

# Self-Efficacy for Smoking Cessation and Knowledge about Smoking Consequences among Adolescents

Ayoub Akbar Rafat, Msc\* Haqi Ismael Mansoor, Ph.D\*\*

## ABSTRACT

**Background:** The world's population in 2020, 22.3% consumed tobacco: 36.7% of males and 7.8% of women. 15.9% of those 15 years of age and above daily smoked tobacco throughout Organization for Economic Cooperation and Development (OECD) nations in 2021.

**Methods:** A descriptive correlation conducted from 10th November 2023 to 20th June 2024, study aimed to identify if participants' age, family's socioeconomic status, and knowledge about smoking consequences can predict their Self-Efficacy for smoking cessation. The study included a convenience sample of 400 high school students. The study instrument is composed of students' sociodemographic sheet, Family's Socioeconomic Status Scale, The Smoking: Self-Efficacy/Temptation Scale, and The Knowledge about the Consequences of Smoking Scale. Data were collected using a self-reported instrument for the period from February 15<sup>th</sup>, 2024, to March 4<sup>th</sup>, 2024.

**Results:** The study results revealed that family's socioeconomic status positively predicts students' Self-Efficacy for smoking cessation. On the other hand, knowledge about the consequences of smoking negatively predicts students' Self-Efficacy for smoking cessation. There is a statistically significant difference in Self-Efficacy for smoking cessation among family's socioeconomic status groups.

**Conclusion:** The student researcher concluded that the better the socioeconomic status the family has, the greater the Self-Efficacy students enjoy. The broader the knowledge the students have, the greater the Self-Efficacy for smoking cessation they enjoy.

**Keywords:** Adolescents, Knowledge, Smoking Consequences, Self-Efficacy, Smoking Cessation.

## INTRODUCTION

Surgeon General reports have offered conclusive reviews of the data about the link between smoking and health since the first one in 1964. A broad variety of subjects have been covered, including the health impacts of smoking (both active and passive). There is a lack of coverage of the information regarding the processes by which smokeless tobacco causes illness in this paper, which instead concentrates on the health effects of exposure to tobacco smoke. <sup>(1,2)</sup> Among the 1.3 billion people who smoke cigarettes annually, around 80% reside in nations with low or medium economic levels. Of the total population, 22.3% used tobacco in 2020, with males accounting for 36.7% and women for 7.8% <sup>(3,4)</sup>. The majority of its 100 million casualties occurred in the developed nations of the modern era. <sup>(5)</sup> Tobacco use damages almost every bodily organ and causes illness and incapacity. <sup>(6)</sup> Tobacco use damages almost every bodily organ and causes illness and incapacity. <sup>(7)</sup> Half of tobacco smokers who do not stop eventually die from the disease. In addition to the 8 million smokers, an estimated 1.3 million non-smokers die each year as a result of secondhand smoke from tobacco <sup>(8)</sup>. The United States has the highest rate of avoidable mortality, disability, and illness caused by tobacco smoking. About 2.80 million American adolescents in grades 7–12 use tobacco products, including electronic cigarettes, while an estimated 28.3 million adults smoke cigarettes. Smoking and secondhand smoke cause the early deaths of almost half a million Americans annually. Smoking has also caused a major sickness

in another 16 million people. <sup>(9)</sup> Medical treatment for adult smoking-related diseases costs the US around \$225 billion annually. The tobacco industry spends billions of dollars each year on marketing cigarettes <sup>(10)</sup>. Scientific consensus has long held that cigarette smoking is a major contributor to a wide range of health problems. It is well acknowledged that tobacco smoking is a substantial contributor to avoidable mortality in most developed countries and is becoming an even bigger problem in developing and middle-income countries. Additionally, it is known to cause impairment and lost productivity due to early deaths <sup>(11)</sup>. Still, seeing smokes in public places is nothing out of the ordinary. Some people continue to smoke despite the fact that doing so is harmful to their health. <sup>(12)</sup> When it comes to changing health-related behaviors, like quitting smoking, self-efficacy the belief in one's own abilities to do so is crucial. <sup>(13)</sup> A person's belief in their own ability to successfully stop and avoid relapse is a strong predictor of both. <sup>(14)</sup> This study aims to identify if participants' age, family's socioeconomic status, duration of smoking initiation, and knowledge about smoking consequences can predict their Self-Efficacy for smoking cessation.

