolescents.

Aim: This study is aimed to explore the knowledge about the hazards of ETS and the factors which are responsible for adolescents to initiate tobacco smoking among parents visiting the pediatric dental clinic.

Materials and methods: A cross-sectional survey on the knowledge about the harmful effects of ETS and factors influencing the initiation of tobacco use among adolescents was assessed using a self-administered questionnaire. A sample size of 400 parents of adolescents aged between 10 and 16 years visiting the pediatric clinics was included in the study; data thus obtained was subjected to statistical analysis.

Results: The effect of ETS in increasing the risk of cancer was known to be 64.4%. But the effect on premature babies was least known by 37% of the parent population, which is statistically significant. About 14% of parents perceive that children initiate smoking to experiment or relax, which is statistically significant.

Conclusion: Parents have very little knowledge regarding the effects of ETS on children. They can be counseled regarding types of smoking and smokeless tobacco products, health hazards, the deleterious health effects of ETS, and passive smoking, particularly in children with respiratory diseases.

Keywords: Adolescents, Environmental tobacco smoke, Factors affecting smoking, Knowledge, Parents.

International Journal of Clinical Pediatric Dentistry (2022): 10.5005/jp-journals-10005-2467

Introduction

The World Health Organization defines "adolescent" as a person who is in the 10–19-year-old age group and constitutes about 22.8% of the Indian population.[1] They are the most endangered population to commence tobacco use as it is a familiar fact that most adults kick off tobacco use in childhood or adolescence.[2]

The global youth tobacco survey (GYTS) suggested that nearly 15% of children in the age group of 13–15 years ingest tobacco in some form.[3] There is also confirmation that each day 5,500 new youth acquire an addiction to tobacco.[4] It is important to recognize various factors that impact and inspire adolescents to pick up these destructive habits at a very young age because there is not only biological, cognitive, emotional, and social development of an adolescent during the developmental era but also the relationships to family, culture and society as a whole.[5]

Passive smoking or second hand smoke, also well known as ETS, is an amalgamation of exhaled cigarette smoke (mainstream smoke) and smoke that advance from the end of a smoldering cigarette (sidestream smoke).[6] Tobacco not only causes harm to the consumer directly, but also harms people indirectly. It is not only capable of harming adults, but also can reach out to its evil arms to even the fetus in the mother's womb, infants, toddlers, growing children, and adolescents. ETS is an inconsiderate blend of >7,000 chemicals, 250 of which have been identified as death-dealing and 70 that are carcinogenic.[7] ETS kills 600,000 people every year. ETS is three to four times more toxic than mainstream tobacco smoke.[6]

Parents are the preeminent direction to reach a child and can help lead to escort better outcomes for children. This relationship imputes the foundation for the child's personality, the possible life course of action and overall behavior and also affects the power of their social, physical, mental, and emotional health. There is a

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How to cite this article: Thimmegowda U, Kattimani S, Krishnamurthy NH. Knowledge about the Harmful Effects of Environmental Tobacco Smoke, Perceptions toward Initiation of Smoking and Factors Influencing Smoking in Adolescents: A Cross-sectional Study. Int J Clin Pediatr Dent 2022;15(6):667–671.

Source of support: Nil

Conflict of interest: None

gap of knowledge that exists between a parent and child; hence parents were chosen as a bridge to connect the gap in our study, as behind every young child who believes in himself is the parent who believed first. Literature has very few studies done on parents to assess the knowledge of parents regarding ETS and the factors that cause adolescents to pick up these habits bringing out the uniqueness of this study.

Materials and Methods

The study was conducted on 400 parents of children aged from 10 to 16 years visiting the pediatric dental clinic. Parents of children were randomly selected, and parents who were willing to participate in the investigation were explained the objectives of the study and were included in participating.

Inclusion criteria included parents of children aged 10–16 years who gave written informed consent for the study; exclusion criteria included parents of children below the age of 10 years.

