

Geleneksel Sigara Kullanan Genç Yetişkinlerde Elektronik Sigaralara Yönelik Tutumların İncelenmesi

Investigating the Attitudes Towards E-Cigarettes Among Young Adults Who Smoke Traditional Cigarettes

Rıdvan AKTAN¹

ÖZ

Amaç: Çalışmanın amacı, geleneksel sigara içen genç yetişkinlerin e-sigaraya karşı tutumlarını araştırmaktır.

Gereç ve Yöntem: Çalışma, yüz yüze gerçekleştirilen kesitsel bir saha çalışmasıdır. Katılımcıların demografik ve klinik özellikleri kaydedildikten sonra, literatüre dayanarak hazırlanan e-sigara tutum anketi uygulandı. Ayrıca, geleneksel sigara tüketimi (paket.yıl) ve eğitim düzeyi sorgulandı ve kaydedildi. Katılımcıların vücut kitle indeksleri vücut ağırlığı / boy² formülü ile hesaplanıp kaydedildi. Anket, her soru için 5 puanlık likert tipi olarak hazırlanmış olup, yüksek puanlar e-sigaraya karşı olumlu bir tutumu göstermektedir. Sigara bırakma tedavisi gören, devam eden herhangi bir akciğer enfeksiyonu olan, herhangi bir kalp ve/veya akciğer hastalığı öyküsü olan katılımcılar çalışma dışı bırakıldı.

Bulgular: Çalışmaya 18-24 yaşları arasındaki 43 genç üniversite öğrencisi dahil edildi. Her bir maddenin ortalama puanı 1'in üzerinde idi. Ek olarak, e-sigaraya karşı tutum ile geleneksel sigara tüketimi arasında anlamlı bir pozitif korelasyon saptandı ($r=0.400$, $p=0.008$). E-sigaralara karşı tutum ile eğitim düzeyi arasında anlamlı bir negatif korelasyon vardı ($r= -0.344$, $p=0.024$).

Sonuç: Çalışmamız, genç yetişkinlerin e-sigaralara karşı olumlu tutumlar sergilediklerini ve bunları geleneksel sigaraların bir alternatifi olarak gördüklerini göstermektedir. Bu sonuçlar, genç yetişkinlerde e-sigaraların potansiyel zararları hakkında farkındalığı artırmak ve bunların zararsız olduğu algısını sorgulamak için acil eğitim müdahalelerine ihtiyaç olduğunu vurgulamaktadır.

Anahtar Kelimeler: E-sigara; Elektronik sigara; Genç; Sigara; Tutum

ABSTRACT

Aim: The aim of this study was to investigate the attitudes towards e-cigarettes among young adults who smoke traditional cigarettes.

Method: This is a cross-sectional field study conducted face to face. After demographic and clinical characteristics of the participants were recorded, the e-cigarette attitude survey, prepared based on the literature, was applied. In addition, traditional cigarette consumption (pack.years) and education level were asked and recorded. The survey prepared as 5-point Likert type for each question, and high scores indicate a positive attitude towards e-cigarettes. Participants' body mass indexes were calculated using the body weight/height² formula and recorded. Participants undergoing smoking cessation treatment, those with any ongoing lung infection, or those with a history of any heart and/or lung disease were excluded from the study.

Results: Forty-three young adults aged 18-24 were included in this study. The mean score for each item exceeded 1. Additionally, there was a significant positive correlation between attitude towards e-cigarettes and traditional smoking consumption ($r=0.400$, $p=0.008$). There was a significant negative correlation between attitude towards e-cigarettes and educational level ($r= -0.344$, $p=0.024$).

Conclusion: Our study indicate that young adults hold positive attitudes toward e-cigarettes, perceiving them as an alternative to traditional cigarettes. These findings underscore the urgent need for educational interventions to raise awareness about the potential harms of e-cigarettes and to challenge the perception that they are harmless among young adults.