## METHODS

A descriptive correlational design was used to guide this study. Descriptive correlational design is a type of correlational research because its primary purpose is to examine relationships between and

---

\* Community Health Nursing Department  
College of Nursing, University of Kerbala, Iraq.  
Email: ayoub.a@s.uokerbala.edu.iq

\*\* Instructor, Community Health Nursing Department  
College of Nursing, University of Kerbala, Iraq.  
Email: Haqi.i@uokerbala.edu.iq

among variables<sup>(15,16)</sup>. The study was conducted at Tuz County, Saladin Governorate. The subjects were recruited from eight high schools in this county. The study included a non-probability convenience sample of high school students who agreed to participate in this study. The study participants were collected from the three stages and the student researcher enters the available subjects until he reaches the required sample. The sample size was determined based on a moderate effect size (0.25), alpha error probability of 5%, a power of 95%, and 10 groups. Thus, the recommended sample size would be 390. Considering an attrition rate of 20% of the recommended sample size which will be 78, the final sample size is 400. Inclusion criteria involve high school students, males, and morning study participants were predetermined as criteria based on which the study participants will be recruited. Exclusion criteria involve students at middle school and evening study. The study instrument is composed of students' sociodemographic sheet (age, living arrangement, residency), and grade. It also includes the Family's Socioeconomic Status Scale which is adopted from Shaikh and Pathak (2017). This scale encompasses father's level of education (its score ranges from 1-10), mother's level of education (its score ranges from 1-10), household's occupation (its score ranges from 1-10), and family's monthly income (its score ranges from 1-10). The total score is calculated by summing the scores of the aforementioned indices. The score ranges between 4-5 is classified as of lower class, the score that ranges between 6-14 is classified as of upper lower class, the score that ranges between 15-20 is classified as of lower middle class, the score that ranges between 21-33 is classified as of upper middle class, and the score that ranges between 34-40 is classified as of upper class. The study instrument also includes the Smoking: Self-Efficacy / Temptation Scale. It also includes the 19 items that are measured on a 5-point Likert scale of 1 for (Not at all tempted), 2 for (Not very tempted), 3 for (Moderately tempted), 4 for (Very tempted), and 5 for (Extremely tempted). The total score ranges between 19-90. Higher score indicates Self-Efficacy for smoking cessation. The Smoking: Self-Efficacy / Temptation Scale demonstrated very good internal consistency reliability (Cronbach's alpha = .862) and excellent content validity (Content validity index = 0.92). It also includes the Knowledge about the Consequences of Smoking Scale. The Knowledge about the Consequences of Smoking Scale displayed very good internal consistency reliability (Cronbach's alpha = .873) and excellent content validity (Content validity index = 0.94). A pilot study was conducted among a random sample of (35) smoking middle school students from (4) schools in the city of Tuz was included in the pilot study, and the pilot study sample was excluded from the total study sample. The participant needed approximately (20-30) minutes to complete the questionnaire and answer all questions. The pilot study was conducted from March 11<sup>th</sup> to March 15<sup>th</sup>, 2024.

### ETHICAL CONSIDERATIONS

This study was approved by ethics committee the College of Nursing at the University of Karbala to facilitate a mission addressed and the Salah al-Din Education Directorate, Tuz Education Department. In addition, another official approval was obtained from the general

Directorate of Education of Tuz City to collect the required data from the middle school in Tuz County.

