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Transition in Cigarette Smoking Stages and its Relation with Parenting Styles of Parents among Iranian High School Students: A Longitudinal Study

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Abstract

Background: Smoking is increasing among adolescents, and family is a factor influencing it. The present study aimed to examine the relationship between transition in smoking stages and parenting styles of parents of adolescents.

Materials and Methods: This was a longitudinal study in which 3968 high school students in Tabriz, Iran, were examined from November 2017 to June 2018. Sampling was multi-stage, with proportional and random clusters. A questionnaire containing demographic information and potential confounders were filled in by students, and the Parenting Style Inventory was completed by parents only in the first stage. Moreover, students twice (in the beginning of the study and six months later) completed a valid algorithm of stages of cigarette smoking. Data were analyzed using univariate and multivariate logistic regression analysis.

Results: After the six-month interval, 429 students (11.7%) with a 95% Confidence Interval (CI) (10.68 - 12.76) progressed through the stages of smoking. By controlling potential confounding variables, the father's permissive parenting style compared to the authoritative style increases the odds of progress through the stages of smoking by almost five times (OR=5.06, 95% CI: 2.58 - 9.93), and the father's authoritarian parenting style compared to the authoritative style increases the odds of progress through the stages of smoking by almost four times (OR=4.01, 95% CI: 2.17 - 7.40).

Conclusion: Inefficient parenting styles are an important risk factor for progress through the stages of cigarette smoking in adolescents. Desirable relationships between parents and children as well as parents' awareness of parenting styles may prevent smoking in adolescents.

Key Words: Adolescence, Parenting, Students, Smoking.

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1- INTRODUCTION

Cigarette smoking is now a global problem (1). In the world, many adults commonly begin smoking during the adolescence period. Today, more than 3 million high school students have experienced cigarette smoking (2). Smokers form a vulnerable population because they are exposed to various diseases with a high rate of morbidity and mortality (3). Almost 6 million people die annually as a result of diseases linked to smoking, of these 600,000 people die due to second-hand inhalation of smoke (4). Based on a nation-wide study, most smokers in Iran start smoking during their school years (5). The onset of smoking in the first years of adolescence is continuously accompanied by an increased risk of nicotine dependence (6). Various studies report that smoking in early adolescence can inhibit normal cognitive development (7). It also affects addiction to narcotics, predisposing the adolescent to their use. Accordingly, smoking in the early adolescence leads to considerable social costs related to diseases, disability, and mortality throughout one's life (8).

The family is the important social unit affecting the child developmental outcomes. Meanwhile, many factors can affect the adolescents' growth and progress, in childhood and other stages of life. These include the type of parent-child relationship, parents' education level, number of children, parents' perceptions of their parenting style (9). Effective parenting style can be a protective factor in childhood behavior problems such as substance use (10). Rajabalipor et al. showed family is an important risk factor for tendency toward water pipe-smoking in adolescence (11). Rezaei et al. showed risk of cigarette smoking was increased with cigarette smoking by sister (s) or brother (s)(12). Many psychologists justified deviant behaviors based on parenting styles and believe that some of these styles affect the tendency to deviant behaviors more than other styles (13). By knowing the factors exposing a person to the tendency to smoking, people at risk can be identified and precise and effective planning can be made for preventing their affliction. Gandomani et al. examined the typology of parenting styles and their effects on male adolescent's tendency to narcotics. They reported that having authoritative parents has the best outcome for children, and the highest tendency to narcotics was seen in types where either one or both parents are permissive (14). Of course, according to Sohrabi et al.'s study, the authoritarian parenting style is associated with the use of narcotics (15). Barati et al. mentioned that a direct correlation exists between permissive and authoritarian parenting styles on the one hand, and narcotic use on the other (16). Therefore, one can claim that the results of studies differ even across different regions of Iran, and the geographical and cultural features of various regions may affect this. Since few studies have been done on the variables of this study on students, and on the other hand, considering the social nature of smoking and the potential relationship between parenting styles and progress through stages of cigarette smoking, the present study examined the progress through these stages and its relationship with parenting styles in a representative sample of high-school students of Tabriz, Iran.