Data was collected on knowledge using self-governed organize questions which were used to collect the responses for knowledge of the harmful effects of ETS and the factors responsible for initiating tobacco use among adolescents.

Results

In this study, a range of 10–16-year-old children were considered. According to the age-wise distribution of the study children, 56% were >12 years, and 44% were <12 years old. Among them, 57% were males, and 43% were females (Table 1).

Distribution of responses for knowledge-based questions regarding the harmful effects of ETS. Cancer is the most common risk known to the parent population, but the effect of ETS in increasing the risk of cancer is known by 64.4%. Increased risk for lung diseases was known to be 58%. The effect of ETS on children was known to be 42%. The effect on premature babies was least known to 37% of the parent population, which is statistically significant (Table 2).

Distribution of responses for knowledge-based questions regarding the perceptions towards initiation of smoking. About 14% of parents perceive that children initiate smoking to experiment or relax, which is statistically significant. About 23.3% of the parents opt for the easy availability of tobacco products as the cause for children to initiate smoking. About 21.1% of the parents choose pleasure or fashion as the reason to initiate smoking in adolescents, and 50.4% of the parents opt for all of the above options (Table 3).

Distribution of responses for knowledge-based questions regarding factors influencing smoking in adolescents. About 39.6% of parents agree that all of the above factors influence smoking in children. About 27.6% agree that the easy availability of tobacco products is an influencing factor. About 22.3% of parents agree that advertisements of celebrities or television, and 18.5% of parents agree that family influence is an influencing factor. The role of peer pressure in the initiation of smoking in adolescents known to parents is only 14.5% (Table 4).

Discussion

In comprehensive terms, launch into puberty, adolescents are influenced to experiment and swell their capacity to make an independent conclusion as adolescents are the conjugator of childhood and adulthood. Data from the Centers for Disease Control and Prevention advocate that over 14% of children try cigarettes before 12 years of age.[6] Among individuals who set off as regular smokers, 62% kick off smoking before 16 years of age.

Table 1: Age and gender-wise distribution of study children

Age and gender distribution among study children			
Variables	*Category*	*n*	*%*
Child's age	<12 years	224	56%
	>12 years	176	44%
	Mean and SD	12.7	2.0
	Range	10–16	
Child's gender	Males	228	57%
	Females	172	43%

Table 2: Comparison of the distribution of responses for knowledge-based questions regarding the harmful effects of ETS

		Males (n = 41)		*Females (n = 59)*		*Total (n = 100)*			
Questions	*Responses*	*n*	*%*	*n*	*%*	*n*	*%*	χ^2*-value*	*p-value*
		Harmful effects of ETS							
Effect on premature babies	No	173	69.2%	79	52.7%	252	63.0%	10.994	0.001*
	Yes	77	30.8%	71	47.3%	148	37.0%		
Effect on children	No	148	59.2%	84	56.0%	232	58.0%	0.394	0.53
	Yes	102	40.8%	66	44.0%	168	42.0%		
Increases risk of cancer	No	91	36.5%	51	34.0%	142	35.6%	0.265	0.61
	Yes	158	63.5%	99	66.0%	257	64.4%		
Increases risk of lung diseases	No	105	42.0%	63	42.0%	168	42.0%	0.000	1.00
	Yes	145	58.0%	87	58.0%	232	58.0%		

*signifies statistically significant

Table 3: Comparison of the distribution of responses for knowledge-based questions regarding the perceptions toward initiation of smoking

		Males (n = 250)		*Females (n = 150)*		*Total (n = 400)*			
Questions	*Responses*	*n*	*%*	*n*	*%*	*n*	*%*	*χ^2-value*	*p-value*
Perceptions toward initiation of smoking									
To experiment or relax	No	206	82.4%	137	91.9%	343	86.0%	7.052	0.008*
	Yes	44	17.6%	12	8.1%	56	14.0%		
Easy availability	No	197	78.8%	109	73.2%	306	76.7%	1.665	0.20
	Yes	53	21.2%	40	26.8%	93	23.3%		
For pleasure or fashion	No	193	77.2%	122	81.9%	315	78.9%	1.230	0.27
	Yes	57	22.8%	27	18.1%	84	21.1%		
All of the above	No	131	52.4%	67	45.0%	198	49.6%	2.064	0.15
	Yes	119	47.6%	82	55.0%	201	50.4%		