### STUDY PROCEDURE

Data were collected by a self-administered method. The researcher met all the principals of selected schools and asked to be alone with students. Thereafter, the researcher obtained a verbal consent of the selected students to participate in the study then the researcher randomly chose between the smoking students. Then, every group of smoker students selected was informed about the study subject and how they fill out

the questionnaire. Data were analyzed using the statistical package for social science (SPSS) IBM, version 27. The descriptive statistical measures of frequency were used to describe the study participants' sociodemographic characteristics. The arithmetic mean and standard deviation were also used. The inferential statistical measures of Pearson correlation which was used to identify the correlation between independent variables and the dependent variable<sup>(17-20)</sup>.

## RESULTS

**Table 1. Participants' sociodemographic characteristics (N = 400)**

Variable	Frequency	Percent
<b>Age (Years): Mean (SD): 17.75 ± 1.24</b>		
16	72	18.0
17	113	28.2
18	102	25.5
19	69	17.3
20	44	11.0
<b>Grade</b>		
Fourth	126	31.5
Fifth	145	36.25
Sixth	129	32.25
<b>Father's level of education</b>		
Unable to read and write	60	15.0
Read and write	34	8.5
Elementary school	98	24.5
Middle school	66	16.5
High school	48	12.0
Diploma	47	11.8
Bachelor's degree	38	9.5
High Diploma	0	0.0
Master's degree	8	2.0
Doctoral degree	1	0.3
Variable	Frequency	Percent
<b>Mother's level of education</b>		
Unable to read and write	56	14.0
Read and write	39	9.8
Elementary school	137	34.3
Middle school	78	19.5
High school	29	7.2
Diploma	25	6.3
Bachelor's degree	36	9.0
<b>Family's monthly income (Iraqi Dinar)</b>		
< 300.000	62	15.5
300.000-600.000	79	19.8
601.000-900.000	127	31.8
901.000-1.200.000	60	15.0
1.201.000-1.500.000	42	10.5
≥ 1.501.000	30	7.5
<b>Socioeconomic Class</b>		
Lower class	8	2.0
Upper lower class	214	53.5
Lower middle class	107	26.8
Upper middle class	70	17.5
Upper class	1	0.3
<b>Living Arrangements</b>		
Live with parents	294	73.5
Live with my mother	67	16.8
Live with my father	27	6.8
Live with my relatives	6	1.5
Live with my friends	3	0.8
Other	3	0.8

SD: Standard deviation

The average age is 17.75 ± 1.24 years. Out of the total participants, 28.2% are in the 17-year age group, followed by 25.5% in the 18-year age group, 18.0% in the 16-year age group, 17.3% in the 19-year age group, and 11.0% in the 20-year age group. When broken down by grade, almost a third are in the fifth grade (n = 145; 36.25 percent), followed by the sixth grade (n = 129; 32.25 percent), and finally the fourth grade (n = 126; 31.5%). When it comes to the level of education that fathers have, about a quarter have completed elementary school (n = 98; 24.5%), followed by those who have completed middle school (n = 66; 16.5%), some cannot read or write (n = 60; 15.0%), some have completed high school (n = 48; 12.0%), some have a diploma degree (n = 47; 11.8%), some have a bachelor's degree (n = 38; 9.5%), some can read and write (n = 34; 8.5%), some hold a master's degree (n = 8; 2.0%), and one of them has a doctoral degree (n = 1; 0.3%). More than one-third of the mothers have completed elementary school (n = 137; 34.3%), then middle school (n = 78; 19.5%), none can read or write (n = 56; 14.0%), some can read and write (n = 39; 9.8%), 36 have a bachelor's degree (n = 36; 9.0%), 29 have a high school diploma (n = 25; 6.3), and a few have a diploma. Concerning family's monthly income, less than a third reported that their income is 601.000-900.000 ID (n = 127; 31.8%), followed by those whose income less than 300.000 ID (n = 62; 15.5%), those whose income 901.000-1.200.000 ID (n = 60; 15.0%), those whose income is 1.201.000-1.500.000 ID (n = 42; 10.5%), and those whose income is 1.501.000 or more (n = 30; 7.5%). When asked about their living arrangements, the majority of respondents (n = 294; 73.5% of the total) said they've been staying with their parents. Next came those who live with their mothers (n = 67; 16.8% of the total), then those who live with their fathers (n = 27; 6.8% of the total), then those who live with relatives (n = 6; 1.5%), and finally, those who live with friends and other people (n = 3; 0.8%). Considering the socioeconomic status of the participants, over half fall into the upper lower class (n = 214; 53.5%), followed by the lower middle class (n = 107; 26.8%), the upper middle class (n = 70; 17.5%), the lower class (n = 8; 2.0%), and finally, one person in the upper class (n = 1; 0.3%).