2- MATERIALS AND METHODS

2-1. Study design and population

In this longitudinal study, a representative sample of 10th grade students in Tabriz (Northwest of Iran) was assessed twice. Sixty high schools in Tabriz were selected and 3968 high school students participated. Sampling was multi-stage, with proportional and random clusters. First, the number of students in each district was estimated, and the

number of the sample from each district was determined proportionally to the total number of students in that district. In the next step, the number of high-school students in each district was estimated per the type of school, and the sample from each school was determined proportionally to the total number of students in each school type. Then, some schools were selected via simple random method. Among the selected schools, one or more classes were randomly chosen, and all the students in these classes were examined as the sample.

2-2. Method

Participants completed a self-administered multiple-choice anonym questionnaire during November and December of 2017. Six months later (May of 2018) the same questionnaire (after excluding the unnecessary parts) was distributed to the same students in order to study changes in cigarette smoking behavior. The reason for limiting the representative samples to 10th grade students was for a better possibility of tracking them in the subsequent phase of the study. First, the topic and objectives of the study were explained to the principals of the high schools and their consent was obtained. Then, the classes were selected for sampling and sampling time was set. The classes were visited at the time set; the students were briefed on the objectives of the study and provided consent for participation. At the beginning of the study, students filled in the questionnaire of cigarette smoking, and their parents completed the Baumrind's Parenting Style Inventory (PSI).

2-3. Measuring tools

Data collection instruments were a demographic information questionnaire, algorithm for examining the stages of smoking and parenting styles questionnaire. The demographic information comprises sex, age, attitude toward smoking, socio-economic status (SES), previous year average grades and field of study. In this study, the cigarette smoking stages were measured by using a valid algorithm according to data in **Table.1,** and the transition in cigarette smoking stages was considered as progressing in these stages over six months (17).

Table-1: Definitions of smoking acquisition stages and cessation stages.

Smoking Acquisition Stage	Definition
Committer	Never smoked and sure to never start smoking.
Immotive	Never smoked and does not plan to start smoking.
Progressive	Never smoked and is planning to start smoking in the next 5 years, but not within next six months.
Contemplator	Never smoked and is planning to start smoking in the next six months.
Preparatory	Never smoked and is planning to start smoking in the next month.
Tried	Tried only a puff or one-two cigarettes. Has not smoked in the last month.
Experimenter	Smoked more than two cigarettes but less than 100 cigarettes in lifetime. Has not smoked in the last week and probably in the last month.
Regular Smoker	Smokes occasionally, at least monthly; And more than 100 cigarettes in lifetime. Has smoked probably in the last week.
Established/Daily Smoker	Smoke daily or almost every day. Has smoked in the last week.

The attitude toward smoking among the students was measured through 6 questions similar to Hill et al. (18); accordingly, 6 pairs of bipolar answers were introduced for the question "I think that for me, to smoke cigarettes is …." as follows: "disagreeable–agreeable, bad–good, annoying–interesting, unpleasant–pleasant, unhealthy– healthy, and disadvantageous–advantageous". Every pair of words was considered as a separate question and the score of each question was ranked between +2 to -2. Generally, the attitude toward smoking for everyone is composed of total sum of these scores, ranges between -12 to +12. The reliability of the Persian version of this questionnaire was proven in the recent study by Mohammadpoorasl et al. (19). Baumrind's Parenting Style Inventory (PSI) was inspired by the theory of parental authority. According to Baumrind, it comprises three styles of permissive, authoritarian, and authoritative, formed to examine the pattern of parental authority and methods of parenting. This inventory has 30 questions, 10 of which belong to absolute permissive style, 10 to an authoritarian style, and 10 to authoritative style.

Response pattern is based on a five-point Likert scale: completely agree, agree, somehow disagree, disagree, and completely disagree. In addition to the response pattern, scoring of items is based on a Likert scale. By summing the scores, three separate scores related to absolute permissive style, authoritarian style, and authoritative style are yielded for each respondent. The highest and lowest scores are 40 and 0, respectively. The highest scores in each sub-scale demonstrate the person's parenting style. Reliability of the questionnaire by using test-retest among mothers was reported by Bori (1991) 0.81 for Permissive, 0.86 for Authoritarian and 0.78 for Authoritative and among the fathers reported 0.77 for Permissive, 0.85 for Authoritarian, and 0.88 for Authoritative. The validity of the test content was also emphasized by 10 experts in psychology and psychiatry and is a suitable tool. In Iran, Esfandyari (2000) reported the validity and reliability of this questionnaire as favorable for Permissive 0.69, for Authoritarian 0.77 and for Authoritative 0.73 (16). In this study, the socio-economic status was estimated using the father's education, mother's education, household assets, and household income. This variable was made by using the principal component analysis and the students were classified in one of the levels of very high, high, moderate, low, and very low socioeconomic status.