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¹Department of Physiotherapy, Izmir University of Economics, Izmir, Turkey, e-mail: ridvanaktan@gmail.com, ORCID ID: 0000-0002-3327-461X

Sorumlu yazar/Correspondence: Rıdvan AKTAN

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Key Words: Attitude; E-cigarette; Electronic cigarette; Smoking; Young

INTRODUCTION

Electronic cigarettes (e-cigarettes) have gained rapid popularity in recent years, especially among the young adults. However, the final impact on body health has yet to be established (1). Besides, rapid development in newer e-cigarette devices with various flavors and technologies, and the belief that they are safer on lungs than the traditional cigarette has also facilitated their use and acceptance (2). Subsequently, present evidence reflects significant shifts in attitudes among the young adults population on e-cigarettes along with different perceptions between both respective implications on health and traditional tobacco use (1,3).

The use of e-cigarettes among young adults heavily depends on their attitudes towards associated health dangers and potential for addiction. Young adults who perceive e-cigarettes as being less dangerous than traditional cigarettes are likely to initiate and continue use (4,5). The concern with this phenomenon is that young adults who have not been exposed to cigarettes so far could become unknowingly addicted to nicotine through e-cigarette use, regardless of whether they use traditional cigarettes (6,7). The range of flavors that the e-cigarettes have tend to increase their appeal. Studies show that flavors play an important role in attracting young users (8,9). Still, a high percentage of young adults find that e-cigarettes are easier to quit compared to traditional cigarettes (4,10). The marketing of e-cigarettes as stylish and desirable within a social sphere complicates the issue further by making use seem normal among the young adults (11,12). Marketing strategies for young adults are dependent on such attitudes to fit the use of e-cigarettes into the young adults' social culture (13).

Additionally, peer pressure and popular culture are two other factors that serve to greatly boost the attraction of e-cigarettes to young adults. Research has reported that adolescents who perceive that the use of e-cigarettes is accepted in society are more willing to experiment with these devices themselves (11,14). Internet social networking sites are used to facilitate these attitudes and often play down the potential risks for nicotine addiction and the concomitant resultant healthcare impacts arising from e-cigarette use (15,16). Therefore, e-cigarette

attitudes among young adults are complex and interlocked with attitudes towards health, external influences, and fluidity in tobacco consumption. Given that e-cigarettes continue to grow among the young adults population, understanding these attitudes is crucial for the development of effective public health strategies for the avoidance of relevant risks and potential switching to traditional smoking. The aim of the current study was to investigate the attitude towards e-cigarettes in young adults using traditional cigarettes.

MATERIALS AND METHODS

Study Design and Population

In this cross-sectional field study, 43 young adults who were university students and aged 18-24 years were included. The study conducted face to face between March 2025 and April 2025, included students who were using traditional cigarettes. The exclusion criteria are as follows; undergo smoking cessation treatment; any ongoing respiratory infection, history of any cardiac disease, diagnosed with asthma, having any thoracic surgery. Further, participants who met the inclusion criteria but were missing questionnaires and other assessment data were also excluded. All participants were evaluated at the same time of day on the evaluation day. After demographic and clinical characteristics of the participants were recorded, the e-cigarette attitude survey was applied. The survey prepared as 5-point Likert type for each question, and high scores indicate a positive attitude towards e-cigarettes. Also, traditional smoking consumption (as pack.years) and educational level were asked and recorded.

E-Cigarette Attitude Survey

Based on studies examining attitudes toward e-cigarettes conducted in the literature (3,4,11,13), a survey consisting of 7 questions on a five-point Likert scale was created by researcher. Responses to the survey questions were scored as follows: "Strongly Agree - 4 points, Agree - 3 points, Undecided - 2 points, Disagree - 1 points, Strongly Disagree - 0 point." The scores for all questions were then totaled. Total scores ranged from 0 to 28, with higher scores indicating a positive attitude toward electronic cigarettes. The survey questions were as follows:

1. E-cigarettes are not addictive.
2. E-cigarettes are less harmful than regular (traditional) cigarettes.
3. People use e-cigarettes to quit smoking regular cigarettes.
4. E-cigarettes are an alternative for overcoming cigarette addiction.
5. E-cigarettes are less odorous than regular cigarettes.
6. E-cigarettes can be used indoors.
7. Using e-cigarettes is cooler than using regular cigarettes.