*signifies statistically significant

Table 4: Comparison of distribution of responses for knowledge-based questions regarding the factors influencing smoking in adolescents

		Males (n = 250)		*Females (n = 150)*		*Total (n = 400)*			
Questions	*Responses*	*n*	*%*	*n*	*%*	*n*	*%*	*χ^2-value*	*p-value*
Factors influencing smoking in adolescents									
Family influence	No	205	82.0%	120	80.5%	325	81.5%	0.132	0.72
	Yes	45	18.0%	29	19.5%	74	18.5%		
Peer pressure	No	212	84.8%	129	86.6%	341	85.5%	0.237	0.63
	Yes	38	15.2%	20	13.4%	58	14.5%		
Ad of celebrities/TV	No	198	79.2%	112	75.2%	310	77.7%	0.876	0.35
	Yes	52	20.8%	37	24.8%	89	22.3%		
Easy availability	No	177	70.8%	112	75.2%	289	72.4%	0.892	0.35
	Yes	73	29.2%	37	24.8%	110	27.6%		
All of the above	No	156	62.4%	85	57.0%	241	60.4%	1.118	0.29
	Yes	94	37.6%	64	43.0%	158	39.6%		

Pedneker et al. concluded that children fall prey to tobacco as prematurely as 10 years of age.[8] Featureless youthful children should contemplate being at risk for tobacco use. According to a GYTS done among 24,000 mature students who were 13–15 years aged in 2009, 14.6% of students happen to be tobacco users.[1] It is principal to acknowledge various factors that impact and motivate adolescents to pick up these substance abuses, which may have a deleterious effect on the overall well-being of adolescents which can hamper them from blooming to their full potential hence children aged 10–16 years were involved in our investigation.

Among the risks of ETS, cancer is the most common risk known to the parent population in our study. The effect of ETS on children and premature babies was least known, which is statistically significant (Table 1). Knowledge about the risk of cancer is known to parents, but the effects on babies and children are not known. There are lots of risk factors hidden under the carpet. A similar study was conducted by Magidson. in which cancer is the most common risk known as carcinogenic compounds that have been associated with lung adenomas and adenocarcinomas, cancer of the nasal mucosa and liver.[9] Haustein and Groneberg gave a shred of unquestionable evidence associated with passive smoking to an enlarged risk of cardiovascular diseases, lung and other cancers, asthma and respiratory diseases in adults, ear infection and sudden infant death syndrome in children.[10]

Environmental tobacco smoking (ETS) inhaled throughout pregnancy enlarges the risks for preeclampsia, untimely birth, bleeding during pregnancy and ectopic, and reproductive and developmental toxicity. Maternal tobacco use by the mother during pregnancy may be a risk factor for the following condition with inherited deformity in a baby like orofacial clefts, clubfoot and atrial-septal defects, enlarged risk of allergies, higher blood pressure in childhood, increased likelihood of obesity, dwarf growth, impoverished lung function increased likelihood of developing asthma, etc.[11]

When the air is adulterated with cigarette smoke, young growing lungs receive a higher congregation of inhaled toxins than do older lungs in view of the fact that a child's breathing rate is faster than that of adults. Adults respire in and out approximately 14–18 times in 1 minute, whereas newborns can respire as many as 60 times in 1 minute; until a child is about 5-year-old, the respiratory rate is quite swift. In an estimated survey among 700 million children worldwide, about 40% of all children are uncovered to ETS at home.[12]