2-4. Inclusion and exclusion criteria

Inclusion criteria included studying in Tabriz Secondary High School and consent to participate in the study. Students who either did not live with parents or lived with just one of them were excluded.

2-5. Ethical consideration

The respondents were assured about the voluntary nature of the participation in the study and the confidentiality of the information before distributing the questionnaire; furthermore, they were asked not to provide their personal information in the questionnaire. The Eastern Azerbaijan Province Education Organization and the Ethics Committee of Tabriz University of Medical Sciences had approved this study and the related questionnaire (Code: IR.TBZMED.REC.1396.677).

2-6. Data Analyses

Data were analyzed using SPSS software version 24.0. Descriptive statistics were used to determine the frequency, percentage, mean and standard deviations of the variables. To determine the relationship between the variables, t-test, Chi-square, as well as univariate and

multivariate logistic regression analysis were used.

3- RESULTS

The total number of students selected was 4,216, of which 221 were absent in the first stage and 27 were not willing to participate. Therefore, 3,968 (participation rate: 94.1%) students participated in this study. Out of 3,968 students, 1868 (47.1%) were male and 2100 (52.9%) were female. The mean age of students was 15.96 ± 0.75 years (age range of 14 - 19 years). Moreover, 790 students (19.9%) were studying mathematics, 1350 (34%) were in experimental sciences, 817 (20.6%) were studying humanities, and 1011 (25.5%) studied technical and vocational majors. In the first phase of the study, 75.4% students (95% CI= 74.1 – 76.8) were non-smokers, 17% (95% CI= 15/9 – 18/2) were experimenters, and 7.5% (95%CI= 6.7 – 8.3) were regular smokers. In the second phase of the study, 73.0% of students (95% CI= 71.5 – 74.4) were non-smokers, 18.4% (95% CI= 17/1 – 19/6) were experimenters, and 8.6% (95% CI= 7.8 – 9/6) were regular smokers.

In the second phase, 296 students (7.5%) did not participate because they were absent. Of the remaining 3672 students, after the six-month interval, 429 students (11.7%; 95% CI of 10.68 - 12.76) progressed through the stages of smoking. Transitions through the stages of smoking at various levels of demographic variables and risk factors are presented in **Table.1**. Evidently, all variables except for living with parents were significantly related to progress through stages of smoking. In addition, 37.2% of students whose father had a permissive parenting style progressed through the stages of smoking in the second phase of follow-up, whereas 24.2 and 7.1% of those whose father had an authoritarian or authoritative style progressed through these stages, respectively. Furthermore, 35.3% of students whose mother had a permissive parenting style progressed through the stages of smoking in the second phase of follow-up, whereas 26.2 and 7.2% of those whose mother had an authoritarian or authoritative style progressed through these stages, respectively. Univariate or multivariate logistic regression was performed to examine the relationship between fathers' and mother's parenting style on the one hand, and progress through the stages of smoking on the other (**Table.2**).

In multivariate analysis, age, sex, socioeconomic status, having a smoker in the family, having a smoker friend (s), field of study, previous year average grades, attitude toward smoking and general risk-taking behaviors were entered in the model as potential confounders. Based on the results, the mother's parenting styles were related to progress through stages of smoking in a univariate manner, while this relationship was not significant after controlling potential confounding variables.

By controlling potential confounding variables, the father's permissive parenting style compared to the authoritative style increases the odds of progress through the stages of smoking by almost five times (OR=5.06; 95 CI%: 2.58 - 9.93), and by controlling potential confounding variables, the father's permissive parenting style compared to the authoritative style increases the odds of progress through the stages of smoking by almost four times (OR=4.01; 95% CI: 2.17 - 7.40) (**Table.3**).