Statistical analysis

Data was analyzed using SPSS for Windows version 21.0 software (SPSS Inc., Chicago, IL, USA). Data was checked for distribution and presented as mean \pm SD. Categorical variables were presented in percentages (%). The correlations between e-cigarette attitude score and other parameters, and simple linear regressions between e-cigarette attitude with traditional smoking consumption and educational level were carried out. An alpha level of smaller than 0.05 was considered as significant.

Ethical Approval

This study was conducted in accordance with the Declaration of Helsinki and its later amendments ethical standards and approved by the Health Sciences Research Ethics Committee of İzmir University of Economics (approval number: E-97429853-050.04- 95591, date: 25.03.2025).

RESULTS

Fifty-one individuals were screened to participate in the study. Eighty of them were excluded, therefore, the study included 43 young adults (21 males and 22 females), all of whom were traditional cigarette smokers enrolled in health sciences programs at the university.

The mean age of the study population was 20.9 \pm 1.9 years, and the mean BMI was 23.7 \pm 3.3 kg/m². Among participants, 46.5% were pursuing an associate degree, while 53.5% were enrolled in a bachelor's degree program. The demographic and clinical characteristics of the participants are presented in Table 1.

Analysis of the survey responses revealed that the mean score for each item exceeded 1, indicating a generally positive attitude toward e-cigarettes. Notably, the mean scores for

questions 3, 5, and 6 were above 2, highlighting particularly strong positive perceptions in these areas (Table 2). Moreover, there was a significant positive correlation between attitude towards e-cigarettes and traditional smoking consumption ($r=0.337$, $p=0.027$, Figure 1), and a significant negative correlation between attitude towards e-cigarettes and educational level ($r=-0.324$, $p=0.034$).

DISCUSSION

This study showed that young adults students generally hold positive attitudes toward e-cigarettes and perceive them as an alternative to traditional cigarettes. Moreover, participants' strong agreement with statements that e-cigarettes are used to quit traditional cigarettes, produce less odor, and can be used indoor spaces supports the perception of e-cigarettes as a relatively harmless alternative. The fact that all participants were enrolled in health sciences programs renders the findings particularly noteworthy. Given their exposure to health-related education, these individuals might be expected to hold more cautious or negative attitudes toward e-cigarettes. However, the positive perceptions observed within this group suggest that the influence of marketing strategies, peer behaviors, and broader societal narratives may outweigh the impact of formal health education. This finding implies that knowledge-based health education alone may not be sufficient to counter the prevailing perception of e-cigarettes as a less harmful alternative to traditional cigarettes. Accordingly, preventive strategies should extend beyond conventional health education to incorporate approaches that also address social and cultural influences on young adults' attitudes and behaviors.

The attitude of young adults towards e-cigarettes is also related to their belief traditional cigarettes (15,17). Young adults have considered e-cigarettes as a lesser harmful form of traditional smoking, which can determine both attitude and usage behaviour (18,19). Research shows that the perception of e-cigarettes as a safer alternative may lead to experimentation with traditional cigarettes, as many young e-cigarettes users report having tried traditional smoking (17,19). Dobbs et al. found that the perception of e-cigarettes being less harmful than traditional cigarettes is positively associated with increased use among young adults (20).

Table 1. Demographic and clinical characteristics.

	Mean ± SD
Age, years	20.9 ± 1.9
Gender*	
Male, n (%)	21 (48.8)
Female, n (%)	22 (51.2)
Height, m	1.73 ± 0.09
Weight, kg	72.1 ± 15.2
BMI, kg/m ²	23.7 ± 3.3
Education level*	
Associate degree, n (%)	20 (46.5)
Bachelor's degree, n (%)	23 (53.5)
Traditional smoking consumption, pack.years	2.4 ± 2.3
E-cigarette attitude survey total score, (0–28)	14.2 ± 3.7

Data are presented as mean ± standard deviation (SD), *while gender and education level are presented as frequency and percentage (n, %). **Abbreviations:** BMI; Body mass index, E-cigarette; Electronic cigarette.