**Table 2. Stepwise regression for predicting participants' Self-Efficacy**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	51.495	10.492		4.908	.000
	Age	-.212	.573	-.018	-.370	.712
	Socioeconomic Status	.586	.128	.224	4.568	.000
2	(Constant)	63.048	11.446		5.508	.000
	Age	-.257	.569	-.022	-.452	.652
	Socioeconomic Status	.605	.128	.231	4.739	.000
	Knowledge	-.571	.233	-.119	-2.447	.015

a. Dependent Variable: Self-Efficacy

B: Beta; t: T-statistics; Sig.: Significance; Std. Error: Standard Error

The stepwise regression model displays that family's socioeconomic status positively predicts students' Self-Efficacy for smoking cessation (p-value = .000). On the other hand, knowledge about the consequences of smoking negatively predicts students' Self-Efficacy for smoking cessation (p-value = .015).

**DISCUSSION**

This descriptive correlation study aimed mainly to identify factors that can predict participants' Self-Efficacy of smoking cessation. Smoking is commonly well documented as a significant factor leading to adverse long-term health effects, including lung cancer, respiratory illnesses, and heart disease (21). However, smoking is one of the main preventable factors that contribute to morbidity and mortality (22). Bandura's Social Learning Theory includes the concept of Self-Efficacy, which is the belief in one's own ability to carry out a specific behavior or action (23). Within the framework of the Trans theoretical Model of Change (TTM), Self-Efficacy is described as self-confidence in resisting temptations (24). Research indicates that individuals in the Precontemplation Stage (one of the constructs of the TTM) may have low self-confidence in resisting smoking temptations, but this confidence tends to increase significantly once they become abstinent and maintain abstinence (25,26). The stepwise regression model displayed that family's socioeconomic status positively predicts students' Self-Efficacy for smoking cessation. This finding implies that the better the socioeconomic status the family has, the greater the Self-Efficacy students enjoy. This finding could be explained as having better socioeconomic status enables families to have access to literature that makes them knowledgeable enough to refrain from smoking behavior or striving for its cessation. This finding goes in line with that obtained by (27) who concluded that the likelihood of having better knowledge was recorded among participants who are classified as of socioeconomic status in second, third, fourth, and fifth quintiles compared to those living in the household ranked at the lowest quintile. Significant disparities have arisen where individuals from low socioeconomic status (SES) backgrounds exhibit a decelerated decline in smoking rates, resulting in a higher concentration of smokers within this demographic (28). Despite the fact that lower SES groups have higher tobacco usage rates in general, they are equally inclined to attempt smoking cessation as their higher SES counterparts (Brown et al.,2014). However, they face lower odds of successfully quitting smoking (29). On the other hand, knowledge about the consequences of smoking inversely predicted students' Self-Efficacy for smoking cessation. This finding implies that the broader the knowledge the students have, the greater the Self-Efficacy for smoking cessation they enjoy. The literature pinpointed a link between individuals' knowledge and their Self-Efficacy. It was found that the majority of nurses had dissatisfactory Self-Efficacy since they lack the knowledge that can influence their behavior in providing the care to their patients (30). Behavior is a response that emerges from the assimilation of knowledge and self-confidence, which is acquired from either the surroundings or one's own self. It has been established that a mere 46.1% of nurses possess the ability to deliver commendable spiritual care (31,32).