Table.2: Transitions through the stages of smoking at various levels of demographic variables and risk factors.

Variables		Transition		Total	P-value
		No	Yes		
Gender	Male	1500 (85.6)	252 (14.4)	1752 (47.7)	<0.001
	Female	1743 (90.8)	177 (9.2)	1920 (52.3)	
Socio-economic status	Very low	603 (86.5)	94 (13.5)	697 (20.3)	<0.001
	Low	639 (92.1)	55 (7.9)	694 (20.2)	
	Middle	616 (88.9)	77 (11.1)	693 (20.2)	
	High	598 (89.1)	73 (10.9)	671 (19.5)	
	Very high	575 (84.1)	108 (15.9)	683 (19.8)	
Field of study	Mathematical	668 (88.6)	86 (11.4)	754 (20.5)	0.021
	Experience	1094 (86.1)	176 (13.9)	1270 (34.6)	
	Humanities	660 (89.7)	76 (10.3)	736 (20.0)	
	Technical	821 (90.0)	91 (10.0)	912 (24.8)	
Living with parents	Yes	3086 (88.4)	403 (11.6)	3489 (95.2)	0.223
	No	151 (86.3)	24 (13.7)	175 (4.8)	
Having smoker in the family	Yes	1080 (84.7)	195 (15.3)	1275 (34.9)	<0.001
	No	2149 (90.2)	234 (9.8)	2383 (65.1)	
Having smoker friend(s)	Yes	816 (79.7)	208 (20.3)	1024 (28.3)	<0.001
	No	2382 (91.7)	215 (8.3)	2597 (71.7)	
General risk behavior	Yes	1617 (85.2)	280 (14.8)	1897 (51.8)	<0.001
	No	1619 (91.9)	143 (8.1)	1762 (48.2)	
Parenting Style of father	Permissive	262 (62.8)	155 (37.2)	449 (16.5)	<0.001
	Authoritarian	147 (75.8)	47 (24.2)	209 (7.7)	
	Authoritative	1791 (92.9)	136 (7.1)	2060 (75.8)	
Parenting Style of mother	Permissive	268 (64.7)	146 (35.3)	442 (15.9)	<0.001
	Authoritarian	141 (73.8)	50 (26.2)	209 (7.5)	
	Authoritative	1843 (92.8)	144 (7.2)	2129 (76.6)	
Age		15.94 ± 0.76*	16.06 ± 0.72	15.95 ± 0.75	0.002
Previous year average grades		17.76 ± 1.87	16.93 ± 2.41	17.67 ± 1.95	<0.001
Attitude toward smoking		-8.82 ± 4.76	-4.05 ± 7.01	-8.32 ± 5.25	<0.001

* Numbers are presented as number (percentage) or the mean ± standard deviation.

Table-3: Logistic regression analysis of the relationship between "transition in cigarette smoking stages" and "parenting styles"

Univariate analysis				
		OR	95% CI	P-value
Mother Parenting Style	Authoritative	1	-	-
	Permissive	6.97	5.36 - 9.07	<0.001
	Authoritarian	4.54	3.15 - 6.53	<0.001
Father Parenting Style	Authoritative	1	-	-
	Permissive	7.79	5.98 - 10.15	<0.001
	Authoritarian	4.21	2.90 - 6.11	<0.001
Multivariate analysis				
		OR*	95% CI	P-value

Mother Parenting Style	Authoritative	1	-	-
	Permissive	1.65	0.87 - 3.14	0.127
	Authoritarian	1.87	0.98 - 3.57	0.056
Father Parenting Style	Authoritative	1	-	-
	Permissive	5.06	2.58 - 9.93	<0.001
	Authoritarian	4.01	2.17 - 7.40	<0.001

OR: Odds Ratio, CI: Confidence Interval
* Adjusted for age, gender, smoker in the family, having smoker friend, SES, attitude toward smoking, field of study, general risk taking behavior, previous year average grade.