Table 2. The mean scores of the responses to each question of the survey.

Questions	Mean ± SD
1. E-cigarettes are not addictive.	1.8 ± 1.4
2. E-cigarettes are less harmful than regular (traditional) cigarettes.	1.5 ± 1.3
3. People use e-cigarettes to quit smoking regular cigarettes.	2.2 ± 0.9
4. E-cigarettes are an alternative for overcoming cigarette addiction.	1.7 ± 1.2
5. E-cigarettes are less odorous than regular cigarettes.	3.3 ± 0.8
6. E-cigarettes can be used indoors.	2.2 ± 1.2
7. Using e-cigarettes is cooler than using regular cigarettes.	1.6 ± 1.5

Data are presented as mean ± standard deviation. **Abbreviations:** SD; standard deviation

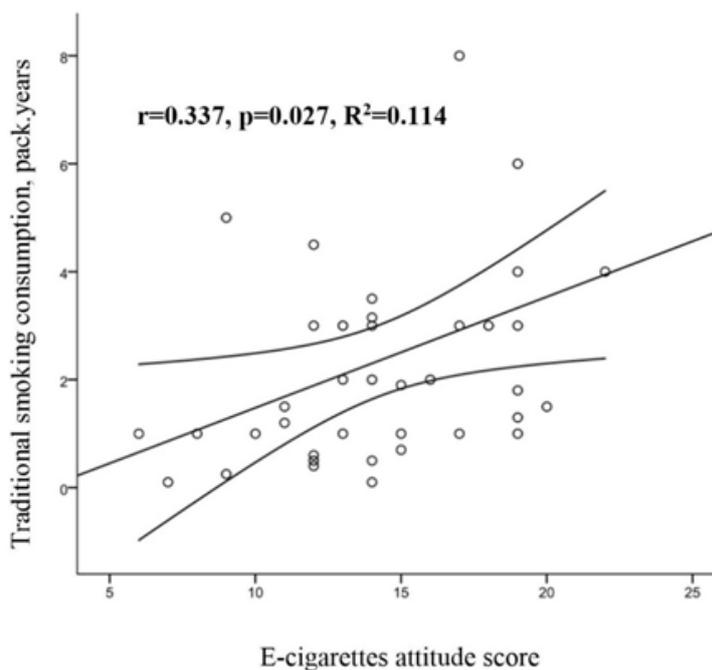


Figure 1. Relationship between attitude towards e-cigarettes and traditional smoking consumption

Namwase et al. highlighted that harmful perceptions regarding cigarettes are correlated with perceptions about e-cigarettes, suggesting that misconceptions about safety may contribute to greater experimentation with e-cigarettes among this demographic (5). Similarly, current users of traditional cigarettes have a significantly higher likelihood of using e-cigarettes, which also points towards a crossover effect between these products (17,19). This trend reflects a troubling pattern where the initial attraction to e-cigarettes can lead to sustained or increased tobacco use serving as a tool for smoking cessation. In our study participants' strong agreement with statements that e-cigarettes are used to quit traditional cigarettes supports the perception of e-cigarettes as an alternative to traditional cigarettes. Usage of e-cigarettes can also result in a switch over to traditional smoking. Many young e-cigarettes users have also tried traditional cigarettes (15). In several studies, e-cigarette usage has also been presented as having the possibility of being a precursor smoking of traditional cigarettes for adolescents and young adults. Lanza et al. stated that usage of e-cigarettes within adolescents significantly raises the risk of subsequent usage of traditional cigarettes, consequently increasing corresponding health risks (19).