**CONCLUSION**

**The researchers concluded that better the socioeconomic status the family has, the greater the Self-Efficacy students enjoy. Moreover, the broader the knowledge the students have, the greater the Self-Efficacy for smoking cessation they enjoy.**

**STUDY LIMITATIONS:** The current study involves a set of limitations including using subjective method of data collection where the self-reported instrument was used for data collection. Another limitation is using a non-probability "convenience" sample which involves the absence of representation for the study population.

**IMPLICATIONS FOR PRACTICE:** There is a need for the community health nurses to devote a special care for students who are of poor socioeconomic status. Moreover, there is a need for the community health nurses to initiate multispectral collaborate with the raising the knowledge of students about the deleterious consequences of smoking.

**Authorship Contribution:** All authors share equal effort contribution towards (1) substantial contributions to conception and design, acquisition, analysis and interpretation of data; (2) drafting the article and revising it critically for important intellectual content; and (3) final approval of the manuscript version to be published. Yes.

**Potential Conflicts of Interest:** None

**Competing Interest:** None

**Acceptance Date:** 30-07-2024

## REFERENCES

1. Lushniak BD, Samet JM, Pechacek TF, Norman LA, Taylor PA. The health consequences of smoking—50 years of progress: A report of the surgeon general, 2014.
2. Schroeder SA, Koh HK. Tobacco control 50 years after the 1964 surgeon general's report. *Jama*. 2014 Jan 8;311(2):141-3.
3. Nardiello C, Morty RE. World No Tobacco Day 2020. *American Journal of Physiology-Lung Cellular and Molecular Physiology*. 2020 May 1;318(5):L1010-5.
4. Ajrash KA, Al-Abedi GA. Healthy Behaviors between Medical and Non-Medical University Students. *Bahrain Medical Bulletin*. 2024 Mar 1;46(1).
5. Samet JM. Tobacco smoking: the leading cause of preventable disease worldwide. *Thoracic surgery clinics*. 2013 May 1;23(2):103-12.
6. Ritchie H, Roser M. How much CO2 can the world emit while keeping warming below 1.5° C and 2° C?. *Our World in Data*. 2023 Dec 28.
7. Ponikowski P, Anker SD, AlHabib KF, Cowie MR, Force TL, Hu S, Jaarsma T, Krum H, Rastogi V, Rohde LE, Samal UC. Heart failure: preventing disease and death worldwide. *ESC heart failure*. 2014 Sep;1(1):4-25.
8. Zacune J, Hensman C. *Drugs, alcohol and tobacco in Britain*. Elsevier; 2017 Jan 31.
9. Cornelius ME. Tobacco product use among adults—United States, 2020. *MMWR. Morbidity and mortality weekly report*. 2022;71.
10. Birdsey J. Tobacco product use among US middle and high school students—National Youth Tobacco Survey, 2023. *MMWR. Morbidity and Mortality Weekly Report*. 2023;72.
11. Perez-Warnisher MT, de Miguel MP, Seijo LM. Tobacco use worldwide: legislative efforts to curb consumption. *Annals of global health*. 2018;84(4):571.
12. Zheng Z, Xie S, Dai HN, Chen X, Wang H. Blockchain challenges and opportunities: A survey. *International journal of web and grid services*. 2018;14(4):352-75.
13. Warner LM, Schwarzer R. Self-efficacy and health. *The Wiley encyclopedia of health psychology*. 2020 Sep 2:605-13.
14. Rajani NB, Mastellos N, Filippidis FT. Self-efficacy and motivation to quit of smokers seeking to quit: quantitative assessment of smoking cessation mobile apps. *JMIR mHealth and uHealth*. 2021 Apr 30;9(4):e25030.
15. Kerlinger FN, Lee HB, Bhanthumnavin D. *Foundations of behavioral research: The most sustainable popular textbook by Kerlinger & Lee (2000)*. *Journal of Social Development Volume*. 2000;13(2):131-44.