4- DISCUSSION

The main aim of the present study was to examine the relationship between transition in smoking stages and parenting styles of parents of adolescents. Results of the present study showed that no significant relationship exists between progress through the stages of smoking and mother's parenting style. In other words, the mother's parenting style over time has no effect on their children's smoking. However, progress through these stages was affected by the father's parenting style. Parenting style is a combination of two child-rearing aspects of control and care. Consistent with the results of this study, Wang et al. state that maternal control and care and having authoritative parents is associated with less chance of smoking in adolescents. However, the father's care and father's control were associated with a lower and higher chance of smoking, respectively, especially in the case of smoker parents (20). According to Tondowski et al., smoking is more prevalent among adolescents whose families have the permissive parenting style, while authoritative families prevented smoking in their children (21). Of course, according to Seyfi Gandmani, having an authoritative father and mother had the best outcome for children, while the most tendency to narcotics was seen in types where one or both parents are permissive (14). Barati et al. mentioned that a direct correlation exists between permissive and authoritarian parenting style and narcotic use (16). It can be stated that parents can affect smoking in adolescents because the availability of cigarettes and frequent communication about smoking predicted smoking, whereas a high quality of communication, negative reactions or punishments and setting norms by parents showed a preventive effect (22). Another factor which may be related to smoking and narcotic use is the low level of parental involvement and limited parental supervision (23). These findings can be justified by the fact that parents' desirable performance in parenting (i.e. choosing an efficient parenting style) helps prevent smoking and its resulting high-risk behaviors and social harms in adolescents. In other words, parents' permissive style leads to progress in stages of smoking. The presence of an open and high-quality relationship between adolescents and parents, adolescent's trust in parents, and parents' control of their children's behaviors can help prevent smoking. Finally, one can state that if families make an effort to present a dynamic, efficient, and effective role model for their children, pave the way for educating their children, and have a continuous, dynamic, and responsible supervision on their actions, they prevent the emergence of anti-social behaviors such as smoking and help their children pass this stage. One of the limitations of the present study was limiting of the sample to 10th grade students. Furthermore, despite our emphasis on confidentiality of their responses and anonymity of questionnaires, the students' self-reporting on their tobacco smoking status can be

mentioned as another limitation of the present study.

5- CONCLUSION

In this study 37.2% of students whose parents had a permissive parenting style progressed through the stages of smoking in the second phase of follow-up, whereas the number of those whose parents had an authoritarian or authoritative style progressed through these stages was less. Therefore, inefficient parenting styles are an important risk factor for progress through the stages of cigarette smoking in adolescents. Desirable relationships between parents and children as well as parents' awareness of parenting styles may prevent smoking in adolescents.

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7- CONFLICT OF INTEREST: None.

8- REFERENCES

1. Banzer R, Haring C, Buchheim A, Oehler S, Carli V, Wasserman C, et al. Factors associated with different smoking status in European adolescents: results of the SEYLE study. European child & adolescent psychiatry. 2017;26(11):1319-29.

2. Tezera N, Endalamaw A. Current Cigarette Smoking and Its Predictors among School-Going Adolescents in East Africa: A Systematic Review and Meta-Analysis. International Journal of Pediatrics. 2019;2019. https://doi.org/10.1155/2019/4769820.

3. Drovandi A, Teague P-A, Glass B, Malau-Aduli B. Do Health Warnings on Cigarette Sticks Dissuade Smokers and Non-smokers? A Focus Group and Interview Study of Australian University Students. Psychology Research and Behavior Management. 2019;12:361-73.

4. Kim SJ, Han K-T, Lee SY, Chun S-Y, Park E-C. Is Secondhand Smoke Associated with Stress in Smokers and Non-smokers? BMC Public Health. 2015;15(1):1249. https://doi.org/10.186/s12889-015-2612-6.

5. Kelishadi R, Shahsanai A, Qorbani M, Motlagh ME, Jari M, Ardalan G, et al. Tobacco Use and Influencing Factors Among Iranian Children and Adolescents at National and Subnational Levels, According to Socioeconomic Status: The Caspian-IV Study. Iranian Red Crescent Medical Journal. 2016;18(5. https://doi.org/10.5812/ircmj.21858.).

6. Cambron C, Kosterman R, Catalano RF, Guttmannova K, Hawkins JD. Neighborhood, family, and peer factors associated with early adolescent smoking and alcohol use. Journal of youth and adolescence. 2018;47(2):369-82.