Children in the smoking family circle experience more middle ear infections as gulping cigarette smoke exasperate the Eustachian tube and cause succeeding swelling, which leads to infections which is the most customary cause of hearing loss in children, but childhood leukemia, lymphoma, and brain tumors may be the least known causes for the same.[13] However, to date, that proof is inadequate to connect these childhood cancers with ETS definitively.[14] Gaysina et al. establish a consistent gradient in the occurrence of pneumonia and bronchitis in the child's 1st year of life in association with the parents smoking.[15]

The parameters of perception towards initiation of smoking in adolescents in our study are to experiment or relax, easy

availability, and for pleasure or fashion. The maximum no of parents opt for all the above options (Table 2). The perception of initiating smoking to experiment or relax is statistically significant in the present study. Committee on Substance Abuse concluded that the youthful age at the first use of a socially permitted drug had been announced to be 5.[16]

The smoking impact can be delineated as belonging to the child's micro and macroenvironment. The microelements are near to the child, personality and self, family, relatives, and friends. The macrofactors encompass the availability of cigarettes representation of smoking in films, magazines, and literature on tobacco. Taking the microenvironment first, children's primary socialization takes place in their home with parents, and family parents' opinions, as discerned by the child, are even more authoritative.[17]

Children are impacted not only by the school they are influenced by the environment. They are subjected to almost all the influences similar to adults. Perry et al. and Biraghi and Tortorano famed that parents reinforce beliefs regarding smoking that is probable to be adopted by their children.[4,18] Parental smoking may source children to sight smoking as an allowable adult behavior that is occupied in by those they most applaud. Children are good imitators as adults give them something good to imitate. Children also may acquire knowledge about the utilitarian value of cigarettes from their parents. When parents smoke to subsist with stress, mitigate boredom, or ease social interaction, they send an eloquent message to their children on the frame of mind towards initiation of smoking.

Family, peer influence, advertisement of celebrities, and easy availability of tobacco products are the factors influencing tobacco smoking in children. In our study, most of the parents, about 39.6%, think that it is multifactorial and everyone may influence children to smoke. Whereas 18.5% opt for family influence, 14.5% opt for peer pressure, 22.3% perceive that tobacco promotion may be the factor, and 27.6% agree with the easy availability of tobacco products (Table 3).

Peer pressure is a salient determining factor for the commencement of tobacco use among children and adolescents. There is the respective activity by which being associated with drug-using peers put up to drug-abusing behavior. Intervention should start prior to teenage; they could form their opinion and start consuming tobacco.[19] Easy availability of tobacco products are not only legally and socially sanctioned but are freely available in every nook and corner throughout the country, which prompts to acquire the habit.[20]

Tobacco publicizing and promotion productively target young people with images of smokers as trendy, sporty, and successful. Characters in movies or television serials often bespeak cigarette smoking as a routine of daily life. They sometimes even manifest cigarette lighting ways using different tricks. These scenes often fascinate the impressionable mind of the adolescents to pick up similar tricks or espouse a similar method of tobacco use.[21]

Limitations of the Study

Most of the parents were from rural areas, and female parents who accompanied the children who were uneducated in a study done in the urban area may have better knowledge about passive smoking.

Conclusion

Parents have very little knowledge regarding the effects of ETS. They can be counseled. The bulk rudimentary tobacco prevention intervention that a pedodontist can convey to children is to model a tobacco-free way of life and discourage parents from sending children to buy tobacco products, and educate the children regarding the hazards of tobacco use and passive smoking. The factors are multifactorial in adolescents. A smoke-free office habitat that accommodates antismoking posters, pamphlets, and educational material address a powerful message. Prevention is better than cure because a speck of prevention is worth a smacker of cure, as little knowledge can remove a lot of ignorance.

Acknowledgment

We would like to extend our sincere thanks to Dr Nagarathna C, Head of the Department of Pedodontics & Preventive Dentistry, RajaRajeswari Dental College & Hospital, Bengaluru, Karnataka, for the most valuable support and constant encouragement in conducting the study. Also, we intend to thank the parents who participated and helped us to complete the study.

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