Similarly, Dai et al. highlighted that usage of e-cigarettes among non-smoker adults greatly increases the risk of initiation of traditional smoking, posing a concerning issue (21). Furthermore, Chao et al. demonstrated that e-cigarette use may reinforce traditional smoking behaviors through social interactions, suggesting a crossover effect between these products (22). Collectively, these findings suggest that the initial appeal of e-cigarettes would not represent a smoking-quit tool but rather facilitate sustained or increased tobacco use. Additionally, curiosity is also implicated in initiating e-cigarette use amongst young adults. Margolis et al. revealed that young adults who exhibit higher levels of curiosity towards e-cigarettes are more likely to experiment with them, potentially leading to increased usage of traditional tobacco products in the future (23). This curiosity is frequently stoked by seductive advertising strategies, which represent e-cigarettes as fashionable or cool with flavors and products that appeal to young adults culture (24, 25). In exploring the social aspects, it is noticed that e-cigarette use is linked by a lot of young adults with being socially accepted, but feelings of social rewards do not substantially predominate over the use-motivations of these individuals. Bernat et al. mentioned that just a minimal percentage of young adults felt e-

cigarette users would be considered “cool” or have additional friends more likely than others (14). In our study, participants demonstrated a relatively low tendency to perceive e-cigarettes as “cool” or socially desirable. Furthermore, the perception of addiction plays a crucial role in shaping attitudes towards e-cigarettes (26). Agbonlahor et al. reported that in spite of young adults's popular opinion that e-cigarettes being more addictive than traditional cigarettes, this opinion did not greatly discourage their curiosity in e-cigarette smoking (26). Conversely, participants in our study perceived e-cigarettes as relatively less addictive. These contrasting findings also suggest that the perceived relative harm and addiction do not strongly oppose the allure of e-cigarettes among young adults, as the factors reinforcing their usage patterns are often more socially driven. Research also indicates that higher educational level is generally associated with more negative attitudes toward e-cigarettes (27,28). Pandey et al. showed that undergraduate students with lower educational levels had more positive attitudes towards e-cigarettes that associated with elevated use patterns (27). Similarly, in our study, positive attitudes toward e-cigarettes increased when the education level was at the associate degree. Therefore, the landscape of young adults's attitudes towards e-cigarettes is complex and influenced by multiple factors, such as perceived harm, curiosity, social dynamics, and education level. As these perceptions continue to shift, so also change usage patterns, which demand ongoing study and specific public health measures for the reduction of health risks that can be posed by both e-cigarettes and conventional tobacco products.

There are several limitations to this study that should be acknowledged. First, the validity and reliability of the questionnaire used have not been previously established in the literature, which may have influenced the accuracy of the responses and the generalizability of the findings. Second, the cross-sectional design of the study prevents drawing causal inferences and limits the ability to observe changes in attitudes toward e-cigarettes over time. Despite these limitations, the study provides valuable insights by highlighting that the examined population generally exhibits positive attitudes toward e-cigarettes. This contribution is

particularly important given the increasing prevalence of e-cigarette use among young individuals and the ongoing debates regarding their potential health effects. Future studies with longitudinal designs, validated measurement tools, and larger, more diverse samples are needed to strengthen the evidence base and provide a deeper understanding of the factors influencing attitudes and behaviors related to e-cigarette use.

CONCLUSION

This study demonstrates that young adults predominantly hold favorable attitudes toward e-cigarettes, perceiving them as a less harmful alternative to traditional smoking. Positive perceptions were more pronounced among individuals with lower educational attainment and higher levels of traditional cigarette use. Participants' endorsement of e-cigarettes as tools for smoking cessation, their lower odor emissions, and suitability for indoor use further reinforce the perception of reduced harm. These findings highlight the urgent need for developing and implementing targeted educational interventions to raise awareness among young adults about the potential health risks of e-cigarette use. Furthermore, such interventions should aim to challenge the widespread misconception that e-cigarettes are harmless, thereby promoting informed decision-making regarding tobacco and nicotine consumption.

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