7. Lydon DM, Wilson SJ, Child A, Geier CF. Adolescent brain maturation and smoking: what we know and where we're headed. Neuroscience & Biobehavioral Reviews. 2014;45:323-42.

8. Control CfD, Prevention. Smoking-attributable mortality, years of potential life lost, and productivity losses--United States, 2000-2004. MMWR Morbidity and mortality weekly report. 2008;57(45):1226.

9. Zhang X, Hu BY, Ren L, Huo S, Wang M. Young Chinese Children's Academic Skill Development: Identifying Child-, Family-, and School-Level Factors. New Directions for Child and Adolescent Development. 2019;2019(163):9-37. https://doi.org/10.1002/cad.20271.

10. Krohn MD, Larroulet P, Thornberry TP, Loughran TA. The Effect of Childhood Conduct Problems on Early Onset Substance Use: An Examination of the Mediating and Moderating Roles of Parenting Styles. Journal of Drug Issues. 2019;49(1):139-62. https://doi.org/10.1177/0022042618811784.

11. Rajabalipour M, Khoshab H, Baneshi MR, Nakhaee N, Sharifi H, Tavakoli F, et al. Using Social Cognitive Theory to Investigate the Risk Factors of Waterpipe Smoking among

Southeastern Iranian Adolescents. International Journal of Pediatrics. 2019;7(10):10243-53.

12. Rezaei F, Noroozi M, Mansourian M, Safari O, Jahangiry L. the role of social and familial factors as predicting factors related to hookah and cigarette smoking among adolescents in Jahrom, South of Iran. International Journal of Pediatrics. 2017;5(5):4929-37.

13. McGrath JJ, Alati R, Clavarino A, Williams GM, Bor W, Najman JM, et al. Age at First Tobacco Use and Risk of Subsequent Psychosis-Related Outcomes: A Birth Cohort Study. Australian & New Zealand Journal of Psychiatry. 2016;50(6):577-83. https://doi.org/10.1177/0004867415587341.

14. Seyfi Gandmani M, Saffarinia M, Kalantari Meybodi S. Family Typology and Its Impact on Drug Tendency in Adolescents. 2013;7(25):11-24.

15. Sohrabi F, Hasani A. Parenting Style and Anti-social Behavior of Adolescent Girls. Journal of Psychology. 2007;11(1):75-88.

16. Barati H, Rezaei F, Karimzadeh H. Prediction Smoking Cigarette Due to Variables, Parenting and

Life Style in Male Student in Islamic Azad University of Khomeinishahr. 2018.

17. Mohammadpoorasl A, Nedjat S, Yazdani K, Fakhari A, Foroushani AR, Fotouhi A. An algorithm of smoking stages assessment in adolescents: A validation study using the latent class analysis model. International journal of preventive medicine. 2013;4(11):1304.

18. Hill AJ, Boudreau F, Amyot É, Déry D, Godin G. Predicting the Stages of Smoking Acquisition According to the Theory of Planned Behavior. Journal of Adolescent Health. 1997;21(2):107-15.

19. Mohammadpoorasl A, Nedjat S, Fakhari A, Yazdani K, Foroushani AR, Fotouhi A. Smoking Stages in An Iranian Adolescent Population. Acta Medica Iranica. 2012:746-54.

20. Wang Y, Krishnakumar A, Narine L. Parenting Practices and Adolescent Smoking in Mainland China: The Mediating Effect of Smoking-Related Cognitions. Journal of Adolescence. 2014;37(6):915-25.

21. Tondowski C, Bedendo A, Zuquetto C, Locatelli D, Opaleye E, Noto A. Parenting Styles as a Tobacco-use Protective Factor among Brazilian Adolescents. Cad Saude Publica. 2015;31(12):2514-22.

22. Hiemstra M, de Leeuw RNH, Engels RCME, Otten R. What parents can do to keep their children from smoking: A systematic review on smoking-specific parenting strategies and smoking onset. Addictive Behaviors. 2017;70:107-28.

23. Vaughan EL, Kratz L, d'Argent J. Academics and substance use among Latino adolescents: results from a national study. Journal of ethnicity in substance abuse. 2011;10(2):147-61.