16. Coy MJ. Research methodologies: Increasing understanding of the world. *International Journal of Scientific and Research Publications*. 2019 Jan;9(1):71-7.
17. Younis NM. Evaluation the health lifestyle of kindergarten students at Mosul city/Iraq. *International Journal of Medical Toxicology & Legal Medicine*. 2023;26(1and2):148-52.
18. Ayed AY, Younis NM, Ahmed MM. Comparison of infection severity of vaccinated and unvaccinated health workers with Corona Virus: A cohort study. *Journal of Education and Health Promotion*. 2023 Sep 1(1):336.
19. Bura'a LN, Younis NM. An Interventional Program on Nurses Knowledge and Practice towards Phototherapy in Neonatal Care Units. *International Journal of Membrane Science and Technology*. 2023 Jul 2;10(2):1428-32.
20. Younis NM, Taher AK. Efficacy of Trans Theoretical Model Intervention for Improving Behaviors related to Electronic Hookah Smoking among Healthcare Workers in Mosul Hospital: A Randomized Control Trail. *International Journal of Membrane Science and Technology*. 2023 Jul 2;10(2):1433-9.
21. Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *jama*. 2020 Apr 7;323(13):1239-42.
22. Källberg H, Ding B, Padyukov L, Bengtsson C, Rönnelid J, Klareskog L, Alfredsson L, EIRA Study Group. Smoking is a major preventable risk factor for rheumatoid arthritis: estimations of risks after various exposures to cigarette smoke. *Annals of the rheumatic diseases*. 2011 Mar 1;70(3):508-11.
23. Rumjaun A, Narod F. Social learning theory—albert bandura. *Science education in theory and practice: An introductory guide to learning theory*. 2020:85-99.
24. López-Garrido MP, Medina-Trillo C, Morales-Fernandez L, Garcia-Feijoo J, Martínez-de-la-Casa JM, García-Antón M, Escribano J. Null CYP1B1 genotypes in primary congenital and nondominant juvenile glaucoma. *Ophthalmology*. 2013 Apr 1;120(4):716-23.
25. Charkazi A, Samimi A, Razzaghi K, Kouchaki GM, Moodi M, Meirkarimi K, Kouchaki AM, Shahnazi H. Adherence to recommended breast cancer screening in Iranian Turkmen women: the role of knowledge and beliefs. *International Scholarly Research Notices*. 2013;2013(1):581027.
26. Schumann CM, Amaral DG. Stereological estimation of the number of neurons in the human amygdaloid complex. *Journal of Comparative Neurology*. 2005 Oct 31;491(4):320-9.
27. Long KQ, Ngoc-Anh HT, Phuong NH, Tuyet-Hanh TT, Park K, Takeuchi M, Lam NT, Nga PT, Phuong-Anh L, Bao TQ, Thinh OP. Clustering lifestyle risk behaviors among Vietnamese adolescents and roles of school: a Bayesian multilevel analysis of global school-based student health survey 2019. *The Lancet Regional Health—Western Pacific*. 2021 Oct 1;15.
28. Drope J, Liber AC, Cahn Z, Stoklosa M, Kennedy R, Douglas CE, Henson R, Drope J. Who's still smoking? Disparities in adult cigarette smoking prevalence in the United States. *CA: a cancer journal for clinicians*. 2018 Mar;68(2):106-15.
29. Kalkhoran S, Benowitz NL, Rigotti NA. Prevention and treatment of tobacco use: JACC health promotion series. *Journal of the American College of Cardiology*. 2018 Aug 28;72(9):1030-45.
30. Frouzandeh N, Aein F, Noorian C. Introducing a spiritual care training course and determining its effectiveness on nursing students' self-efficacy in providing spiritual care for the patients. *Journal of education and health promotion*. 2015 Jan 1;4(1):34.
31. Mamier I, Taylor EJ. Psychometric evaluation of the nurse spiritual care therapeutics scale. *Western Journal of Nursing Research*. 2015 May;37(5):679-94.
32. Salim AW, Bandar OK. Association between adolescents' body mass index and excessive use of electronic media.(2023): 124-129